Final Report

Evaluation of the Cape York Aboriginal Australian Academy Initiative

for

Department of Education Training and Employment Queensland

Prepared by

Australian Council *for* Educational Research

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Table of contents

List of figures and tables

Acknowledgements

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Executive Summary

In October 2012, the Queensland Department of Education Training and Employment (DETE) contracted the Australian Council for Educational Research (ACER) to undertake an evaluation of the Cape York Aboriginal Australian Academy (CYAAA) Initiative.

The CYAAA Initiative is designed to improve student outcomes. It is a pilot program operating in primary schools at Coen, Hope Vale and Aurukun. (The trial began in January 2010 in Aurukun and Coen, and in January 2011 in Hope Vale.) The Initiative is part of the Cape York Welfare Reform education stream.

Purpose, evaluation questions and scope of the evaluation

The main purpose of the evaluation was to identify the impact of the CYAAA Initiative on student learning and outcomes. This involved addressing three research questions:

- What is the impact of the CYAAA Initiative on student learning in the pilot communities?
- To what extent are the CYAAA Initiative project outcomes being met?
- What other impacts of the CYAAA Initiative are evident?

The scope of the evaluation specifically excluded investigation of, or comment on:

- the CYAAA model and concepts underpinning the model
- pedagogical methodologies used in pilot schools
- resourcing of the CYAAA
- comparisons with other schools' outcomes other than those comparable schools identified in the evaluation framework
- Indigenous communities and any social issues not specifically related to CYAAA as outlined in the evaluation framework.

The communities and schools

The three schools examined by the evaluation have quite different contexts and quite different starting points. In particular, Aurukun differs from Coen and Hope Vale by being located in a more socio-economically and educationally disadvantaged community. The campuses also differ in size. Coen has less than 50 students, Hope Vale has around 120 students and Aurukun has over 200 students.

The CYAAA educational model

The operations of the three CYAAA school campuses are underpinned by an instructional model that organises the curriculum and its delivery into three separate learning or knowledge domains: Class, Club and Culture.

- In the **Class** domain, literacy, numeracy and English language are taught using a Direct Instruction methodology and delivered within an English-only immersion environment. The primary aim is to get children reaching or exceeding the national minimum standards for their Year levels in English literacy and numeracy.
- The **Club** domain provides children with artistic, musical and sporting activities. The aim is to give children increased confidence and prepare them for moving between homelands and work and study in the outside world. The Club program covers the Key Learning Areas of Health, Physical Activity and Personal Development, and The Arts (Music).
- The **Culture** domain provides a comprehensive Indigenous culture and language program. Its aims are to give children fluency in their own culture and provide support for their identity as bicultural people.

The CYAAA model also recognises the importance of having a number of Community initiatives in place to support the delivery of the Class, Club and Culture programs. These initiatives include the Student Case Management approach to attendance, school readiness and parent engagement, working in concert with the Family Responsibilities Commission (FRC).

In this way, the CYAAA educational model aims to bring together diverse curriculum strands to provide a rounded educational experience, increase levels of learning success, and better prepare students for their future learning.

Methodology

There were no new quantitative data collected by the evaluation. All data were supplied by either DETE or by CYAAA. The quantitative data included:

- NAPLAN test data from 2008 to 2012 for CYAAA schools and those schools used for the comparison analyses
- student attendance rates from 2008 to 2012
- school and student background variables from 2008 to 2012
- DETE staff data for the three campuses
- PAT-R and PAT-M test results for 2011 and 2012
- DIBELS test results from 2010 to 2012
- student attendance data in each term from mid 2010 until mid 2012.

ACER researchers conducted site visits to the three CYAAA school campuses and other locations to collect qualitative data. The range of methods used to collect data during the visits included observations, interviews, and informal discussions. Some 73 people with knowledge of the CYAAA Initiative provided information to the evaluators. These included school staff, parents and carers, and community members who hold key positions in the community.

The Monitoring and Evaluation Framework, prepared by Professor Peter Bycroft, and under which the evaluation operated, proposed that the methodology be governed by:

- the use of mixed methods
- triangulation of perspectives
- the use of multiple and convergent methods.

The evaluation used this proposed methodology.

Challenges faced by the evaluation

The evaluation methodology was proposed by Bycroft in anticipation of a range of problems that the evaluation would confront, namely:

- the short period of time for which the CYAAA Initiative has been operating
- the challenge of making a link between the Initiative and student outcomes (the problem of attribution)
- inevitable limitations in the data available to the evaluation.

Period of operation of the Initiative

The CYAAA Initiative has been operating for only a short time. It was introduced into Aurukun and Coen in January 2010 and Hope Vale in January 2011. International research into the time it takes for new initiatives in schools to have a measurable impact raises a question about whether the CYAAA Initiative has had time to generate changes large enough to be measured. For example, Borman et al (2002), in their meta-analysis of comprehensive school reform and student achievement, concluded that it can take more than three years to implement an initiative that results in improved student outcomes. Fullan (2006) argues that significant change can be expected to take a minimum of two or three years. More recently, Pendergast et al (2011) identified three phases of reform: *initiation* (which involves planning and laying the foundations), *development* (which is generally focused

on teachers and the development of processes and systems) and *consolidation* (which is mainly about refinement). Pendergast et al suggest that the initiation phase takes one to two years, the development phase takes from two to five years and the consolidation phase is around five to 10 years. The three CYAAA schools in the evaluation appear to be still in the development phase, given that the Club and Culture programs are still being developed. The evaluation of impact on student learning took place for Hope Vale only one year after the Initiative was introduced and two years after it was established in Aurukun and Coen. Thus the length of time that the program has been operating is short, and it is possible that there has been insufficient time for the CYAAA Initiative to have had an impact that can be measured.

Attribution

The evaluation was conducted in complex settings where causal attribution – that is, identifying the unique contribution of the Initiative to changes in student outcomes – was challenging. The most powerful data planned to be available to the evaluation for making attributions was the student test data. So the question of attribution hinged, to a large extent, on the quality of these data.

Data

All data collected for program evaluations have limitations, and this was the case with the data used in the evaluation of the CYAAA Initiative. The quantitative data were compromised by large amounts of missing data. The qualitative data collected through the site visits were based on a point in time, and so it was not possible to make direct observations of changes that may have occurred. The qualitative data were further limited in that, ideally, participants in the interviews and discussions would have been chosen randomly rather than on the advice of CYAAA staff and local community members.

The impact of the CYAAA Initiative on student learning in the pilot communities

The answers to the question, *What is the impact of the CYAAA Initiative on student learning in the pilot communities?* are:

- It is not possible to conclude from the available test data, except in limited circumstances, whether or not the CYAAA Initiative has had an impact on student learning. This is because there is too much missing information to draw a conclusion, one way or the other.
- Typically, the school staff describe improvements in student learning and attribute these improvements to the CYAAA Initiative.
- School staff report that the rate of improvement has been greater in literacy than in numeracy.
- It is too soon to tell if Club or Culture or both is having an impact on student learning.

Because the evaluation was unable to use the test data, it became difficult to empirically ascribe a causal connection between the Initiative and student learning outcomes. That said, it needs to be acknowledged that school and community members provided a wide range of anecdotal evidence that suggests there is such a connection and that the Initiative is indeed having a positive impact on student outcomes.

The extent to which the CYAAA Initiative project outcomes are being met

It was found that:

- there is a continuing, high level of attendance by community members in CYAAA events, especially for the end of year performance at each campus
- more families are making a financial commitment to their children's schooling through the Student Education Trusts (SETs) and the Food clubs, although the extent of this could not be measured. In this way, families are taking more responsibility for their children's education
- a large proportion of students are participating in Club and in Culture
- student behaviour has improved
- teachers have higher expectations of their students

- there was some indication of higher teacher expectations
- there was some evidence of increased student self-confidence
- there was some weak evidence (due to large amounts of missing data) of a greater proportion of students now being at or above the national standards for literacy in one sub-strand of literacy of NAPLAN. Specifically, there was an increase in proportion that was statistically significant:
  - for 'grammar and punctuation' for Year 7 (all campuses pooled).
  - For 'grammar and punctuation' (all three year levels pooled across all schools).

  For Coen, where the numbers of students were too small to use tests of statistical significance, but missing data were low, differences do seem meaningful and do suggest an increase in performance for the pooled year levels.

There was less conclusive evidence about the extent to which there are effective working relationships with community leaders and cross-sectoral agencies. In particular, there was conflicting evidence about working partnerships with community leaders. There are clearly effective working relationships with community leaders and cross-sectoral agencies in one community, but for the other two communities, there were widely differing views.

It was found that the CYAAA Initiative project outcome related to student attendance has not been met. Student attendance has declined in two campuses during the period of the CYAAA Initiative despite the perception by many stakeholders that it has increased. This discrepancy between the ACER finding and the perceptions of informants may be explained in part by more stringent roll marking procedures implemented by CYAAA. Despite the declines in attendance, the attendance rates for Aurukun, which increased markedly at the inception of the Cape York Welfare Reforms (prior to the CYAAA), have not returned to the low levels experienced prior to the welfare reform trial.

Other impacts of the CYAAA Initiative

The CYAAA Initiative appears to have:

- had a positive impact on the professional learning of school staff
- made teachers feel more accountable for their teaching
- provided a program that works well for teachers and their teaching
- reduced staff turnover
- reduced the incidence of conflict in the community spilling over into the schools
- not had any negative unintended outcomes.

However, there was conflicting evidence available to the evaluation about the extent to which Indigenous teachers are engaged in the school and about the CYAAA Initiative's unique impact on the wider community.

Concluding comment

The CYAAA Initiative has been in operation for only a short period of time, and so the task of finding an impact was likely to be difficult given this early stage of development. However, school staff and community members at Aurukun, Coen and Hope Vale report that the CYAAA Initiative has had a wide range of positive outcomes. These reports are confirmed by other qualitative data such as participation rates in Club and Culture and in school events, investment in SETs and contributions made by parents to Food clubs. The extent of these outcomes – especially in relation to student learning – has proven difficult to quantify. This is because the data that were expected to provide these measures were compromised by too much missing information.

Introduction

In October 2012, the Queensland Department of Education Training and Employment (DETE) contracted the Australian Council for Educational Research (ACER) to undertake an evaluation of the Cape York Aboriginal Australian Academy (CYAAA) Initiative.

The CYAAA Initiative is a new approach to primary school education characterised by a strong focus on the three learning domains of Class, Club and Culture, in conjunction with Community initiatives and a student case management approach. The Initiative seeks to improve student outcomes through a unique partnership between CYAAA and Education Queensland (EQ). It involves the operation of the CYAAA, which consists of three primary schools (in Coen, Hope Vale and Aurukun).[1]

The CYAAA Initiative is a pilot program. The normal operation of the schools is funded through the recurrent allocation made to all state schools in Queensland. Additional funding has been provided by DETE to trial Class, Club and Culture programs. The Australian Government (specifically the Department of Families, Housing, Community Services and Indigenous Affairs) funds the CYAAA Student Case Management Framework that operate as part of the CYAAA and Cape York Welfare Reform (CYWR) model. During 2011-2012 CYAAA also received funding from the Department of Education, Employment and Workplace Relations Parent and Community Engagement program for initiatives such as the leadership camp.

The focus of the evaluation is on the impact of the CYAAA Initiative – as shown through the impact of Class, Club and Culture on student learning – and not of the wider CYWR program. There are, no doubt, elements of the CYWR that touch on elements of the CYAAA Initiative and its impact – indeed CYAAA is part of the CYWR education stream and is governed as part of the CYWR governance model. However, the focus of the evaluation was on the impact of the CYAAA Initiative.

Purpose, evaluation questions and scope of the evaluation

The main purpose of the evaluation was to identify the impact of the CYAAA Initiative on student learning. ACER was asked to use the CYAAA Monitoring and Evaluation Framework ('the Framework') prepared by Professor Peter Bycroft in 2011 as a guide. The Bycroft framework was designed to address and answer the following four evaluation questions:

- Are there early indications of progress, or lack thereof, in CYAAA's delivery of project outputs?
- Are there indications of progress in the achievement of the project outcomes?
- What is the impact of the CYAAA Initiative on student learning in the pilot communities?
- Is the CYAAA Initiative making a difference?

To avoid overlap between them, these questions were subsequently reduced and amended. The three revised questions became:

- What is the impact of the CYAAA Initiative on student learning in the pilot communities?
- To what extent are the CYAAA Initiative project outcomes being met?
- What other impacts of the CYAAA Initiative are evident?

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1 The Monitoring and Evaluation Framework under which the evaluation was conducted provides the following definition of the CYAAA Initiative:

> *The Cape York Aboriginal Australian Academy (CYAAA) is a not-for-profit organisation led by Noel Pearson, which delivers, in partnership with Education Queensland, a 'best of both worlds' primary school education to Indigenous students. It aims to close the academic achievement gap between Indigenous and mainstream students and to support Cape York children's bicultural identity.*
>
> *The Academy's program incorporates three distinct but related learning domains:*
>
> *Class: dedicated to teaching mainstream curriculum in English literacy and numeracy;*
>
> *Club: enriching extracurricular artistic, musical and sport programs;*
>
> *Culture: comprehensive Indigenous culture and language programs.*
>
> *The learning domains are supported by 'Community' initiatives, which include a Student Case Management framework to monitor attendance and make sure students are school ready.*

The scope of the evaluation specifically excluded investigation of, or comment on:

- the CYAAA model and concepts underpinning the model
- pedagogical methodologies used in pilot schools
- resourcing of the CYAAA
- comparisons with other schools' outcomes other than those comparable schools identified in the evaluation framework
- Indigenous communities and any social issues not specifically related to CYAAA as outlined in the evaluation framework.

The operation of the evaluation

A working group with representatives of DETE, the CYAAA and ACER was set up to oversee the evaluation. Throughout the evaluation the working group held weekly teleconferences to identify and address potential issues, ensure timelines were being met, and organise for the ethical (that is, de-identified) transfer of DETE and CYAAA data sources or resources.

A reference group comprising the Deputy Director General Education Queensland (or delegate), a CYAAA Board member (or delegate) and the CEO of ACER was also set up to provide high level advice.

The Bycroft Monitoring and Evaluation Framework describes the research principles around which the evaluation was to operate. These principles required the evaluation to:

- apply 'state-of-the-art' monitoring and evaluation methods
- conform to the Australasian Evaluation Society's (AES) code of ethics
- have structured, iterative consultations with DETE and CYAAA
- use rigorous methodology, providing defensible, objective, evidence-based findings
- use multiple and convergent methods (triangulation) blending quantitative and qualitative data
- use already existing data
- use a small number of meaningful indicators
- cooperate with other evaluators or researchers to minimise duplication and share information and data
- develop customised monitoring and evaluation instruments only when existing data sources do not meet the evaluation's needs
- ensure methodology and results accurately reflect CYAAA performance
- undertake benchmarking of CYAAA performance with comparable other schools and other school-based initiatives.

CYAAA context

The CYAAA Initiative is set in the wider context of the CYWR program[2] and is part of the Cape York Welfare Reform education stream. In conjunction with the CYAAA educational Initiative, three complementary strategies, which are part of the broader Cape York Welfare Reform strategy, have been introduced into the three communities of Hope Vale, Coen and Aurukun. These reform strategies include:

2 According to FaHCSIA:

> *[The] Cape York Welfare Reform is a partnership between the four communities, the Australian Government, the Queensland Government, the Cape York Institute for Policy and Leadership, and Cape York Partnerships. The reforms ... aim to create incentives for individuals to engage in the real economy, reduce passivity and re-establish positive social norms. The idea behind the reforms is that passive welfare dependence is damaging to individuals and communities and erodes personal responsibility and motivation. Cape York Welfare Reform aims to restore social norms and local authority and change behaviours in response to chronic levels of welfare dependency, social dysfunction and economic exclusion across the four Cape York communities.*

See: http://www.fahcsia.gov.au/our-responsibilities/Indigenous-australians/programs-services/communities-regions/cape-york-welfare-reform viewed 12 March 2013.

- The Family Responsibilities Commission (FRC) – a body which has legislative authority to impose conditional income management in situations where a child is absent from school without reasonable explanation, or where a person is involved in child safety issues, is convicted in court or is not meeting the conditions of a tenancy agreement. As its name suggests, the FRC is about getting people to take responsibility for themselves, their families and their community. Specifically, as the Commission notes:

  > *The purpose of the Commission is to support the restoration of socially responsible standards of behaviour and to assist community members to resume and maintain primary responsibility for the wellbeing of their community and the individuals and families within their community.*[3]

- The Student Case Management Framework addresses student attendance and school readiness to ensure not only that children are at school but also that the conditions that determine their capacity to engage in education – their health, nutrition, wellbeing and material needs – are systematically addressed. The Student Case Management Framework is part of the CYAAA, not a separate initiative.

One of the challenges for the evaluation was to identify the extent to which any impact on students is unique to the CYAAA Initiative independent of these other reform strategies or changes in the communities generated from within the communities themselves or by other agencies and groups.

The communities and schools

The three schools examined by the evaluation have quite different contexts and had quite different starting points. For example, it is likely that the level of student achievement prior to the start of CYAAA varied across the sites (although ACER was unable to establish this empirically), and the relative experience of the CYAAA teaching teams would also have varied. The schools also started the Initiative at different times.[4] (The CYAAA trial began in January 2010 in Aurukun and Coen, and in January 2011 in Hope Vale.) The three schools will also have been exposed to different programs previously run in the schools. For example, Cape York Partnerships has run education programs in the Coen school since 2000 and the Hope Vale school only commenced with the CYAAA Initiative in 2011 and has operated for half the time of the other CYAAA campuses.

Bycroft[5], in preparing the groundwork for the evaluation of the CYAAA Initiative, examined the differences between the three communities of which the schools are part. He used data from the Australian Bureau of Statistics and other sources for these comparisons. He found the following differences existing in the communities and schools (prior to the CYAAA intervention):

Compared with Coen and Hope Vale, the communities or the school at Aurukun had

- lower socio-economic status
- a higher proportion of single parent families
- an equivalent level of unemployment to Coen but higher than Hope Vale
- higher average number of persons per household
- higher average household income
- a lower percentage of the community (20 to 49 year olds) who have completed Year 12
- a higher percentage of educationally 'at risk' students
- higher youth dependency (ratio of population age under 19 to those in workforce age – 20 to 49 year olds)
- English was primarily a second language, with most families speaking a local Indigenous language at home
- lower staff retention
- lower student academic performance in Year 3 and Year 5 as measured by NAPLAN (reading and numeracy)
- lower levels of teacher and parent satisfaction with the school on key questions.

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3 See: http://www.frcq.org.au/ viewed 12 March 2013.

4 In the language of classical experimental design, these different starting times mean that each campus has received, in effect, different levels of the 'treatment'.

5 Byrcroft, *Monitoring and evaluation framework Cape York Aboriginal Australian Academy Initiative*, unpublished, undated.

Compared with Aurukun and Hope Vale, the communities or the school at Coen had

- a slightly lower percentage of Indigenous persons in the community
- lower levels of youth dependency
- lower average number of persons per household
- a higher percentage of persons (20 to 49 year olds) who have completed Year 12
- higher levels of offences against persons and others
- higher levels of teacher and staff satisfaction with the school on key questions including higher satisfaction with community engagement.

Compared with Aurukun and Coen, the communities or the school at Hope Vale had

- a slightly higher socio-economic status
- a lower unemployment rate
- a higher percentage of community who are families with children
- higher levels of assault-related hospital admissions
- higher student academic performance in Year 3 and Year 5 as measured by NAPLAN (reading and numeracy).

These data led Bycroft to conclude that:

> *... Aurukun differs substantially from the other two intervention sites in terms of disadvantage and the likely difficulties in implementation of reform (starting from a lower baseline socio-economically and educationally).*

Aurukun is an Indigenous community of 1,295 people[6] situated on the western side of Cape York Peninsula in far north Queensland. From the accounts of people who lived at Aurukun[7] during the years 2006-2009, and from press reports during this period[8], the Aurukun community had become dysfunctional. It was into this setting that the Cape York Welfare Reforms and the CYAAA Initiative were introduced at Aurukun.

Table 1 shows the key starting times for each of the various elements of the CYAAA Initiative at Hope Vale, Coen and Aurukun. It can be seen that while Coen and Aurukun have run roughly in parallel with each other, Hope Vale became involved a year later.

Table 1 Key times for the start of various elements of the CYAAA Initiative for each of the three campuses

		Hope Vale	Coen	Aurukun
July 2008	Welfare reform commences	Attendance Case Management introduced	Attendance Case Mgt introduced	
April 2009				Attendance Case Management introduced
January 2010	CYAAA trial commences		Becomes a CYAAA campus Class, Direct Instruction commences	Becomes a CYAAA campus Class, Direct Instruction commences
July 2010		Club (sport) introduced	Club (sport) introduced	
January 2011		Becomes a CYAAA campus Class, Direct Instruction and Club (sport) commences	Full Club introduced Interim Culture program introduced	Full Club introduced Interim Culture program introduced
April 2011	Full Club introduced	Full Culture program introduced	Full Culture program introduced	
October 2011	Full Culture program introduced			

6 Australian Bureau of Statistics, June 2012.

7 Personal communication from a former teacher at Aurukun School.

8 For example: Sep 20, 2007. *Aurukun Violence Sparks Intervention Call*, 'For the second time this year, riots have shaken the tiny community of Aurukun in far north Queensland. Last night hundreds of people rampaged through the remote Indigenous community. Queensland's Opposition says a Federal Government-style intervention is needed to solve long-term problems.' http://www.abc.net.au/news/2007-09-20/aurukun-violence-sparks-intervention-call/676160

The campuses also differ in size. Coen is a small school (less than 50 students), Hope Vale somewhat larger (around 120 students) and Aurukun is a school with a large number of students (over 200).

Table 2 provides details of enrolment numbers at the schools for the years 2008 to 2011.

Table 2 Enrolments at each of the three schools by year level from 2008 to 2011

	Coen				Hope Vale				Aurukun			
Grade	**2008**	**2009**	**2010**	**2011**	**2008**	**2009**	**2010**	**2011**	**2008**	**2009**	**2010**	**2011**
PY	4	5	4	5	23	9	21	17	46	21	40	26
1	2	4	5	2	9	21	9	19	4	25	21	38
2	5	2	4	4	12	11	23	12	20	17	28	19
3	5	7	6	4	21	12	7	19	21	21	15	27
4	5	5	6	4	11	19	13	9	28	20	22	14
5	8	6	7	5	21	12	18	16	17	28	19	20
6	4	8	6	5	17	24	14	18	29	15	23	19
7	2	4	11	7	17	18	19	15	16	27	15	26
8									38	7	17	10
9									17	17	7	8
10									10	14	16	10
Total	35	41	49	36	131	126	124	125	246	212	223	217

Specific details about student achievement levels, attendance and related school-based measures before and after the introduction of the Initiative are described in the body of the report.

Governance

Under a formal agreement with Education Queensland, Aurukun, Coen and Hope Vale, were incorporated into the CYAAA Initiative. The schools are jointly governed through an independent board and EQ in a partnership agreement defined in a Memorandum of Understanding. The Academy Board is chaired by an Indigenous leader, currently Mr Noel Pearson. The wider affairs of the Academy, including matters of curriculum design and monitoring student progress, come under the purview of a Cairns-based Chief Executive Officer who answers to the Board. An Executive Principal, also based in Cairns, has administrative authority across the three Academy schools, while at the local level each school is managed on a day-to-day basis by its own Campus Principal.

The CYAAA educational model [9]

The operations of the three school campuses in the evaluation are underpinned by an instructional model that organises the curriculum and its delivery into three separate learning or knowledge domains: Class, Club and Culture.

In the Class domain literacy numeracy and English language are taught using Direct Instruction methodology and delivered within an English-only immersion environment. The aim is to get children reaching or exceeding the national minimum standards for English literacy and for numeracy. Initially there was a large number of children who had limited reading and language skills, so it was decided to focus on these domains for four to four and a half hours per day. With the children now perceived to be at or approaching grade level, the plan is to extend the program into advanced writing, high school preparation (for example, study skills), Information Communication Technology and other areas and reduce the amount of Direct Instruction around reading for students at or above their grade level.

Club and Culture programs operate primarily from 3.00pm to 4.30pm each day and are restricted to children in Year 2 and above, with the younger children going home after school at 3.00 pm.[10] Thirty minutes per morning is dedicated to the Culture

9 This section of the report draws on the CYAAA website <http://cyaaa.formwork5.com/programs/> and on the document entitled *The Most Important Reform: Cape York Aboriginal Australian Academy: Business Case: November 2009*, along with other information supplied directly to ACER by CYAAA.

10 There is some variation in hours across the three schools.

program with the rest of the program delivered outside normal school hours. (However, as CYAAA has an extended school day, all programs officially operate during 'school hours'.)

The Club domain involves providing the children with artistic, musical and sporting activities. The aim is to give children increased confidence and prepare them for transition from homelands and work and study in the outside world. Specifically, every student receives 30 minutes each of Music and of Health. They also receive three and a half hours of physical activity with a focus on a different sport each term. Table 3 shows the sports conducted each term at each of the schools.

Table 3 Sports for each term at each school for 2011 and 2012

	Aurukun		Hope Vale		Coen	
	2011	2012	2011	2012	2011	2012
Term 1	Tennis	Tennis	Tennis	Tennis	Tennis	Tennis
Term 2	Athletics	Athletics	Athletics	Athletics	Athletics	Athletics
Term 3	AFL*	AFL	AFL	AFL/QRL**	AFL	AFL
Term 4	Cricket	Hockey	Cricket	Swimming	Cricket	Hockey

** Australian Football League, that is Australian rules football **Queensland Rugby League*

Special sporting events are also organised, including:

- The AFL Crusader Cup. In 2010 and 2011 this event was held in Aurukun with six different schools participating including Coen. In 2012 it was held in Weipa and Cooktown. Teams from Aurukun, Coen and Hope Vale participated (around 200 community members attended each time.) As the Crusader Cup was held in Weipa in 2012, Aurukun held its own AFL competition – The Aurukun Cup. (This attracted a 'high attendance' from community members.)
- Athletics carnivals. In 2011 and 2012 all campuses held carnivals to finish up the Term 2 sport of Athletics. These track and field events were held over two days.
- Indigenous tennis camp. In Term 3, 2012 four students from each campus of Aurukun, Coen and Hope Vale were invited to play at a three-day tennis camp in Cairns.

Selected students also learn a musical instrument and play as part of an instrumental band. There is a partnership with the Queensland Music Festival which supports the formation of a stage band in each of the three schools. Music teachers received specialist training in Cairns and in each community. The bands were first formed in Term 3, 2012. The stage bands performed at the end of year events held in each community.

The Club program covers the Key Learning Areas of Health, Physical Activity and Personal Development, and The Arts (Music).

The Health program covers:

- Term 1: Identity and Emotions
- Term 2: Anatomy and Personal Safety
- Term 3: Nutrition and Healthy Lifestyles
- Term 4: Interpersonal Skills, Decision Making and Problem Solving.

Students also practice skills learnt through Reading Club and Mathematics. Reading Club teaches proper use of a library and encourages recreational reading.

In Mathematics students use an online program to race against other students and solve maths problems. As well as mastering their maths skills, this program also improves their ICT skills.

The **Culture** domain seeks to provide a comprehensive Indigenous culture and language program. Its aims are to give children fluency in their own culture and provide support for their identity as bicultural people. An Indigenous language is sometimes used for instruction.

Each term, students study a unit of work that culminates in a 'rich' task. The unit of work is based on the Australian Curriculum (or draft version), but includes local community knowledge. The content of the work for each term is as follows:

- Term 1: Identity and History (Key Learning Area – Studies of Society and Environment – History)
- Term 2: Material Culture and Art (Key Learning Area – The Arts – Visual Arts)

- Term 3: Homeland Studies (Key Learning Area – Science, and Studies of Society and Environment – Geography)
- Term 4: Performance (Key Learning Area – The Arts – Dance, Drama, Music).

The Culture program curriculum is designed on a two-year rotational basis. Each student spends about two years in each group. Content in each group aligns to the following year levels:

- Group 1: Prep/Year 1
- Group 2: Year 2/3
- Group 3: Year 4/5
- Group 4: Year 6/7 (This is still in development as, according to CYAAA, students are only just reaching this level of literacy).

Students are assessed on their participation throughout the term and on their contribution to the 'rich' task. There are also weekly mastery tests to check the students' knowledge and understanding. Progress through lessons and mastery test achievement is recorded on Lesson Progress Charts. These charts are monitored to ensure all Key Learning Areas are being covered and that students are mastering concepts.

The 'rich' tasks are a culmination of each term's work. The tasks are as follows:

- Term 1: Epic timeline – Students investigate the history of their family, community and nation. They produce a timeline which maps key events and people in the community's history. Through recording oral histories and undertaking teacher-guided research, students prepare individual contributions to the epic timeline, by way of posters, presentations and illustrations about a significant person or event in history.
- Term 2: Art exhibition – Students prepare a community-wide exhibition showcasing one or more traditional artefacts and artistic techniques. The exhibition covers the history and traditional use of the artefact or technique, the process involved, and how this process has evolved over time.
- Term 3: Annotated map – Students work in groups to prepare an annotated map and individual workbooks demonstrating their knowledge of important cultural and environmental features of their homelands. They learn how people care for these places and about threats to the environment.
- Term 4: Community performance – Students work within teams, in different capacities, in planning, organising, creating and performing a celebratory event, such as the end of year school Awards Night. The event includes a showcase of students' own and other cultures through, for example, traditional dance or short film. Involvement extends to planning the agenda, invitations, costumes, presentations and performances, as well as filming the event.

Local community members are employed as Culture Tutors (specific to each community) to deliver the Culture Program content alongside non-Indigenous teachers. Community members with specialisations such as rangers and artists also contribute as tutors.

As part of the Homelands unit of the Culture program, culture camps are held on traditional homelands supported by local Indigenous groups.

The Coen camp was held mid September in 2012. Along with the Yintjingga Aboriginal Corporation, Year 4-7 students participated in a three-day camp at the Lama Lama homelands of Port Stewart. Each day involved traditional activities such as cooking damper, spear making, digging for mussels, and fishing. Rangers led guided bush walks, described the history of the area and the uses of different plants. There was a day visit to One Mile beach for a cultural 'fun day' and a visit to the Lama Lama Ranger base to study maps.

The Hope Vale camp was held from the 18-20 September for Year 4-7 students. It was held at Archer Point with the Yuku – Baja – Muliku rangers. Students learnt skills such as compass orienteering and knot-tying. Students also explored the rangers' projects, for example, sea turtle nurseries. Of an evening there was some corroboree and storytelling.

The Aurukun camp was hosted by the Traditional Owners for Year 5-7 students from 17-19 October. Students worked in small teams to set up their campsites, plan activities for the day and cook their own food. They rotated through activities such as body painting, damper making, tie dying, fishing, orienteering and necklace making. Staff from Rio Tinto visited the students to provide information on the plans for a new bauxite mine near Amban.

Table 4 shows the percentage of students enrolled and attending Club and Culture for the period 2010 to 2012 at each of the three campuses.[11]

Table 4 Percentage of students enrolled and attending Club and Culture 2010 to 2012

	Per cent of students enrolled in Club and Culture			Per cent of students attending Club and Culture		
	2010	2011	2012	2010	2011	2012
Aurukun	79%	79%	93%	N/A	78%	94%
Hope Vale	N/A	N/A	60%	N/A	54%*	60%
Coen	90%	90%	91%	N/A	63%	74%

**Term 3 and 4 only*

Table 5 shows the number of hours of Club and Culture each week at each campus, and the number of cultural, arts, sporting and music events for the period 2010 to 2012.

Table 5 Number of hours of Club and Culture each week and number of events, 2010 to 2012

	Number of hours of Club and Culture delivered each week			Number of cultural, arts, sports and music events		
	2010	2011	2012	2010	2011	2012
Aurukun	N/A	7	10	N/A	17	20
Hope Vale	N/A	6.5	10	N/A	17	28
Coen	N/A	7	8.5	N/A	15	22

Partnerships have been formed around Club and Culture so students receive high quality sport and music training. Partners include:

- Tennis Queensland
- Athletics North Queensland
- Remote and Indigenous Hockey
- Cricket Queensland
- Swimming Australia
- Queensland Music Festival.

Prior to the operation of Club and Culture, tennis, swimming and hockey were not offered at the schools, nor was there access to specialist music teachers or instrumental music.

The CYAAA model also recognises the critical importance of having a number of Community initiatives in place to support the delivery of the Class, Club and Culture programs. These initiatives include the Student Case Management approach towards attendance and school readiness working in conjunction with the FRC. A typical daily timetable for a CYAAA campus is shown in Table 6.

The Student Case Management approach helps to ensure that children are at school but also, that factors which shape their capacity to engage in education – their health, nutrition, wellbeing and material needs – are systematically addressed.

Table 6 Typical daily timetable at a CYAAA campus

Activity	Duration
Parade	
Literacy and language	2 hours
Break	0.5 hours
Culture	0.5 hours
Numeracy and academic core (science in upper grades)	1.5 hours
Break	0.5 hours
Literacy and Language (for classed below grade level)	1.0 hour
Club and Culture	1.5 hours

11 Hope Vale Club and Culture attendance was reported by CYAAA to have strongly improved in 2013.

Parade, held at the beginning of each day, provides a structured start to the day. It is seen as an opportunity to promote CYAAA values and expectations, to celebrate student achievements and successes, and as a means of encouraging children to be ready for learning.

Thus the CYAAA educational model aims to bring together diverse strands of learning to teach children and prepare them for their future years of learning. One community member summarised the CYAAA Initiative in this way:

> *[the CYAAA Initiative is] a change in the way of delivering education to the kids. The aim for the education is to have a more holistic approach and a specialised way of teaching. So it's not just about sitting down in the classroom and learning – which a lot of it is – it's also about getting the kids ready for school; prepared for school and learning in a structured environment. It's about a different way of approaching education for Indigenous kids.*

This report

This report describes the evaluation of the CYAAA Initiative. It first describes the methods used, then the issues in the data available to the evaluation. The report then presents findings and draws these together into a conclusion.

Methodology

The Monitoring and Evaluation Framework proposed a methodology that required a range of data to be collected. The evaluation used this methodology.

This section of the report first describes the data sources that were drawn upon for the evaluation. It then provides a brief description of the methods used to analyse the data and concludes with a discussion of the methodology.

The data

Quantitative data

There were no new quantitative data collected by the evaluation. All data were supplied by either DETE or by CYAAA.

The following quantitative data were provided to ACER by DETE:

- NAPLAN test data from 2008 to 2012 for CYAAA schools and those schools used for the comparison analyses
- Student attendance rates from 2008 to 2012 (these data were used for the comparison analyses)
- School and student background variables from 2008 to 2012 (these data were used as part of the matching of students in CYAAA schools and other students)
- DETE and CYAAA staff data for the three campuses.[12]

The following quantitative data were provided to ACER by CYAAA:

- PAT-R and PAT-M test results of 2011 and 2012
- DIBELS test results from 2010 to 2012
- Student attendance data in each term from mid 2010 until mid 2012.[13]

Qualitative data

ACER researchers conducted site visits to the three CYAAA school campuses and other locations to collect qualitative data. The range of methods used to collect data during the visits included observation, interviews, and informal discussions (as appropriate). Interview questions were customised for each setting. Their primary focus was on the impact of the CYAAA.[14]

Specifically, formal, semi-formal interviews or informal discussions were conducted with 73 people with knowledge of the CYAAA Initiative, including school staff, parents and carers, and community members who hold key positions in the community (for example, the Director of Nursing, the Senior Sergeant of Police, Commissioner in the Family Responsibilities Commission, Primary Health Care Worker, Indigenous Ranger, etc). Table 7 summarises the consultations undertaken in October-November 2012.[15]

12 Data for each campus was provided for teachers and non-teachers at each campus, but the number of Indigenous staff was too small for release at campus level (for reasons of confidentiality). Teacher and non-teacher turnover was also provided, at campus level but again, not disaggregated. CYAAA also supplied data on the number of staff (Indigenous and non-Indigenous that they employ at each campus)

13 Additional data were also supplied by CYAAA to the evaluation. These are listed in Appendix 6.

14 The main questions that were used for the interviews and discussions can be found in Appendix 2.

15 Where interviewees had dual roles, such as a Teacher Aide who was also a parent and community member, or a community member who also had grandchildren at the school, the person has been categorised according to the main role they assumed during the interview or discussion.

Table 7 Consultations undertaken in Hope Vale, Coen and Aurukun, Oct-Nov 2012

Community and the number of people consulted	Position/Role and number of persons consulted
Hope Vale (25 people)	1 x Principal 6 x Teachers/Teacher Aides across Class, Club, Culture 5 x Other school staff 8 x Parents/carers 5 x Community members
Coen (21 people)	1 x Teaching principal 8 x Teachers[16] 1 x Teacher Aide/trainee teacher 1 x Other school staff 4 x Parents/carers 6 x Community members
Aurukun (20 people)	1 x Principal 12 x Teachers across Class, Club, Culture 2 x Teacher Aides/trainee teachers 1 x Other school staff 1 x Parents/carers 3 x Community members
CYAAA (7 people)	1 x CEO 1 x Project Manager 2 x Board Members 1 x Direct Instruction trainer 1 x Executive principal 1 x Ex CYAAA Principal

Interviews and discussions were generally around 40 minutes. Their duration depended on people's availability and what they wanted to say. Interviews with principals and school staff were mainly held onsite; interviews with parents, carers and community members were mainly off-site.

In Coen and Hope Vale, interview notes were taken at the time of the interview, typed up and, where possible, subsequently sent to interviewees for checking. The text, which was returned to ACER, was marked up with information so that the location and the type of respondent (teacher, principal, parent etc) was known. In Aurukun, interviews in 14 cases were audio-recorded (with the permission of interviewees), transcribed, and sent back to interviewees for checking. In two cases in Aurukun the interviews were not recorded and only notes were kept.

All interviewees in each community were assured that the interviews would remain confidential and that individual respondents would not be identified in any analysis or write-up.[17]

The report also uses information gathered by observation. For example, the evaluators were able to observe a range of different classes, including Direct Instruction, Language and a Special Needs class. In Aurukun an ACER researcher was invited to accompany the two Case Managers on their visits to homes around the community. On two afternoons at Aurukun, Club and Culture sessions were observed. In Coen the ACER researchers were able to hold a discussion with the local Aboriginal rangers.

While they were not included in the evaluation framework developed by Bycroft, some information was also used for the evaluation from the 2011 Teaching and Learning Audit of CYAAA. The teaching and learning audits provide objective insights into the practices that lead to school improvement in teaching and learning and therefore had potential to provide information about the CYAAA Initiative.

16 CYAAA reported that there are five teachers in Coen. However, the field notes from the evaluation staff record eight interviewees self identifying as 'teachers'.

17 Protocols around confidentiality were clearly explained to interviewees so they could speak freely and in confidence. This was important for school staff in particular, a number of whom specifically commented that their view was a personal one and potentially at odds with some aspects of the CYAAA Initiative. Because of the small number of schools and staff involved and the ease with which they could possibly be identified by contextual cues, the evaluation report cannot always specify whether an observation was made by a principal or a teacher.

Data analysis

The test data were analysed using standard statistical software (SPSS) and procedures. (The analysis procedures are described in detail in the next chapter).

The analyses of the qualitative data were undertaken by:

- grouping information into bundles related to a theme, where themes were set by the evaluation questions
- identifying the range of the responses (including establishing whether there was a consensus or not, among the responses)
- identifying the tone of these responses (affirmative or negative, strong or weak and so on)
- considering the content of the responses
- synthesizing these patterns into statements that fairly represented the views of the participants.

In processing the qualitative data, two of the ACER researchers who visited all three sites worked jointly. This was done by the lead researcher undertaking the analyses and reporting and then referring the draft report to her colleague to critically review. Where there were any disagreements about interpretation, the researchers retrieved the relevant data and re-analysed them together. There was very little review work of this kind required.

Methodology

The Monitoring and Evaluation Framework proposed that the methodology be governed by:

- the use of mixed methods ('bringing together a range of methods from the same (multi) or from different (mixed) research/evaluation paradigms')
- triangulation of perspective ('a combination of appropriate research perspectives and methods that are suitable for taking into account as many different aspects of a problem as possible')
- multiple and convergent methods ('the use of several overlapping methods (multiple methods) and focusing on the same general problem from several different perspectives (convergent methods)').

The evaluation used these methods.

These methods were proposed by Bycroft in anticipation of a range of problems that the evaluation would confront. Some of these were general to all evaluations and others were specific to the CYAAA Initiative. In practice, they coalesced into three main methodological issues for this evaluation:

- the short period of time for which the CYAAA Initiative has been operating
- the challenge of making a link between the Initiative and student outcomes (the problem of attribution)
- inevitable limitations in the data available to the evaluation.

The length of time

The CYAAA Initiative has been operating for only a short time. It was introduced into Aurukun and Coen in January 2010 and Hope Vale in January 2011.[18]

Various studies have identified the challenge of gathering empirical evidence of change when programs have operated over a short time. For example, Borman et al (2002), in their meta-analysis of comprehensive school reform and student achievement, concluded that it can take more than three years to implement an initiative that results in improved student outcomes. A three-year timeframe allows for yearly fluctuations in test data, such as a temporary decline in results as teachers adjust to the new strategy or an early increase in results because schools have implemented the easier parts of a strategy first. Fullan (2006) argues that significant change can be expected to take a minimum of two or three years. More recently, Pendergast et al (2011) identified three phases of reform: *initiation* (which involves planning and laying the foundations), *development* (which is generally focused

18 Components of the Initiative were also introduced at different times, for example, Culture did not commence in Aurukun and Coen until 2011. These and other differences can be seen in Table 1.

on teachers and the development of processes and systems) and *consolidation* (which is mainly about refinement). Pendergast et al suggest that the initiation phase takes one to two years, the development phase takes from two to five years and the consolidation phase is around five to 10 years. The authors note:

> *At best then, a fast-track trajectory takes eight years to achieve the stage of consolidation in the middle years, but this is not a typical reform pathway, with most taking longer, with 10-12 years typical. (p. 7)*

The three CYAAA schools in the evaluation appear to be still in the development phase, given that the Club and Culture programs and other curricula are still being developed. The evaluation of impact on student learning is taking place for Hope Vale only one year after the Initiative was introduced and two years after it was established in Aurukun and Coen. Thus the length of time that the program has been operating is short, and so there is a risk that there has been insufficient time for its full impact to have been made.

Attribution

The evaluation was conducted in a complex, multivariate setting where causal attribution was, as a consequence, challenging. The Framework, aware of this problem, noted that:

> *... the evaluation will also need to have a focus on the counterfactual – that is what would have happened in the absence of the reform.*

The most powerful counterfactual data planned to be available to the evaluation was the student test data (from CYAAA students and schools and matched, non-CYAAA students and schools). So the question of attribution hinged, to a large extent, on the quality of these data.

Data

There was a range of test information available to the evaluation, including NAPLAN, PAT-R and PAT-M, which are criterion referenced assessment tools that are externally graded, and DIBELS which is internally graded. The capacity of these data to support generalisations to the population of CYAAA students and schools was, however, compromised by a large amount of missing data, particularly for planned analyses using longitudinal data. (The levels of missing data are detailed in other sections of this report.) This loss of information was noted by Bycroft in the Monitoring and Evaluation Framework as a likely problem, and proved to be an issue for the evaluation, especially since it was these data where it had been planned that the strongest counterfactual information was to be sourced.[19]

Qualitative data collected from the site visits had a different set of issues. First, the site visits collected information at a point in time, so they could not directly observe change. Secondly, rather than being selected randomly, participants in the interviews and discussions were selected on the advice of CYAAA staff and local community members. This was necessary because sampling frames were not prepared in time for the site visits, and in some cases the use of this approach would have been culturally inappropriate (for example, in the communities). As a result, the qualitative analyses illustrate the range of responses given by those who were interviewed, but it is not clear to what extent those responses are representative of generally held views.

19 See the discussion around Figure 6 in the Framework.

Analysis plan

The findings are reported against the following three evaluation questions:

- What is the impact of the CYAAA Initiative on student learning in the pilot communities?
- To what extent are the CYAAA Initiative project outcomes being met?
- What other impacts of the CYAAA Initiative are evident?

Ahead of addressing these questions a description of the analysis plan that was used is given to explain the logic of the approach used.

The Evaluation Framework proposed 'two broad approaches' for the measurement of impact. These were:

- Conducting analyses at the school level. This was to be done, according to the Framework, by addressing the question '... have results improved at a significantly faster rate as students progress from one year to another in these schools across a broad range of metrics since the Academy was introduced?', which was also rephrased in the Framework as 'Has the rate and pace of learning accelerated since the Academy was introduced?' The Framework interprets this as focusing on 'performance indicators and benchmarks at the school level'.
- Conducting analyses at the individual level. This would involve 'unit record data to analyse student progress'. The Framework noted:

> *It is worth exploring the possibility of matching individual student results. For example, it may be possible to match individual students in Academy schools with students in other schools in Cape York. The match could be based on age, sex and initial student outcomes. The two groups could then be compared to see if the students in the Academy have experienced a faster improvement than students in other schools. Such a comparison would be more rigorous and convincing than an analysis of changes in performance indicators alone, at the whole school level.*

To address the first of the evaluation questions, these two approaches proposed in the Framework were interpreted as requiring analyses that draw contrasts:

- between CYAAA campuses or students and non-CYAAA campuses or students
- within CYAAA campuses or CYAAA students at two different time points (either as a cross-sectional or longitudinal analysis).

For the qualitative data the Framework proposed the conduct of:

- unstructured interviews/discussions with a sample drawn from community representatives school volunteers, parents and teachers from CYAAA communities
- facilitated focus group sessions with school principals, regional/community leaders, parents and teachers
- structured interviews with Club, Culture and departing teachers.

All these methods were used for the collection of the data used to contribute to answering each of the evaluation questions.

To address each of the three main evaluation questions, the analyses reported first are based upon the quantitative data (when available). The next analyses reported are based on an examination of the qualitative data. The similarities and differences between these two types of data are then, when needed, considered and the results of the analyses synthesised. This synthesis is then used to provide an answer to the evaluation question under consideration.

What is the impact of the CYAAA Initiative on student learning in the pilot communities?

This section considers the extent of the impact that the CYAAA Initiative has had on student learning. It consists of two main parts – the first reports on the quantitative data and the second reports on the qualitative data. The quantitative data are drawn from NAPLAN tests, PAT-R, PAT-M and DIBELS tests. Based on the role that NAPLAN plays in providing a standardised measure of literacy and numeracy skills and knowledge across Australia, the NAPLAN data are at the heart of the empirical analysis of the quantitative data for the evaluation.

Quantitative data

Table 8 provides a summary of the analyses that were planned based on (or implied by) the Framework. The CYAAA collects a large amount of internal data on student attainment (as evidenced in the Teaching & Learning Audit report described below.) However, the evaluation could not use these data to draw any conclusions about the impact of the CYAAA Initiative. The following table provides an overview of the data that was considered by ACER.[20]

Table 8 Summary of analyses planned and implemented to address the question: *What is the impact of the CYAAA Initiative on student learning in the pilot communities?*

Data	Comparisons between CYAAA students or campuses and non-CYAAA students or schools	Comparisons within CYAAA schools (cross sectional or longitudinal)
NAPLAN	1. Comparison with non CYAAA schools: was not undertaken due to too much missing data at the CYAAA campuses, school level (see page 35) Matched student comparison: the group of students for whom data was available was matched at student-level only (each CYAAA student was paired with a similar non-CYAAA student). After matching, analysis was not undertaken: due to too much missing data (see page 35 and following).	2. Too much missing data. Missing value analysis and some cross-sectional and longitudinal descriptive statistics are provided in Appendix 3.[12]
Progressive Achievement Tests in Reading and Mathematics (PAT-R and PAT-M)	3. No data available from comparison schools.	4. Too much missing data. Missing value analysis and some cross-sectional descriptive statistics are given in Appendix 4.
Dynamic Indicators of Basic Early Literacy Skills (DIBELS)	5. No data available from comparison schools.	6. Too much missing data. Missing value analysis and some cross-sectional descriptive statistics are given in Appendix 5.
The Neale Analysis of Reading Ability	7. No data available from comparison schools.	8. Too much missing data, and of limited value once other data sources were identified as having large amounts of missing data.

The Framework specified another set of analyses using NAPLAN data – the proportion of students reaching or exceeding national minimum standards in numeracy and literacy. These analyses are reported below, in a separate section of the report (see

20 The numbers appearing in Table 8 can be used to cross-reference to the headings used for the set of analyses using the quantitative data that follow.

21 Consideration of the proportions of students at or above the National Minimum Standards (and of levels of missing data) are presented in Table 15 and Table 16 and discussed on pages 53 and following. These discussions fall outside of this section of the report because the Bycroft Framework for the evaluation defined and located attainment of National Minimum Standards in the section dealing with 'project outcomes'.

pages 53 and following). Their location reflects the structure of the Framework. For these analyses, there were some positive findings made about student learning.

Table 9 provides summary information about the extent of missing data on any single test occasion. Figures shown in bold red font indicate that 20 per cent or more of the data were missing. The analyses of the test data usually involves considering the progress of students between two test occasions. The sample of students with test data available for more than one test occasion will fall below the levels shown in this table. So, for example, between 50 and 60 per cent of the 2010 Year 3 students and almost 70 per cent of the 2010 Year 5 students in CYAAA schools could not be included in the NAPLAN matched student comparison due to missing values in either one or both of the test occasions being compared. More detailed information is provided in Appendices 1, 3, 4 and 5.

Table 9 Percentage of cases missing on each single test occasion

		2009	2010		2011			2012		
	Group	Mid	End		Begin	Mid	End	Begin	Mid	End
DIBELS										
PSF	All		**37%**	**55%**	**23%**	**21%**	**21%**	**24%**	**23%**	
Accuracy	All		**49%**	**41%**	18%	17%	19%	**36%**	11%	
Words correct	All		**48%**	**41%**	18%	17%	19%	**36%**	11%	
Daze	All					20%	39%	16%	12%	
PAT										
Comprehension	All				**28%**		**22%**	**44%**		19%
Mathematics	All				**24%**		**27%**	**33%**		**22%**
I can do Maths	All				**74%**		**49%**	**46%**		16%
Spelling	All				**23%**		**33%**	**51%**		**22%**
Vocabulary	All				**30%**		**31%**	**31%**		19%
NAPLAN										
G&P	Year 3	10%	18%			10%			26%	
G&P	Year 5	9%	**58%**			10%			12%	
G&P	Year 7	19%	15%			14%			12%	
Numeracy	Year 3	**21%**	18%			**20%**			**23%**	
Numeracy	Year 5	**21%**	**58%**			**23%**			12%	
Numeracy	Year 7	13%	11%			16%			5%	
Reading	Year 3	10%	**25%**			16%			**29%**	
Reading	Year 5	19%	**60%**			10%			**27%**	
Reading	Year 7	15%	**21%**			14%			5%	
Reading	Year 3	10%	**18%**			10%			**26%**	
Reading	Year 5	9%	**58%**			10%			12%	
Reading	Year 7	19%	15%			14%			12%	

Quantitative data – Analysis 1: Comparison between CYAAA and non-CYAAA schools and students in growth in NAPLAN scores

There were two sets of analyses of NAPLAN scores planned – comparisons based at the school level and those at the individual student level.

School level analysis

As specified by the evaluation Framework, the school level analysis aimed to compare CYAAA campuses with like-schools. However, it was found that because of the large amount of missing data, such a matching was not possible and so these analyses did not go ahead. Appendix 3 describes the analyses related to the missing data.

Individual student level analysis – the matched student comparison

For the second set of analyses, individual students from CYAAA campuses were matched to students from other schools. Appendix 7 describes how this was done.

For each student a growth score was computed by taking the raw difference between the NAPLAN score in 2010 (before implementation of the program) and in 2012 (after implementation of the program). It was planned to compare the median of these growth scores of the two groups to test if there were statistically significant differences. However, there were no NAPLAN data of suitable completeness to allow a comparison to be made. There were between 50 and 60 per cent of 2010 Year 3 students

and almost 70 per cent of the 2010 Year 5 students in CYAAA schools not included in the matched student comparison due to missing values in the NAPLAN data for at least one of the two occasions.[22] The data used for these analyses were therefore not representative of the full cohorts and so could not be used.

Analysis 1 conclusions

There were no NAPLAN data of suitable completeness to allow a comparison to be made between CYAAA and other matched schools, nor between matched students.

Quantitative data – Analysis 2: Comparison of student growth in NAPLAN scores across time within CYAAA campuses

There was too much missing data to undertake either cross-sectional or longitudinal data analyses of student growth in NAPLAN scores within CYAAA schools (see Appendix 3).

Quantitative data – Analysis 3: Comparison between CYAAA and non-CYAAA schools and students in growth in PAT-R and PAT-M scores

As there were no PAT data from non-CYAAA schools available, comparisons between CYAAA and non CYAAA schools and students could not be made.

Quantitative data – Analysis 4: Comparison of student growth in PAT-R and PAT-M scores across time within CYAAA campuses

PAT-R and PAT-M test results of 2011 and 2012 were administered by CYAAA staff and scored by an independent research centre (ACER).

The PAT data had high levels of missing values. Of the total CYAAA population, the comprehension subtest of PAT-R had between 19 and 44 per cent of data classified as a non-response, reading had between 22 and 51 per cent and vocabulary between 19 and 33 per cent. The subtests of the PAT-M (Mathematics and I can do Maths) had non-response rates between 16 and 74 per cent.

Since these levels of missing data could cause a bias in the available test scores, a missing value analysis was conducted to examine if there were systematic differences between respondents and non-respondents. Differences between respondents and non-respondents in the percentage of boys and in attendance rates were found. The non-respondents often consisted of more boys (about 60 per cent were boys). The attendance rates of the non-respondents were lower than of the respondents. The difference was largest at the end of each assessment year. The non-respondents attended school half as often as the respondents for some subtests.

This led ACER to conclude that the available data was not representative of the full CYAAA population and so not suited to the evaluation. The results of the missing value analysis of the PAT data and some cross-sectional comparisons are included as Appendix 4.

Analysis 4 conclusions

There were too many data missing from the PAT test scores to allow defensible inferences or conclusions to be drawn from them.

Quantitative data – Analysis 5: Comparison between CYAAA and non CYAAA schools and students in growth in DIBELS scores

As there were no DIBELS data from non-CYAAA schools available, comparisons between CYAAA and non-CYAAA schools and students in growth could not be made.

22 See Appendix 1 for a discussion of missing data. The evaluation used the student participation standard of 80 per cent derived from the OECD's Project for International Student Assessment (PISA). This is also discussed in Appendix 1.

Quantitative data – Analysis 6: Comparison of student growth in DIBELS scores across time within CYAAA campuses

DIBELS test results from 2010/2011 to 2012 were collected and scored by CYAAA staff. They were reviewed for analyses but were found to have too many missing values to be useable.

Generally, the group of non-respondents had a higher proportion of boys and students with lower attendance rates than did the respondents. (This is a pattern similar to that seen in the PAT results.) This bias in the data due to non-response would result in findings that do not accurately reflect the general effectiveness of the CYAAA Initiative, especially because sex of the students and attendance rates are known to relate to student performance. In addition, fluctuations in the extent of the bias over time make cross-sectional comparisons unsound. Take, for example, the DIBELS data of the subtest called Accuracy in the middle of 2010 and the middle of 2012. In 2010, 48 per cent of the students with scores (the respondents) on this subtest were boys and in 2012, 54 per cent. If girls generally perform better on this test and if there was no change in average performance of the full population, between 2010 and 2012, the data would show a decrease in performance only because the percentage of boys increased. Similarly, the median attendance rates of respondents to another subtest of the DIBELS (PSF) was 86 in the beginning of 2011 (58 for the non-respondents) and 74 at the beginning of 2012 (79 for the non-respondents). While the attendance rates of all students may not have changed within this time interval, the attendance rates of the respondents dropped. This would have a negative effect on changes in test scores between these two time points.

It is possible, under certain conditions, to take these changes in composition of (large enough) samples into account when comparing performance cross-sectionally over time (by applying weights to the data or by controlling via the use of a covariate). However, since the attendance rate is also an outcome variable and is expected to increase over time as part of the CYAAA Initiative, controlling for it by assuming it is constant is not desirable. For similar reasons, the sample should not be divided into levels based upon attendance rates. Setting aside the fact that non-response is higher among the low attenders than among the high attenders causing differences in bias between the two (or more) groups, such an approach confounds the two outcome variables. An increase in performance of high attenders could be caused by their higher levels of attendance, which is expected to increase performance in any school, or by a change in educational program (in this case, the CYAAA Initiative).

Given the bias in these data caused by non-response and given that neither the test administration nor the scoring of the student responses was controlled nor supervised by an independent testing organisation, only some descriptive statistics were computed, without any statistical testing. The detailed results of the missing value analysis and the descriptive statistics are included as Appendix 5. (Also in this appendix the methodology applied to these data by other analysts is reviewed.)

Analysis 6 conclusions

There were too many data missing from the DIBELS scores to support defensible analyses.

Quantitative data – Analyses 7 and 8: Neale Analysis of Reading Ability

There were no data available from other schools so between school and between CYAAA students and matched students comparisons could not be undertaken (Analysis 7). For the within school analyses, there was too much missing data. The Neale data was judged to be of limited value once other data sources were identified as having large amounts of missing data because the Neale was seen as only a complement to these other sources.

Qualitative data

This section of the report examines the qualitative data related to the impact of the CYAAA Initiative on student learning in the pilot communities. It first considers the general perceptions of school staff and others, and then considers each of the three domains in more detail, namely:

- Class domain: Impact on literacy learning
- Class domain: Impact on numeracy learning
- Class domain: Impact on language learning
- Club and Culture domains: Impact on student learning
- Parent and community members' perceptions of student learning.

General Perceptions

Perceptions of the nature and extent of the impact of the CYAAA Initiative on student learning in the three communities varied among all informants within and across communities. School staff[23] had more consistent and positive perceptions of impact while the perceptions of parents and community members were more varied. With very few exceptions all the school staff interviewed maintained that they had seen the children making progress.

In general, the CYAAA Initiative was perceived to have had more of an impact on literacy than on numeracy. (CYAAA advised that these perceptions are based upon the use of testing – DIBELS in particular – and other internal placement data.[24]) Perceptions of other areas of student learning – such as science, history, music, sport, language – varied considerably, with most interviewees saying that Club and Culture had not been going long enough to have a noticeable impact on student learning.

Across the three campuses there was consensus among school staff that students are improving in their literacy and numeracy. A typical response came from one teacher who suggested that:

> *There is not a kid in this school who isn't getting above where they were earlier on – in terms of literacy and numeracy.*

However, a small percentage of children at either end of the achievement continuum were perceived by some teachers to be learning less successfully than their 'middle range' peers. Reasons given by the teachers were that students needed to be extended further or, more commonly, that they had particular issues or needs which made it difficult for them to settle in class or progress through the Direct Instruction ability groups.[25] These students were reported to be often in the Special Education class.[26]

Class domain: Impact on literacy learning

There was consensus among school staff across the three school campuses that, under the CYAAA Initiative, students' literacy skills had improved.

This consensus is exemplified in the following quote from one staff member who had been in one of the schools prior to the introduction of the CYAAA Initiative. The staff member illustrates how student progress is seen by many teachers across the three schools:

> *Personally, having seen what it was like before and to see it now with the new structure, it blows me away. To see the kids reading, they start younger, and to see the Year 1s and 2s reading, it is wonderful. The older kids could not do that. To get them this far is amazing.*

For staff members who had come to the schools since the CYAAA Initiative, student progress in literacy was evident even after one or two years. One teacher reported that students had been reading one page a day 'and now they are reading chapters a day so the speed has picked up. The data show that they can read 100 words in under a minute.' Another teacher who came to the school at the same time as the Initiative was introduced reported a marked transformation in her class since the beginning of the Initiative.

In identifying the changes that had occurred in reading ability most teachers did not refer to the detailed CYAAA assessments of each child's progress but on their own observations in the classroom. A typical response came from one teacher who said:

> *… seeing how [students] can do things they couldn't do before. Opening up readers and being able to read … Listening to them read when previously the students were non readers … To hear them read and to know where that child has come from. They can read and they can do things they couldn't do before.*

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23 For the purposes of the evaluation 'school staff' is here defined as principals, classroom teachers and Teacher Aides.

24 Internal placement data were not used for the evaluation because the evaluation Framework did not specify their use.

25 CYAAA noted that the majority of teachers in the schools are in their first or second year of teaching and may not be best placed to make assessments of children at the extremes.

26 The CYAAA advised that in the DETE there is a verification process required to be taken to formally identify students that are either requiring special education or have diagnosed learning difficulties. In CYAAA schools, students with diagnosed special education needs are placed in special education classes – they are not just students who cannot settle in normal classes.

Other evidence of progress was given, such as students being able to read the labels on products in the community store, reading what teachers were writing on the board as the teacher wrote, and in one school borrowing from the library. In one community, school staff spoke of parents stopping some teachers in the street to talk about their children's reading. One staff member said:

The children are excited and are giving feedback to their parents and the parents are telling us this.

The most commonly expressed observation about reading progress was that it is the younger children who are progressing more rapidly. A small number of teachers commented on the difference between being able to recognise words on the page and comprehend their meaning. It was suggested by these teachers that while students could read the words they did not always understand their meaning. This would seem to be an issue; however, other teachers did not see this as a problem either because they thought that students were well able to transfer words from one context to another or because they expected comprehension to follow as part of the next developmental step (after the mastery of words).

Parents' views on their children's literacy level and rate of learning to read varied. There was insufficient evidence available to the evaluation to link this variation to different sites, or to other possible factors.

Class domain: Impact on numeracy learning

The majority of school staff found progress to be less evident for numeracy than for literacy. Some explanations for the CYAAA Initiative having less impact on numeracy learning were reported to be that:

- teachers spend more time on language and reading
- some teachers may not be as comfortable teaching mathematics as they are teaching literacy
- some students prefer reading to mathematics.

Class domain: Impact on language learning

Comments about the impact of the Class domain language program on student learning were mixed. Some teachers appeared confused about the program and its role in teaching children to speak English. Others, however, pointed to the role played by the formal language program in teaching English both explicitly (in a formal session of oral language scripts delivered to each group each day) and through full immersion. Typically, teachers reported that some children struggle with the content.

Club and Culture domains: Impact on student learning

Club is the domain of physical activity and the Arts. Culture is the domain of Indigenous culture and language.

A small number of teachers and parents or carers reported reservations about having so much of the Club and Culture programs delivered in the non-compulsory[27] part of the school day, which means that some students potentially could go through their schooling missing out on the topics taught through these programs. However, the response from most teachers was that this was unlikely as attendance at the after-school Club and Culture sessions is very high. For example, in one school it was reported to be around 95 per cent to 100 per cent of the school attendance each day. The data supplied by CYAAA on attendance at Club and Culture (see Table 4, page 24) indicates one school in 2012 (Aurukun) achieved a 94 per cent attendance rate. Other schools, and Aurukun in previous (calendar) years have lower participation rates, some considerably lower.

Under the domain separation model for the school, the Club domain and especially the Culture domain are the spaces in which local languages are promoted and fostered by being the languages of instruction. The Culture domain is also the place where an Indigenous culture and language program is intended to operate. Feedback from school staff suggest this is still being developed, (including involving local people in the design and delivery of the programs). It is CYAAA's expectation that it will be continuously developed and improved.

There were differing views about the extent to which there has been an impact on student learning. Some teachers suggested students would benefit from having more exposure to programs such as music, art and sport. Parents generally spoke positively about Club and Culture and were able to describe some of what their children had learnt. For example, one parent described how older members of the community had come to her children's school and made bowls for the girls and spears for the boys.

27 CYAAA indicated that while it is technically not compulsory attendance is strongly encouraged, and once parents have enrolled CYAAA expects students to attend every day.

The children took them home after show and tell. Other community members spoke positively about going into the school and making spear sticks and dilly bags with students so they could learn what these are and how to make them. Some of the rangers took their art work in and explained it. Students have made head bands and arm bands and students in Grades 4-7 have learnt cultural activities.

Several Indigenous community members, some of whom were involved with the school as carers or as teachers of language or culture, commented on the importance of children learning about their culture. One spoke of attending the school camp, which was on her country:

> *The camp was good because the kids learn about their own culture and other cultures. They learn about country and how important it is for them. They know where they come from, they speak the language ... Children learned about respect for the land – their own and others.*

Several parents and carers mentioned that their children are learning to play musical instruments and saw this as a positive impact of the CYAAA Initiative. One of the teachers, who has taken a small group of students for band practice, could see an improvement in their musical ability in a relatively short time.

The end of year performance was cited by several staff members on different school campuses as an example of students showing increased self-esteem and confidence. Some parents and carers also commented that their children have benefited from winning awards and being encouraged. One said, 'they are made to feel important and part of the school'.

There is evidence that the Club and Culture programs provide a wide array of learning and cultural experiences for the students of CYAAA, and that there is a high rate of participation. There is some evidence of positive impacts on student learning through Club and Culture. However, the evidence also suggests that, in general, it is too early to detect their full impact.

Parent and community members' perceptions of student learning

Community members, including parents and carers, expressed varying views on the impact of the CYAAA Initiative on student learning depending on their own experiences of the school, their place or role in the community, their familiarity with the school and community prior to the CYAAA Initiative, and their relationship with the CYAAA. In some cases there was also the added difficulty of separating the impact of the CYAAA Initiative from the wider Welfare Reform. For example, in one community an interviewee who had been there for over six years referred to the work of the FRC and Alcohol Management Plan[28] in reducing incidents of violence saying:

> *… and all this means is that it is far better for the kids and their schooling. So with far fewer incidents, instead of being awake all night and asleep in class they get a good night's sleep and can work properly at school the next day.*

Parents and carers sometimes drew on previous school experience to show how their children were either doing better or worse under the CYAAA Initiative. For example, one parent reported that her children were learning more now than when they attended their previous school. One of her children 'couldn't read at all … didn't work hard and wasn't pushed at her [old] school'. However in the CYAAA school this child 'has been challenged … and is doing well'. Similarly, another of her children, who had been good at sport and not doing well academically, was now no longer behind in reading. There were examples of parents and carers having moved their children into the CYAAA schools in the belief that the learning environment would be better.

In contrast, for two other parents, the experience was less positive with their child's learning being affected adversely by bullying from older children in the same ability group.

Synthesis

The quantitative data (NAPLAN, PAT-R, DIBELS) do not enable a conclusion to be drawn about whether CYAAA students had a faster or slower growth rate in literacy and numeracy than other, matched students. This conclusion is not claiming, to use

28 CYAAA argues that since the Alcohol Management Plan commenced in 2003 its effect on learning would have predated the implementation of the Initiative by CYAAA. This is a valid argument but it fails to take account of the possibility that there is an interaction between the Plan and the Initiative, each reinforcing the other's impact. Under these conditions, the Plan may be making an increasing contribution to student learning as a direct result of the Initiative.

the language of experimental design, a null result in the sense that the data have failed to show a statistically significant difference between groups. This conclusion is saying that the data do not allow a conclusion to be drawn, one way or another.

The qualitative data reveal widespread agreement among school staff and some parents that students are improving in their literacy as a result of the CYAAA Initiative. This improvement is moving students towards levels appropriate for their age. This is particularly the case for the youngest children.

Conclusion

The answers to the question, *What is the impact of the CYAAA Initiative on student learning in the pilot communities?* are:

- It is not possible to conclude from the available test data whether or not the CYAAA Initiative has had an impact on the rate of student learning compared with other students. This is because there is too much missing information to draw a conclusion, one way or the other.[29]
- Typically, the school staff describe improvements in student learning and attribute these improvements to the CYAAA Initiative.
- School staff report that the rate of improvement has been greater in literacy than in numeracy.
- The Club and Culture programs provide a wide array of learning and cultural experiences for the students of CYAAA and that there is a high rate of participation. There was some evidence that already Club and Culture has had a positive impact on student learning. These programs are still in early development so it is too soon to establish if Club or Culture (or both) are having an impact on student learning.

Because the evaluation was unable to use the test data to examine rates of growth in literacy and numeracy, it became difficult to empirically ascribe a causal connection between the Initiative and student learning outcomes in these domains. However, importantly, school and community members provided a wide range of anecdotal evidence that suggests there is such a connection and the Initiative is indeed having a positive impact on student outcomes.

29 NAPLAN data did permit some other findings that suggest there were some improvements in one facet of literacy. These are discussed below on pages 53 and following, and relate to the proportion of students reaching or exceeding national minimum standards.

To what extent are the CYAAA Initiative project outcomes being met?

'Project outcomes' refers to the following objectives, which have been adapted from the CYAAA Monitoring and Evaluation Framework:

- CYAAA has effective working partnerships with community leaders and cross-sectoral agencies
- Community members attending CYAAA events
- Families taking responsibility for their children's education
- Children are fully participating in Club and Culture and progressing to cultural/sporting achievement
- Children's self-confidence and cross-cultural skills are improving through Club and Culture programs
- School attendance improves over time or is maintained at or above mainstream standards
- Children's behaviour problems in CYAAA schools are reduced
- An increased number of children are reaching or exceeding national minimum standards in numeracy and literacy
- CYAAA teachers have high expectations of the students and pride in CYAAA schools.

This section of the report is structured around each of these objectives.

CYAAA has effective working partnerships with community leaders and cross-sectoral agencies

There was conflicting evidence of the effectiveness of working partnerships with community leaders and cross-sectoral agencies. For example, the CYAAA report several instances of working relationships, including:

- an Indigenous leader from Coen on the CYAAA Board
- an elder and local Family Responsibilities Commissioner is employed as a CYAAA case manager in Hope Vale
- a former mayor of Aurukun on the CYAAA Board until 2012
- regular meetings with the Family Responsibility Commissioners at all sites.

The evaluation team found that in one community there was evidence of good working relationships with two agencies. One of these agencies reported that the school had changed the way in which it worked with local organisations since the CYAAA Initiative was introduced. This was consistent with the views of one of the agency workers who reported that while it was initially difficult to enter the school 'because they've got their structured times they don't want [to be] interfered with' the agency has now been accommodated by the school, which is reported by CYAAA, in a way that protects core learning time.

However, during the interviews conducted by ACER, opinions about the extent to which the CYAAA has effective working partnership with community leaders and cross-sectoral agencies in two of the other communities varied,[30] depending on who was being interviewed. Some parents and community members were critical of the CYAAA Initiative, particularly its inception and how this was handled, and reported that the CYAAA did not have an effective working partnership with community leaders. The level of criticism appeared to be related to the extent to which community members felt they had had a say in the Initiative and, more broadly, the Cape York Welfare Reform itself.

30 CYAAA argue that effective working partnerships with community leaders and cross-sectoral agencies vary and need to be understood in the context of CYAAA being part of the Cape York Welfare Reform and associated cross agency relationships. They also cite contractual arrangements with four local Indigenous ranger organisations Kalan Enterprises, Yintjingga Aboriginal Corporation, Yuku - Baja - Muliku Rangers (Archer Point Rangers) and Aak Puul Ngantam (APN Rangers)) for running culture camps as examples of effective working partnerships.

In summary, the evaluation found evidence that significant progress has been made in one community in establishing effective working partnerships with community leaders and cross-sectoral agencies. However, there is conflicting evidence of effective working partnerships in the other two communities.

Community members are attending CYAAA events

CYAAA provided the following information about the number of parents and other community members attending Club and Culture community events at each campus in 2011 and 2012 (see Table 10[31]).

Table 10 Number of parents and community members attending Club and Culture community events at each campus in 2011 and 2012

Year	Term	Event	Aurukun	Hope Vale	Coen
2011	2	Athletics Carnival	25	30	30
	3	Art Exhibition/ AFL Crusader Cup	60	70	25
	4	End of year event	810	460	200
2012	1	Tennis event and Epic Timeline showcase	53	15	37
	2	Athletics carnival and Art exhibition	N/A	N/A	80
	3	Art Exhibition and Annotated Map Showcase	43	70	3
	4	Swimming Carnival and end of year performance	750	320	150

**N/A – No Club or Culture events held that term or program not yet in operation*

With a population of around 1200 persons in the wider Aurukun community,[32] about two-thirds of this community attended the end of year event in 2011.[33] This is a large proportion of the community. (The number and hence proportion of the community attending the event declined slightly in 2012.) Hope Vale has a population of around 1500 people,[34] so about a third of the community attended the end of year event in 2011. This declined to around 20 per cent in 2012. Coen has a population of around 250,[35] so about 80 per cent of the community attended the end of year event in 2011, which reduced somewhat to around 60 per cent in 2012. These data suggest that there is a high level of interest in the community related to the end of year events held at each of these campuses. At the other events, attendance is much lower and probably reflects a narrower scope for these activities.

Table 11 also shows data supplied by CYAAA to the evaluation.[36] This table shows the number of parents and community members attending community events each term where these events were not part of the Club or Culture programs. This included parent tours, case conferencing meetings with families, Parents and Citizens meetings, inter-agency meetings and so on.

Table 11 Number of parents and community members attending community events each term in 2012

Number of parents attending community engagement events*				
	Term 1 2012	Term 2 2012	Term 3 2012	Term 4 2012
Aurukun	471	316	303	313
Coen	17	0	10	22
Hope Vale	191	181	187	137

** These are in addition to Club and Culture events*

These data from CYAAA indicate that school events, and meetings related to children's education are well attended by parents, carers and other members of the community.

31 CYAAA advised that there is no double counting of persons at a single event in this table. However, they also noted that where there were two events in one term, the same parents may have been present at both events. CYAAA advised that a count would have been taken at one point during the event (rather than on entry into the event). CYAAA also advised that these counts were made by the Education Queensland Head of Department in each campus and then sent in a report to the CYAAA Cairns Office. CYAAA noted that some of these figures may be estimates (particularly the larger ones at the end of year events).

32 See http://aurukun.qld.gov.au/shire-profile/our-shire/population/ viewed May 2013

33 This and related calculations are based on the assumption that attendees all came from the local community.

34 See http://www.hopevale.qld.gov.au/ Viewed May 2013

35 See http://en.wikipedia.org/wiki/Coen,_Queensland Viewed May 2013

36 See also Footnote 31 for information about this table.

These data from CYAAA, however contrasts with those taken from the interviews by ACER researchers as part of the evaluation. The interview data suggest that having community members attending CYAAA events is more often an aspiration than a reality, with the one exception being the end of year events (which the interviews confirmed, attract large numbers). Two comments illustrate the flavour of many of these interviews. One parent said:

> *The FRC needs to step in and tell parents they need to be supporting the school. It is hard to get parents to be involved. There are some meetings parents can go to but it is usually the same people who go.*

A teacher's aide from another campus observed:

> *What is happening out there is that they don't know about the kids. They aren't aware of what is happening. The majority of parents don't know that their kids are learning. Parents are lacking, they should know about the kids in school. They need to take the time to see the kids.*

In trying to reconcile these differences, ACER takes the view that, because the interviews were not conducted with a random, representative sample of community members, the counts taken at the events are stronger data. This leads to the conclusion that many parents and carers are attending CYAAA events.

Families take responsibility for their children's education

One indicator of families taking responsibility for their child's education is the financial contributions they make. There was general agreement among school staff that many parents are contributing financially to their children's educational future. Particularly important has been the CYWR and with this, the Student Education Trust (SET).[37] For example, one interviewee suggested that the account has impacted positively saying:

> *... [there] has been a big change. Any relative can put their hand up for money to go into this account and this is a big advantage. Before the trust accounts, it was hard for parents to pay for the extra bits.*

Data were supplied by CYAAA concerning the number of families engaged with the SET programs, and the amounts held within each account.[38] Table 12 shows the summary statistics.

Table 12 Number of SET accounts and descriptive statistics at each community, 2012

	N	Mean	Std. Deviation
Aurukun	241	$1421.93	$1816
Coen	152	$1719.57	$1694
Hope Vale	176	$676.36	$972

37 CYAAA advised that the SET 'enables parents to financially support their child's education and development from 'birth to graduation'.' It works by having parents and families manage funds for their child's educational needs. Donors, who may be parents, family members or others, deposit a fortnightly pre-calculated amount based on the age of the child into the child's SET account. The money is no longer the contributor's money and sits within a Trust for the child to be used for education expenses (such as computer, sports clinic, excursion, camps, books, cost of school fees). According to FaHCSIA the SET is:

> *... a money management service that assists parents to support their child's education and development from birth to graduation. Through responsible income management, parents make regular contributions to their child's trust account which they are then able to use to meet education-related expenses.*
>
> *Student Education Trusts help build parental responsibility by setting expectations of parents and schools to increase parental value of, and commitment to, education. The SETs service also works with education and child development service providers to help families identify appropriate expectations of a child's needs, as well as working with education suppliers to improve family access to high quality educational goods and services.*
>
> *The Family Income Management (FIM) project promotes Student Education Trusts and signs up families in the Welfare Reform communities.*

Taken from: http://www.fahcsia.gov.au/our-responsibilities/families-and-children/publications-articles/cape-york-welfare-reform-fact-sheets/student-education-trusts Viewed 14 March 2013.

38 CYAAA indicated to the evaluation that the SET accounts are 'a major form of taking responsibility for a child's education and does not exist in other remote Indigenous / low SES communities'.

This suggests that a large majority of families are supporting their children's education financially in these communities. (The official enrolments for 2012 were, 196 at Aurukun, 51 at Coen and 122 at Hope Vale.) ACER notes the large Standard Deviation in Table 12, which suggests the level of support varies widely between families.

CYAAA operates Food Clubs in Aurukun and Hope Vale (Coen parents did not want this service). At Aurukun the Food Club provides breakfast, first lunch, second lunch (snack), and an afternoon snack and at Hope Vale, it provides breakfast when requested, first lunch, second lunch (snack), and an afternoon snack.

CYAAA advised that the School Readiness program was developed as part of Cape York Welfare Reform Agenda. It was trialled in 2006. During the trial it was found that a third of students missed breakfast or lunch or both on at least one occasion during a set period. When the CYAAA took over the operation of the schools, it established the Food Clubs. (Previously, parents were not contributing to the cost of supplying food to their children even though schools did provide children with meals.) Parental involvement in the program is optional. CYAAA stated that:

> *The Food Club was setup to provide a healthy, well balanced food solution for students.*

CYAAA argues that the payment of five dollars per day (paid by the parent or carer[39] ensures the parents are involved in contributing to their children's needs.

Table 13 shows the number and proportion of students enrolled in Food Clubs at Aurukun and Hope Vale in 2013.

Table 13 Number and percentage of students enrolled in Food Clubs at Aurukun and Hope Vale in March 2013

	Aurukun	Hope Vale
Students enrolled in school P-7	202	121
Students enrolled in Food Club P-7	188	118
% students at school in Food Club	93%	97%

ACER asked CYAAA to comment upon the possibility that the existence of the Food clubs implied that students might not otherwise be properly fed (with a possible further implication that parents were not taking responsibility for their children's education). The CYAAA indicated that:

> *In Aurukun and Hope Vale the community chose to have the Food Clubs as part of the CYAAA model. The Coen community opted not to have the program as they wanted to continue to supply lunches themselves to their children (which the majority of parents do). There are some instances of children being without food in Coen, these are followed up by the travelling case manager and/or school staff....*
>
> *The Food Clubs are a way for all children to have the benefit of regular, healthy meals to assist the learning process. Since the commencement of the Food Club program there has been an improvement in the students overall health particularly in Aurukun where the Food Club has been in operation the longest.*

This response indicates that the Food clubs are serving a positive purpose and are viewed in a positive light by members of the community. There appear to be no negative inferences drawn by the community or others about the Food clubs.

There was less agreement about families taking responsibility for other aspects of their children's education and this varied across the communities. The Student Case Management Framework is, as planned, still evolving.

Improvements appear to be occurring, for example, the health clinic reported a decrease in the amount of trauma seen at the clinic in children and smaller numbers of children presenting with infestations of head lice and scabies. On the other hand, some parents suggested the CYAAA Initiative has not helped as much with the behaviour of individual students as they would have liked and that improvements in behaviour are more due to parents than to teachers. ACER has no evidence of the extent to which this parental concern is attributable to the CYAAA Initiative.

In one community teachers reported that parents and carers were now showing an interest in their child's educational progress, including stopping teachers in the street to discuss their child's work, visiting the school to sit in on classes and see their children read, and being seen going round the store listening as their child reads the labels on boxes and packets and tins of food. Other interviewees expressed a desire to see more parents come into the school to see what their children were achieving.

39 Food Club payments are in addition to contributions made for SETs.

Overall, families appear to be taking more responsibility for their children's education in terms of financial contributions to the Student Education Trust and the Food clubs, as well as in other respects, although there were insufficient data to provide detail about the extent to which this has occurred.[40]

Children are fully participating in Club and Culture and progressing to cultural/sporting achievement

Table 4 and Table 5 (see page 24) show that, as of 2012, over 90 per cent of students were enrolled in Club and Culture at Aurukun and Coen, and at Hope Vale, in its start up year, there were 60 per cent of students enrolled. Of those enrolled, average attendance varied from 60 per cent at Hope Vale, to 74 per cent at Coen and 94 per cent at Aurukun. On average, there were ten hours of Club and Culture delivered per week at Aurukun and Hope Vale in 2012, and eight and half hours at Coen. These data suggest that a large proportion of children are participating in Club and in Culture at each of the three campuses.

These data do not, however, provide evidence about the extent to which the students are progressing in their cultural and sporting achievements.

Children's self-confidence and cross-cultural skills are improving through Club and Culture programs

There were some data, namely the increased confidence of students around the end of year performances, that linked the Club or Culture programs to improved self-confidence and cross-cultural skills. Several interviewees described camping activities and some cultural activities delivered at the schools. One staff member taking Culture reported that the program has been flexible enough to allow the development of criteria so that what is done has a connection to mainstream school. For example, for an art activity students were able to paint a canvas and were encouraged to think about their work, reflect on what they were doing, how to use colours and why they would choose those colours. This, it was argued, helped them to think and reflect on their activities.

The culture rich tasks (see page 22) – epic timeline, art exhibition, annotate map and community performance – are reported in CYAAA documents to have engendered self-confidence and developed some cultural learning. Some parents also indicated that their children had been made to feel more important because they had won awards.

School attendance improves over time or is maintained at or above mainstream standards

Analysis of attendance data obtained from DETE indicated that the student attendance rates decreased between 2010 and 2012 for Coen and Hope Vale and remained more or less stable for Aurukun.[41] For all schools combined, there was a decrease in attendance.

The student-level attendance rate is expressed as a percentage and is based on Semester 1 each year. It is generated by dividing the total of full-days and part-days that a student attended by the total of all possible days for a student to attend, taking into account his or her enrolment date.

Since attendance data is not normally distributed (negatively skewed), the non-parametric Mann-Whitney test was used to compare mean ranks between years. Table 14 presents the *median* attendance rates instead of the *mean* rank, because they are easier to interpret. This comparison analysis was replicated between 2009 and 2012 in case the 2010 attendance rates were

40 The Framework identified the 'Kelman model' as a possible indicator to measure levels of family responsibility. The Kelman model is seen in the Framework as useful in a school attendance context. It provides a four-point scale of progression towards parents achieving and maintaining greater responsibility for education. The four points on the scale are: (i) no responsibility, (ii) low responsibility, (iii) medium responsibility and (iv) high responsibility. There were insufficient data to be used in the evaluation. Only data from Aurukun were supplied.

41 CYAAA argued that attendance figures could be influenced by a change of roll marking. They indicated that in 2010 they 'introduced strict rollmarking according to FRC guidelines'.

for some reason not representative of other years before the start of the Initiative. Comparing the 2012 attendance rates with the 2009 attendance rates showed similar results. The drop in attendance rate between 2010 and 2012 was observed for Year 2 to Year 4 and between 2009 and 2012 for Year 1 and Year 2. At the school-level (including only Year 1 to Year 7 students) a significant decrease was apparent in Coen and Hope Vale for both time periods. All other differences were not statistically significant.

Table 14 Student attendance rates in CYAAA schools by year level

	2009		2010		2012		2012-2009		2012-2010	
	Median (%)	N	Median (%)	N	Median (%)	N	Z-score	p-value	Z-score	p-value
Year 1	86	54	83	35	73	45	**-2.05**	0.04	-1.50	0.13
Year 2	86	26	87	52	77	58	**-2.20**	0.03	**-2.29**	0.02
Year 3	88	39	92	27	81	31	-1.87	0.06	**-2.70**	0.01
Year 4	87	42	90	37	81	48	-1.50	0.13	**-2.30**	0.02
Year 5	85	47	86	44	85	28	-0.30	0.76	-0.53	0.60
Year 6	86	46	80	41	83	33	-0.53	0.59	-1.14	0.25
Year 7	86	49	84	40	81	39	-0.11	0.92	-0.38	0.70
Aurukun	71	152	78	137	73	156	-0.57	0.57	-0.95	0.34
Coen	96	38	97	40	94	34	**-2.20**	0.03	**-2.59**	0.01
Hopevale	92	113	91	99	84	92	**-4.48**	0.00	**-2.83**	0.00
Total	86	303	86	276	80	282	**-3.10**	0.00	**-3.31**	0.00

This finding differs from what was reported during the site visits. There was a general perception at each of the three schools that attendance has improved. This could be a result of an increase in attendance rates due to the Welfare Reform since 2008 or this may be because of changes in roll marking procedures reported by CYAAA that were introduced in 2010. Analyses for the Cape York Welfare Reform Evaluation, showed that the school attendance rate in Aurukun was 46 per cent in 2008 (Term 1), 56 in 2009 and 66 in 2010. Reported attendance rates were lower than in Table 14, because the Welfare Reform Evaluation reported average attendance rates (weighted by the number of days students were enrolled each term) instead of median attendance rates. Standard errors were not available so changes over time could not be tested for significance. The apparent increase in Aurukun was maintained during the CYAAA Initiative.

According to the same report, average school attendance rates in Coen were 91 per cent in 2008, 95 in 2009 and 95 in 2010. The average attendance rates for Hope Vale were 81 per cent in 2008, 88 in 2009 and 87 in 2010. These figures show that there may have been a small increase between 2008 and 2009 in those two schools as well. However, the results in Table 14 show that this potential initial increase was not, or only partly, sustained after 2010.[42]

Children's behaviour problems in CYAAA schools are reduced

On the whole, children's behavioural problems were reported to be less frequent than prior to the introduction of the CYAAA Initiative, although this varies across campuses. There are common strategies and a consistent approach to behaviour management across the three campuses. Each campus, except Coen, has behaviour management staff. A time-out room is available at two campuses. A 'buddy' system is used to send some disruptive students from one class to another. There are suspensions, which may be used as a last resort for serious behaviour such as fighting or swearing at staff. CYAAA supplied data for Aurukun and Coen campuses[43] showing the number of students who were suspended or subject to other measures related to behaviour. There were no follow ups or suspensions for Cohen in 2011 or 2012. No information was available for an early period for this campus. For Aurukun, in 2010 there were 41 students who were involved in behaviour requiring suspension or related. Of these 41, one was followed up, 40 were suspended for between one and five days, and one was excluded. The minimum number of suspensions per student was one, and the maximum was six. On average, each student was suspended 2.3 days (SD 1.6 days). In 2011, this had reduced to two students one of whom was followed up, and one of whom was suspended. In 2012, there were four students who were followed up, and none were suspended.

42 CYAAA indicated that daily attendance in Aurukun and Hope Vale is affected by up to 20 per cent when there is community unrest. They noted that during 2012 the communities of Aurukun and Hope Vale were significantly impacted by these events compared with previous years.

43 ACER requested this information for Hope Vale but this was not provided for the evaluation.

CYAAA were asked to comment upon these data, particularly on the extent to which these changes were attributable to variation in definitions or classification of behaviour, or whether the decline reported reflected a real improvement in student behaviour. CYAAA indicated that the Initiative has established a clear policy on suspensions. They were concerned that there was evidence of under-reporting previously. CYAAA wrote, of the policy as they implemented it:

> *There was a ... policy of enacting suspensions and exclusions where they were warranted however suspending a student from school was not the first option to improve behaviour, all other options of internal proactive strategies needed to be applied in the first instance. The only exceptions to these were those incidents that placed students and/or staff at risk of personal safety....*

CYAAA was adamant that there was no formal policy change between 2010 and 2011. They wrote:

> *If the data shows that the number of suspensions decreased significantly, that is due to student behaviour improving.*

They also reported that a 'Time Out' room in Aurukun, established in 2010 with associated support and transitional strategies, was not required on a full-time basis after mid 2011 due to reduction in behavioural incidents.

This advice from CYAAA, and the suspension data, suggest that there was a rapid and large improvement at Aurukun in children's behaviour in parallel with the introduction of the CYAAA Initiative at this school.

Because most school staff were only in their first or second years in the communities, few were in a position to compare and contrast current student behaviour with behaviour before the CYAAA Initiative. Those who had been in one school for some time commented that: 'Now the school is so calm; there is almost no fighting'. Another school staff member suggested that at the beginning of the first year of the CYAAA Initiative students were fighting in the school ground, showing few manners, showing no respect to teachers, experiencing shame when praised and not wanting to speak in public; now these students have changed, such that:

> *They were proud of themselves and showed respect for each other and themselves. The parents changed their attitude and their response to the school. The whole community came to watch – they saw the change in the students' social skill, pride in themselves.*

Staff from all three schools reported that 'what is happening out in the community doesn't come in to school'. This is a positive outcome when 'what is happening' involves negative social interactions. In other words, disagreements in the community are no longer brought into the schools.

While these data indicate that there have been improvements over recent years, it should be noted that staff in two of the three schools reported having recently experienced extreme behaviour by students.

An increased number of children are reaching or exceeding national minimum standards in numeracy and literacy

Analysis of the NAPLAN data available to the evaluation was undertaken to investigate the extent to which there has been an increased number of children who are reaching or exceeding national minimum standards in numeracy and literacy. (This is one of the 'within-CYAAA' analyses set out in Table 8, see page 19.)

The proportion of students reaching the minimum standards in the NAPLAN test were compared between 2010 and 2012. The results of the comparisons are presented in Table 15 (on page 56). In this table the students are pooled across the campuses. The individual students are not matched in these tables. The numbers under the columns No and Yes are the number of students that did not reach the minimum standard and those who did meet or exceeded this standard. The proportion of students who reached (or exceeded) the standard was computed for 2010 and 2012, along with the difference in proportions. Positive differences indicate an increase, negative differences a decrease in the proportion. The difference in proportion can be assumed to be normally distributed if the number of students in each cell is more than five. Therefore, a test of significance was only performed if this assumption was met.

The percentage of missing values is also included in the table. The amount of missing data was often high, indicating the proportions may well be biased and not representative of the full cohorts. Appendix 3 includes a missing value analysis, which suggests that respondents and non-respondents differ in percentage of boys, language spoken at home and school attendance rates. In addition to the students that withdrew from the test or were absent, Year 5 students from Hope Vale were also counted as missing, because of their unrealistically high NAPLAN scores in 2010. For this reason, the results need to be interpreted with caution.

The only increase in proportion that was statistically significant was in *grammar and punctuation* for Year 7, and for all three year levels pooled (across all three schools). This means that the reported difference is most likely a true difference. However, it is not known if this difference would have been significant if all students were tested, especially for the pooled year levels where more than 20 per cent of students were missing for both years. Therefore this measure of statistical significance and any interpretations drawn from it must be treated with due regard to the limitations in these data.

Given the requirement that each cell needs to have more than five students to do a test of significance, analyses by school and year level were not feasible. Instead, school level analyses were performed over all three year levels for each NAPLAN strand. In other words, the data were pooled within schools. The results of these comparisons are shown in Table 16 (on page 57).

None of the differences were statistically significant. However, the differences for Coen were positive and large for all strands and the amount of missing data was low. The differences could not be tested for statistical significance because less than five students did not reach the minimum standard in 2012 for each strand. The differences in the Coen school do seem meaningful and do suggest an increase in performance for the pooled year levels. The percentages in Coen changed from 25 to 93 per cent in grammar and punctuation, from 53 to 87 per cent in numeracy, from 50 to 71 per cent in reading and from 70 to 100 per cent in spelling. Possible explanations for the increase in performance in Coen could be the effect of the CYAAA Initiative, the relative high attendance rates or both. (The median attendance rate in Coen was 96 per cent in 2009, 97 per cent in 2010 and 94 per cent in 2012, compared to 77 and 73 per cent in Aurukun and 91 and 84 per cent in Hope Vale, see Table 14 on page 50.) There were no data available to provide any further clarification.

CYAAA teachers have high expectations of the students and pride in CYAAA schools

Interviews with school staff showed high expectations and pride in the achievement of students, particularly in reading, across all three campuses. A typical comment made by one staff member was that:

> *[Teachers] talk about the students with affection. They talk about the kids with pride and happiness.*

Another staff member said:

> *Everyone who is teaching here seems really invested in the kids – they are here for the kids.*

That expectations are high is also reflected in the 'no excuses' mantra, which aims to make students and staff accountable for their performance.

Conclusion

The answer to the question, *To what extent are the CYAAA Initiative project outcomes being met?* is that they are being met to the extent that:

- There is a high level of attendance by community members in CYAAA events, especially for the end of year performance.
- More families are making a financial commitment to their children's schooling through the SETs and the Food clubs, although the extent of this could not be measured. In this way, there was evidence of families taking more responsibility for their children's education.
- There is evidence that a large proportion of students are participating in Club and in Culture.
- The end of year performances at the schools were seen to have improved children's self-confidence and cross-cultural skills.

- There is improved student behaviour, especially at Aurukun with the introduction of the CYAAA Initiative. These improvements were attributed by school staff to the CYAAA Initiative, while some parents and carers felt this improvement had more to do with the families.
- While the data cannot provide conclusive evidence, there was some weak evidence (due to large amounts of missing data) of a greater proportion of students now being at or above the national standards for literacy in one sub-strand of literacy, when the data from all campuses were pooled. However, when the year levels within campuses were pooled there were no statistically significant differences indicating an increase in the proportion of students being at or above the national standards in each of the campuses. For Coen, where the numbers of students were too small to use tests of statistical significance, but missing data were low, differences do seem meaningful and do suggest an increase in performance for the pooled year levels.
- There was some indication of higher teacher expectations, and it would seem plausible to explain this as a direct impact of the CYAAA Initiative since this reflects their teaching practice (which is a major focus of the Initiative).
- There was some evidence of increased student self-confidence.

While the data shows high levels of participation in Club and Culture, there were no data available to establish to what extent students are progressing in their cultural and sporting achievement via Club and Culture.

There are some areas where the evidence that the CYAAA Initiative project outcomes are being met is less conclusive, in particular, in having effective working relationships with community leaders and cross-sectoral agencies. As well, the CYAAA Initiative project outcomes of improved student attendance has not been met. Student attendance has declined in two campuses during the period of the CYAAA Initiative despite the perception by many stakeholders that it has increased. This may be explained in part by more stringent roll marking procedures implemented by CYAAA. The strong stakeholder perceptions of increased attendance may also be attributed to the sharp increase in attendance in Aurukun at the inception of the Cape York Welfare Reforms in 2008. It should be noted that while the attendance data in Aurukun shows some slight shifts, it has never returned to the low levels of attendance experienced prior to the Welfare Reforms.[44]

Table 15 Proportions at or above the national minimum standards in 2010 and 2012 by year level

NAPLAN		At or above standard in 2010				At or above standard in 2012				Difference (2012 - 2010)		
Strand		No	Yes	Proportion	Missing	No	Yes	Proportion	Missing	Proportion	Standard error	Z-score
Grammar & Punctuation	Year 3	18	**5**	0.22	18%	14	9	0.39	26%	0.17		
	Year 5*	16	**3**	0.16	58%	14	**4**	0.22	31%	0.06		
	Year 7	27	6	0.18	15%	17	19	0.53	12%	0.35	0.12	**2.99**
	Total	61	14	0.19	33%	45	32	0.42	21%	0.23	0.07	**3.07**
Numeracy	Year 3	14	9	0.39	18%	15	9	0.38	23%	-0.02	0.14	-0.11
	Year 5*	18	**1**	0.05	58%	16	**3**	0.16	27%	0.11		
	Year 7	21	13	0.38	11%	25	14	0.36	5%	-0.02	0.11	-0.21
	Total	53	23	0.30	32%	56	26	0.32	16%	0.01	0.07	0.20
Reading	Year 3	**5**	16	0.76	25%	13	9	0.41	29%	-0.35		
	Year 5*	18	**0**	0.00	60%	9	6	0.40	42%	0.40		
	Year 7	20	11	0.35	21%	29	10	0.26	5%	-0.10	0.11	-0.89
	Total	43	27	0.39	38%	51	25	0.33	22%	-0.06	0.08	-0.72
Spelling	Year 3	17	6	0.26	18%	13	10	0.43	26%	0.17	0.14	1.24
	Year 5*	15	**4**	0.21	58%	13	**5**	0.28	31%	0.07		
	Year 7	19	14	0.42	15%	23	13	0.36	12%	-0.06	0.12	-0.54
	Total	51	24	0.32	33%	49	28	0.36	21%	0.04	0.08	0.57

** Hope Vale students were excluded from the Year 5 cohort*

Note: Z-scores bolded if significant.

44 For example, the *Cape York Welfare Reform Evaluation* (DEEWR, 2013 reported that 'published school attendance rate at Aurukun increased from 46.1 per cent in the first term of 2008 to 70.9 per cent in 2012' (p. 4).

Table 16 Proportions at or above the national minimum standards in 2010 and 2012 by school

		At or above standard in 2010				At or above standard in 2012				Difference (2012 - 2010)		
		No	Yes	Proportion	Missing	No	Yes	Proportion	Missing	Proportion	Standard error	Z-score
Aurukun	Grammar & Punctuation	31	3	0.09	31%	31	10	0.24	20%	0.16		
	Numeracy	33	3	0.08	27%	40	4	0.09	14%	0.01		
	Reading	25	8	0.24	33%	31	8	0.21	24%	-0.04	0.10	-0.38
	Spelling	32	2	0.06	31%	35	6	0.15	20%	0.09		
Coen	Grammar & Punctuation	15	5	0.25	0%	1	13	0.93	13%	0.68		
	Numeracy	9	10	0.53	5%	2	13	0.87	6%	0.34		
	Reading	9	9	0.50	10%	4	10	0.71	13%	0.21		
	Spelling	6	14	0.70	0%	0	14	1.00	13%	0.30		
Hope Vale*	Grammar & Punctuation	15	6	0.29	51%	13	9	0.41	29%	0.12	0.15	0.85
	Numeracy	11	10	0.48	50%	14	9	0.39	26%	-0.08	0.15	-0.57
	Reading	9	10	0.53	56%	16	7	0.30	26%	-0.22	0.15	-1.46
	Spelling	13	8	0.38	51%	14	8	0.36	29%	-0.02	0.15	-0.12

**Year 5 students were not included*

What other impacts of the CYAAA Initiative are evident?

While the central purpose of the evaluation was to enquire into the impact that the CYAAA Initiative has had on student learning in the three schools taking part in the pilot program, other changes which might have occurred as a result of the CYAAA Initiative were also investigated.

Information from the Teaching and Learning Audit

While the framework developed by Bycroft did not include the Teaching and Learning Audit of the CYAAA as a source, these data are included. The Teaching and Learning Audits provide an independent evaluation of the school leadership practices that appear to be most directly related to school-wide improvements in teaching and learning. During an audit of a school's teaching and learning practices, a judgment or 'rating' is made in relation to each of these domains. For each domain, a school's practices are rated as 'Low', 'Medium', 'High' or 'Outstanding' based on the observations of a trained school auditor.

Table 17 shows the rating given to CYAAA on each of the dimensions.

Table 17 Ratings of the CYAAA on each dimension of the Teaching and Learning Audit, 2011

Teaching and learning domain	Rating
1. An explicit improvement agenda	High
2. Analysis and discussion of data	Outstanding
3. A culture that promotes learning	Medium
4. Targeted use of school resources	Medium
5. An expert teaching team	High
6. Systematic curriculum delivery	Outstanding
7. Differentiated classroom learning	Medium
8. Effective teaching practices	High

These data provide insights into strengths of leadership practices for CYAAA. Notably, the CYAAA received outstanding scores for analysis and discussion of data, and systematic curriculum delivery. This reflects the emphasis placed by CYAAA on collecting internal data to track students' progress, and to identify where there is room for improvement.

Impact on students

In addition to positive comments about student progression in literacy and to a lesser extent in numeracy, teachers reported that the CYAAA schools provided a consistent and safe environment where students know what to expect and 'they know they are going to be able to have success if they engage'. School staff and community members agreed that life beyond the schools could be chaotic. Now, one school in particular was said to have become a haven of stability and predictability, not only through its behaviour management policies and procedures, but also through its curricula and pedagogy. Typical statements of this kind were:

> *In a setting like this, structure and consistency are an important part of the progression of learning, and maybe, are exactly what the kids need and want.*

and,

> *No matter what goes on out in the community they know that any day they come to school they can expect the teacher to be teaching them. Every day.*

This consistency was seen as one of the strengths of the CYAAA Initiative.

Thus, those comments made about the impact of the CYAAA Initiative on more global outcomes for students were typically positive.

Impact on teachers

The impact of the CYAAA Initiative on teachers and issues related to teachers is examined in terms of:

- their professional learning
- accountability processes
- the structure of the program on their practice
- staff turnover
- the outcomes for Indigenous staff.

Professional learning

Among teachers, the CYAAA Initiative was considered to have had a positive impact on professional learning. Many teachers referred to the opportunities they had been given to undertake professional development. Teachers spoke highly of their initial training as well as the ongoing support they received from the Direct Instruction coaches and from their own senior teachers. This is consistent with the 'High' rating given to CYAAA by the Teaching and Learning Audit for Domains 5 and 8 (*An expert teaching team, and Effective teaching practices*, respectively).

Accountability

Across all three campuses staff commented that teachers had benefited by being made accountable for their performance. In general, the frequent and regular testing of students, though considered onerous by some, was identified as a positive aspect of the CYAAA Initiative for teachers. This is consistent with the 'Outstanding' rating given to CYAAA by the Teaching and Learning Audit for Domain 2 (*Analysis and discussion of data*).

Data are provided from tests conducted each week as part of full immersion Direct Instruction at the schools. (The tests are referred to as 'Mastery Tests'.) Every ten lessons or so, students sit a test. They have to pass[45] the test to move forward in the program. Summary student test information is sent through to CYAAA's Direct Instruction partners each week and analysed by them, the principal, instructional staff and heads of curriculum. These data are used to inform decisions about instruction and student placement in the program. Diagnostic feedback, based on these data, is also given to the teachers. This information can be precise, such as indicating that a particular student does not understand a specific concept, for example, fractions in mathematics. Teachers also use the results to monitor student progress based on the progress made through mastery tests. The results are summarised and are shared with the staff each week. Part of this information is the number of students 'at grade level'. (The programs are mapped to Grade levels.)

One teacher described the impact of this on teachers and their teaching:

> *In any classroom you walk into here both the teacher and students will know what they know and what they don't [know]. The structure of the program and the systems that are in place generate this knowledge. The program fosters accountability … I love having to be accountable. Every Thursday we have to submit the data we have gathered during the week. The program structure means we are constantly doing testing with the children so we know where they are and we know what areas they are in need of remediation.*

In this way, because student learning is closely monitored, teachers are being held to account.

Structure

While several teachers indicated a preference for more autonomy in the classroom, the majority of staff across the three campuses felt they had benefited from the structure of the program. A typical comment from a teacher was:

> *I like knowintg what I've got to do, and I like knowing where to be and where I've got to get to. I think then I can do my job well. If you have very clearly defined criteria and benchmarks that need to be met, then it's easy to keep on track; it's easier to see who needs help.*

45 The pass threshold is 90 per cent of responses correct.

Several teachers pointed out that they sometimes varied the Direct Instruction approach. They still taught the script but might add something – perhaps different voices or elaborate on an explanation. As one teacher explained:

> *I think it's worth noting that despite the strict structure of the program you will find that each teacher brings elements of themselves into the delivery of the program … while you may have two teachers teaching the same program – using the same script you can see a difference between the two.*

Several teachers commented on the gap between what they had been taught about teaching at university and the way in which they were now teaching at CYAAA.

Staff turnover

School staff reported that the turnover of staff has improved. One of the reasons given for the lower turnover rate was that staff who come to the school know already what they are coming into. One community member contrasted the situation prior to the CYAAA Initiative and now:

> *The turnover of teachers here used to be bad – a couple of months at a time. But now they are staying two, three, four years. Why? Because teachers see there is some goal, they are getting professional satisfaction; they are starting to become part of the life of the community.*

More detailed records of staff turnover at each school were provided by CYAAA (see Appendix 8). Table 18 provides a summary of this information. There are insufficient time points in these data to establish if there are downward trends in staff turnover. It is clear that in 2012, staff turnover at Aurukun and Coen was low.

Table 18 Number of teaching staff leaving each campus for 2010-12

	2010	2011	2012
Aurukun	3	3	1
Coen	3	5	1
Hope Vale	No data	2	3

Indigenous staff

Each school had Indigenous staff.[46] Table 19 shows the numbers, as provided by CYAAA to the evaluation.

Table 19 Number of Indigenous teachers, staff and new Indigenous positions at each school 2012

	Number of Indigenous teachers in each school in 2012	Number of Indigenous staff in each school in 2012	Number of new Indigenous positions created*
Aurukun	3 (including a Registered Teacher, a Community Teacher and Assistant Teacher)	15 (including teachers, teacher aides, administrative, cleaning and grounds)	5
Hope Vale	5 (including 2 retirements during the year)	17 (including teachers, teacher aides, case management, administrative, cleaning and grounds)	5
Coen	0	Up to 6, usually 5	5

** For example, case managers, culture tutors*

CYAAA also pointed to the appointment of a principal from the local community and noted too, the difficulty of recruiting new, qualified Indigenous teachers (due to a shortage of appropriately skilled and qualified applicants). Additionally, CYAAA advised that a total of seven Indigenous staff at the schools have commenced teacher education programs since the introduction of the Initiative. (Three were from Coen, and there were two from each of Aurukun and Hope Vale.) Other school staff have expressed an interest in undertaking the education program. CYAAA argued that these commencements occurred as a consequence of the Initiative because CYAAA 'actively recruits young locals to be teacher aides and encourages/supports them to enrol in teacher training'. CYAAA also noted that this recruitment was 'requested and supported by local mayors as part of the CYAAA implementation strategy'. In response to further information, CYAAA also argued that the Initiative:

46 In December 2011, CYAAA and DETE entered in an agreement to review the funding process for CYAAA and this made provision for seven part-time local Culture-tutor positions for Aurukun.

> *... has provided a framework, structure, professional development and coaching that has given local teacher aides the confidence for the first time to conduct small group instruction and realise their potential to become fully qualified teachers. Previously, local teacher aides performed non-instructional support roles.*

So, there was some evidence of a widening engagement for Indigenous staff.

However, some parents and carers and community members, who had lived in the community for years, said that numbers of Indigenous classroom teachers had declined since the introduction of the CYAAA Initiative. While these perceptions may be inconsistent with empirical reality, it nevertheless points to a set of perceptions which suggest that for some school community members the CYAAA Initiative has changed the staffing profiles in ways that concern them. Yet, for others, the CYAAA Initiative has brought benefits for the Indigenous staff. For example, one observer noted:

> *It allows people who aren't trained as teachers to really be involved. So that is fantastic for local Teacher Aides who can take more responsibility and be a teacher in the classroom without having to go through a whole degree which isn't really accessible for most people here. I think that the fact that it is so scripted is also good in a place like this which has a high turnover of teachers. Even with teachers staying on for three years that still means quite a lot of disruption. With the script the students know they will get the same thing every year rather than having to work out the expectations of every new teacher that comes along.*

The genuine difficulties of recruitment, training and retention of local staff were alluded to repeatedly during interviews.

Impact on parents and carers

The impact of the CYAAA Initiative on parents and carers was difficult to measure, partly because of the changes brought about as part of the wider Welfare Reforms, which affect parents and carers in direct ways.

When asked about the schools' relationships with parents and carers most school staff expressed a desire for this to improve. One interviewee wanted parents to see firsthand the reading that children were doing; others wanted to see more local involvement in Club and Culture and in classroom teaching.

One positive change that was reported in one community was that community members no longer bring family issues into the school ground. While in the past parents or carers might come into the school and speak directly on behalf of their family to children in class, now these matters go through the campus Head or classroom teacher:

> *We are trying to change that norm that people don't just speak out. That's how we problem solve at school. That's what we are trying to teach the children at school, that they go to the teacher. And we are trying to help families with that as well.*

In another community, parental pride was said to be especially evident at the end of year production.

Impact on the wider community

There are formal meetings between the school and community agencies. These include:

- In Aurukun CYAAA Student Case Managers and CYAAA Campus Principals meet every fortnight with the local Family Responsibilities Commissioners (local representatives and elders) to discuss student welfare, families and attendance.
- In Hope Vale and Coen, CYAAA Student Case Managers and CYAAA Campus Principals meet regularly with local Family Responsibilities Commissioners.
- CYAAA Executives and Principals attend regular Aurukun Shire Council and Hope Vale Shire Council meetings to update on school events.

So there are regular and formal channels through which information about the school and its activities flow. However, it is difficult to identify the unique impact of the CYAAA Initiative on the community given the changes brought by the wider CYWR (of which the Initiative is, itself, a part).

Teachers tended to have a more positive view of the CYAAA Initiative's impact than did community members.[47] Even within the same community among residents who have been living there for some years, views varied as to the impact of the CYAAA Initiative on each of the school communities. Local perspectives on impact often appeared to relate to whether the Welfare Reform measures were viewed positively or negatively.

One interviewee, who had been in this community prior to the inception of the CYAAA Initiative, reported a new level of respect for the school as shown by the fact that fights are now kept away from the school grounds: 'In the eyes of the community the value of the school has increased'. Others agreed that 'community violence does not usually spill out into the school'. This was at least partly attributed to the efforts of the school in seeking to build a safe space for children. Community members are not encouraged into the school during the standard hours of the school day so that tensions and sources of unrest in the community are not brought into the school ground and any tensions arising from, say, teasing in the school are dealt with internally. For example:

> *Facebook and texting stuff causes issues between the adults and will sometimes move onto the kids. [The school works] hard to make sure what goes on in the community does not come into the school. There is no rioting as in other places. There have been no fights lately. The behaviour in the community is better than it was.*

Some interviewees suggested that the impact of the CYAAA Initiative on children's pride in their school and learning also carried over into family and community pride:

> *I've seen a change in the way the kids talk about school. They talk about it in a positive and happy way rather than the way it was before. They talk with almost pride about what they do at school. You ask them what they have been doing and they can tell you, they learnt reading – reading a book about a dog, or some Maths or some language. It has also brought the school into the forefront of the thinking of a lot of people in [the community. The school] has become, I think, a positive thing in [the community].*

However not all community members were as positive about the impact of the CYAAA Initiative on the community. Other interviewees who had also been in the community prior to the CYAAA Initiative, reported more 'negativity towards the way the parents have been held accountable for seeing that their children get to school'. According to this view:

> *… the parents are seeing the school [as] in some ways part of a punitive measure – not really the school as such – but they see that they are in trouble if they don't send their children to school. It's punitive if they are pulled before the FRC [Family Responsibilities Commission]. It has shaped the focus of a lot of people's perception of school. So they are getting a lot of flak really directed to the FRC … I think that is a change process, the negative aspects of which will lessen over time if the trial is allowed to continue. I think the negativity will lessen over time.*

This assessment accords with that given by an FRC Commissioner who said:

> *It took a while to sell the new approaches to the parents [but] now there is a fairly high level of acceptance that it is the responsibility of the parent to get the children to school.*

While not everyone is in agreement, overall the CYAAA Initiative can be seen as impacting positively upon this particular community.

In another community there were differing perceptions among staff regarding the degree and nature of the impact on the wider community, with some identifying negativity in the community but giving different reasons for this. Others felt there had been a positive impact based on the Welfare Reform strategy rather than the CYAAA Initiative itself. Even among staff in the one school there were differing views regarding the nature and extent of the impact on the wider community.

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47 It needs to be acknowledged that there were only a limited number of interviews conducted at Aurukun. However, the researcher who visited this community has had a long connection with it, and a good understanding of its recent history (over the last ten years), and there was extensive consultation with school staff, who are themselves members of the community, and interact with it. CYAAA asked ACER to consider the use of the Visual Participatory Evaluation undertaken for CYAAA previously. ACER did not use this information because of concerns, consistent with those expressed by Bycroft in the Monitoring and Evaluation Framework, about the methodology used.

Surprising elements

Principals and teachers were asked if there was anything that had surprised them about the program. This question was designed to identify any unintended consequences of the program. There was no evidence of unintended outcomes in the data taken from this question.

Conclusion

The answers to the question *What other impacts of the CYAAA Initiative are evident?* are that:

- The CYAAA Initiative appears to have had a positive impact on professional learning.
- Teachers reported that the CYAAA Initiative had made them feel more accountable for their teaching.
- Most teachers advised that the structure of the program worked well for them and their teaching.
- Staff turnover was reported by various interviewees to have improved, that is lowered, with the introduction of CYAAA into the schools, although this could not be confirmed with other information.
- There was some indication of improvements with a reduction in the incidence of conflict in the community spilling over into the schools.
- There was no evidence of the Initiative having any negative unintended outcomes.

However,

- there was inconclusive evidence available to the evaluation about the extent to which Indigenous teachers are engaged in the school and about the impact of the CYAAA Initiative on the wider community.

Thus there is some evidence drawn from within the three communities and schools that points to the CYAAA Initiative as having had a variety of positive impacts on teachers, students and the community.

Final observations

The main purpose of the evaluation was to identify the impact of the CYAAA Initiative on student learning. This was done by addressing three questions:

- What is the impact of the CYAAA Initiative on student learning in the pilot communities?
- To what extent are the CYAAA Initiative project outcomes being met?
- What other impacts of the CYAAA Initiative are evident?

The evaluation faced three main issues:

- As argued earlier in the report, the CYAAA Initiative appears to be in its development phase, and hence at a stage where full-term outcomes will not have been achievable. The length of time in which the program has been operating meant that only small changes may have occurred, which gives rise to the risk that these changes, while real, may go undetected.
- The problem of attribution, namely, being able to attribute observed outcomes to the operation of the CYAAA Initiative. This problem was exacerbated because of the complex wider context in which the Initiative operates (Cape York Welfare Reform program, the Family Responsibilities Commission, a Student Case Management Framework (itself part of the CYAAA model) and so on). Data to statistically control for the effect of these factors were not available for the evaluation. As a result the evaluation drew largely on the judgement of those who were interviewed. Given that, the data collected via the interviews were not suited to generalisation, the evaluation was limited in its capacity to attribute observed outcomes to the CYAAA Initiative.
- Limitations in the data available to the evaluation. The test data, in particular, had problems caused by missing data. The qualitative data were collected at only one point in time, which limited the evaluation's capacity to measure or track changes.

What is the impact of the CYAAA Initiative on student learning in the pilot communities?

The evaluation used (de-identified) NAPLAN, PAT and DIBELS data. These data were intended to measure the impact of the Initiative on student learning in the pilot communities.

There were two approaches to be used for the analysis of the NAPLAN data. The first was to match CYAAA schools with like schools, however this could not be done because of large amounts of missing data. A second approach was a matched student comparison with individual students from CYAAA campuses matched to students from other schools. Again, this could not be done because of large amounts of missing data.

While the NAPLAN data could not support comparisons across time or against matched schools or students, they did provide some information about the proportion of CYAAA students achieving or exceeding national standards for literacy. There was a statistically significant increase in the proportion attaining national standards in Grammar and Punctuation when all campuses were pooled. There was also some evidence from the NAPLAN data – which could not be assessed by tests of statistical significance because of low numbers – of an increase in the proportion of students achieving or exceeding national standards for literacy at the Coen campus. This increase was not observed at the other two campuses.

The analysis of the PAT and DIBELS data revealed levels of missing data that meant they could not be used for the evaluation.

The qualitative data point to wide agreement among school staff – mostly teachers – that students were improving in their literacy as a result of the CYAAA Initiative (especially for the youngest children). Numeracy skills were also reported as improving, although at a lower rate than for literacy. Even though most principals and classroom teachers were not in the three schools prior to the CYAAA Initiative being introduced, and so were not always in a position to be able to say what the school was like before the Initiative was introduced, there was a consensus of opinion across staff in all three schools that their students are now reading better than was the case at the beginning of the CYAAA Initiative. This progress is attributed by staff in the three schools to specific and systematic teaching of foundational reading and mathematical concepts and elements.

These views by the school staff on student literacy and numeracy can be treated as professional judgements, and therefore valid data.

Other opportunities for student learning were identified in Club and Culture – particularly music, sport and cultural activities. While these attract high levels of participation, it is too soon to measure the impact of these activities on student learning.

To what extent are the CYAAA Initiative project outcomes being met?

Nine outcomes were identified as relevant to the evaluation. These outcomes and the findings of the evaluation are as follows:

CYAAA has effective working partnerships with community leaders and cross-sectoral agencies: There was evidence provided by CYAAA of a range of connections between community leaders and the schools in all of the communities. The evaluation confirmed that significant progress has been made in one community in establishing effective working partnerships with community leaders and cross-sectoral agencies. However, the findings were inconclusive with respect to effective working partnerships with community leaders and cross-sectoral agencies in two other communities.

Community members attend CYAAA events: many parents and community members, attend CYAAA events, especially the end of year performances by the schools.

Families take responsibility for their children's education: Families appear to be taking more responsibility for their children's education in terms of financial contributions to the Student Education Trust and the Food Clubs. but there was conflicting evidence about the extent to which this outcome is being met in other ways.

Children are fully participating in Club and Culture and progressing to cultural/sporting achievement: A large proportion of children are participating in Club and in Culture at each of the three campuses. There was no information available to the evaluation about the extent to which the students are progressing in their cultural and sporting achievements.

Children's self-confidence and cross-cultural skills are improving through Club and Culture programs: The end of year performances, as one aspect of Club and Culture programs were reported by some interviewees to have led to improved self-confidence and cross-cultural skills among the participating students.

School attendance improves over time or is maintained at or above maintenance standards: There was broad agreement across the three schools that attendance has improved, however, analysis of attendance data obtained from DETE indicated that student attendance rates remained stable or decreased between 2010 and 2012. Changes in roll marking procedures introduced by CYAAA may account for the results taken from the attendance data.

Children's behaviour problems in CYAAA are reduced: Children's behavioural problems were reported to be fewer than prior to the introduction of the CYAAA Initiative, and the data supplied by CYAAA appears to confirm these reports.

An increased number of children are reaching or exceeding national minimum standards in numeracy and literacy: Analysis of the NAPLAN data available to the evaluation was undertaken to investigate the extent to which there has been an increased number of children who are reaching or exceeding national minimum standards in numeracy and literacy. Specifically, the proportion of students reaching the minimum standards in the NAPLAN test were compared between 2010 and 2012. The following results were obtained:

- An increase in proportion that was statistically significant was for 'grammar and punctuation' for Year 7 (all campuses pooled).
- An increase in proportion that was statistically significant was for 'grammar and punctuation' (all three year levels pooled).

It is not known if this difference would have been significant if all students had been tested, especially for the pooled year levels where more than 20 per cent of students were missing for 2010 and 2012.

School level analyses were also performed over all three year levels for each NAPLAN strand. It was found that none of the differences were statistically significant. However, the differences for Coen were positive and large for all strands (and the amount of missing data was low). These differences could not be tested for statistical significance because the number of students was too small. The differences in the Coen school indicate an increase in performance for the pooled year levels.

So there was some evidence that there is an increased (small) number of children reaching or exceeding national minimum standards at one campus.

CYAAA teachers have high expectations of the students and pride in CYAAA schools: Interviews with school staff indicated that there are high expectations of students and that there is pride in their achievements, particularly in reading, across all three campuses. There was no other (dis)confirming evidence available to the evaluation.

What other impacts of the CYAAA Initiative are evident?

There was a range of other impacts investigated by the evaluations. In summary it was found that:

- the schools now provide a consistent and safe environment for students
- for teachers, there has been a positive impact on their professional learning
- the regular and frequent testing of students was reported to have caused teachers to feel more accountable
- teachers across the three campuses believe they have benefited from the structure of the program associated with the Initiative
- turnover of staff was reported to have improved, although there was no confirming evidence to support or refute this view
- there was some evidence of a widening engagement for Indigenous staff, although some community members and parents noted a decline in the numbers of Indigenous classroom teachers
- the evaluation could not conclusively assess the impact of the program on parents and carers
- there were regular, formal channels through which information about the school and its activities flow, but the evidence was conflicting about the extent to which the CYAAA Initiative's impact on the wider community has been positive across the three communities
- there was no evidence of negative unintended outcomes from the program.

Concluding comments

The evaluation has found that the CYAAA Initiative at Aurukun, Coen and Hope Vale was widely reported by school staff and community members to have had a broad range of positive outcomes. These reports are confirmed by other qualitative data such as participation in Club and Culture and school events, investment in SET and Food clubs. The extent of these outcomes – especially around student learning – has, however, proven difficult to quantify. This is because the data that were expected to provide these measures were unsuited to the task. They had too much missing information. Overlaying this problem with the data was the fact that the Initiative has been in operation for a relatively short period of time, and so the task of finding an impact was always going to be difficult given this early stage of development.

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Appendix 1: Missing data

The task of statistical analysis is to take a collection of information and systematically reduce its complexity so that it can be better understood. This reduction needs to be done systematically and on a sound basis. For most of the analyses of test data used in this evaluation, the focus is upon the difference between mean scores at two time points.

Given no other information than the average score of a class of students, a visitor to this class asked to guess the score of an individual student should cite the average. This has the best chance of being the student's score because the mean represents what is typical of the class. But it is typical only under a set of specific conditions. If the class has ten students, five of whom scored 1 out of 10 and five of whom scored 10 out of 10 on a test, then the class mean would be 5.5 and the use of the mean here would lead to a radically wrong guess. In other words, it is also important to know about the *distribution* of the data. If the data are, for example, distributed normally, the use of the mean will be the best guess.

Student achievement scores are, across large groups, distributed normally (or very close to normal), and this distribution makes the use of the mean a valid measure of what is typical of the group.

There are two conditions, both of which applied to the all test data used in the evaluation, which jeopardise analyses that compare mean scores:

- Small numbers of cases (students)
- Missing data.

Small numbers of cases are less likely to conform to assumptions about the data being normally distributed. Take an extreme case of two students, it is impossible to obtain a bell shaped distribution with this number. An additional problem with small numbers of cases is that they are especially vulnerable to the effect of outliers. In a small class, one student with a score of 10 out of 10, where other students score 3 out of 10, will have a much larger impact on the mean score for the class, than in a much larger class.

Missing data is always a problem. If the data are missing randomly across the cases, there is less of a problem than if they are missing in systematic ways. Randomly missing data may arise for example with students being absent due to illness (although even here there is possibly a correlation between health and wellbeing and student achievement). Missing data becomes a major problem if cases are missing for some systematic reason linked to levels of performance in the outcome being measured. For example, if it is known that being absent from school for long periods is associated with lower levels of achievement, and these students are absent from the testing, then the distribution will be altered (the lower tail truncated) and the mean inflated upwards. This inflation leads to a result which is an untrue (biased) estimate of what is typical of the class as a whole.

In this study, both of these problems intersected. There are a lot of missing data, and for many analyses, small numbers of students. Further, evidence was found of systematic biases caused by missing data.

There are no conventions about what are acceptable levels of missing data because in some high stake settings acceptable levels will be lower than in other settings. The OECD PISA project requires that there be no more than 20 per cent of data missing at the individual student level. It was decided to set the threshold at 20 per cent for the evaluation. This threshold was chosen based upon the judgement that the evaluation is high stakes (like PISA). On this rule, where missing data exceeded 20 per cent of the group being considered, the data were treated as being unacceptably at risk of bias.

While analyses were undertaken to investigate whether there was evidence of bias (see Appendices 3, 4 and 5), these analyses do not provide evidence of no bias in the data. The problem, which cannot be addressed, is that the data may be biased in unknown ways, and without knowing what ways it is impossible to test for the bias.

An investigation of attrition from the Longitudinal Surveys of Australian Youth (LSAY) by Rothman (2009)[48] shows that there is a correlation between propensity to respond to a survey and achievement levels in literacy. That is, non participants tend to come from the lower end of the distribution. While LSAY is not an in-school test, it seems plausible that the same effect might be shaping the probability of students taking a literacy or numeracy test. If this is so, then this suggests a conservative (relatively low) threshold for acceptable levels of missing data is needed.

48 See http://research.acer.edu.au/cgi/viewcontent.cgi?article=1047&context=lsay_technical see page 11, viewed March 18 2013.

Appendix 2: Guiding questions

The following questions formed the basis for the interviews and were adapted according to individual circumstances (for example, if the interviewee was a community member, Board member, parent/carer, teacher, principal) and context (for example, if the interviewee had been in the community for many years or in the school only a short period).

Overarching guiding questions

The four main research questions guiding the interviews were:

- What does the CYAAA Initiative look like in practice?
- What has been the impact of the CYAAA Initiative on students?
- How do you know this has been the impact? (e.g. what evidence, information or data tell you this?)
- How do you know it is the Initiative that has contributed to this impact? (e.g. how do you know it is the CYAAA Initiative that has made this difference and not other factors or changes in the community?)

Guiding questions for principals and staff

Can you tell us about the Initiative from your perspective – what are its main aspects?

What impact has the Initiative had on:

- student attendance?
- reading and literacy?
- numeracy?
- other academic learning?
- other skills?
- cultural knowledge?
- any other changes in students as a result of the Initiative?

How do you know the program has had these impacts? (i.e. what evidence are you using that tells you this?)

What aspects of the program have led to these impacts?

What impact has the Initiative had on your own professional learning or leadership skills?

What impact has the Initiative had on teaching and support staff at the school? (How do you know this?)

What impact has the Initiative had on parents, carers and families? (How do you know this?) (How have students benefited from this impact?)

What impact has the Initiative had on the wider community? (How have students benefited from this impact?)

What is the single biggest impact the program has had in your school?

Have there been any surprising outcomes?

What would have been the situation in these schools if this program had not been in place?

Guiding questions for parents and carers

Tell us about your child/children (e.g. what grades are they in? How long have they been going to the school?)

What does XXX like most about going to school?

What changes have you seen in the school? (Have these been good or not so good changes? Why do you think this?)

What impact have these changes had on your child? On the other children at the school?

How is the CYAAA program helping children learn?

Is there anything else you would like to see in the program?

Are there any issues or concerns with the current program and your child?

(If their child is moving to secondary school: What about transition from DI to mainstream school, how will this go?)

(If they have moved their child from another school: What is the biggest difference between the previous school and here?)

Guiding questions for community members

Tell us what you know about the CYAAA Initiative.

What changes have you seen?

What impact have they had? (on the school? students? the wider community?)

How is the CYAAA program helping children learn?

Is there anything else you would like to see in the program?

Are there any issues or concerns with the CYAAA program?

Guiding questions for CYAAA

How did you come to be involved in the CYAAA Initiative? Can you give us some background about your involvement (to give us a context)

Why was it set up?

What other changes have occurred in the Cape York communities since it was set up? What impact have these changes had?

What do you see as the main objective of the CYAAA?

What are the key elements of the Initiative? How is it different from other programs targeting Aboriginal and Torres Strait Islander students?

What do you see as the CYAAA's biggest achievement? (Why?)

What (other) impact has the Initiative had on student learning? How has it made a difference?

How do you know? What evidence tells you this?

What other impacts has the program had – e.g. on staff (training?) (leadership)?

How do you know it is the CYAAA Initiative that has contributed so much to this change?

What outcomes would these children have had without the CYAAA intervention?

Appendix 3: Analysis of NAPLAN missing data

This appendix provides the (edited) content of a document prepared by ACER and submitted to DETE during the evaluation concerning limitations in the data. It provides the evidence in support of ACER's view that the available NAPLAN data were unable to be used to compare the CYAAA schools with a set of matched schools.

Cross-sectional and longitudinal exploration of NAPLAN data at the three CYAAA campuses

This document describes analysis of NAPLAN data collected from three sites that constitute the Cape York Aboriginal Australian Academy (CYAAA).

This document outlines the evidence and arguments that have led ACER to conclude that these NAPLAN data are not able to be used to measure the impact of the CYAAA program on the literacy and numeracy achievement of students at the CYAAA schools. This conclusion has been reached because there are too many missing data.

This conclusion has not been reached because of concerns about the validity or reliability of NAPLAN data nor its capacity to measure student literacy or numeracy achievement. Indeed, it is ACER's view that NAPLAN data are high quality data that reliably and validly tap literacy and numeracy achievement.[49]

Overview of the data

The three CYAAA campuses are: Aurukun, Coen and Hope Vale.

The CYAAA program started running in 2010 at Coen and Aurukun and in 2011 at Hope Vale.

NAPLAN test results were explored using data collected from 2009 to 2012.[50] Students in Year 3, Year 5 and Year 7 were administered the NAPLAN test in each of these years.

In 2012, the total numbers of students that were not exempt from the NAPLAN test were 31 in Year 3, 26 in Year 5 and 41 in Year 7 (see Table 22). Coen was the smallest school with five students in Year 3, five students in Year 5 and six students in Year 7. Hope Vale had eight students in Year 3, seven in Year 5 and 16 in Year 7. Aurukun was the largest school with 18 students in Year 3, 14 in Year 5 and 19 in Year 7. These numbers are small but they represent the full population of the three grades in the CYAAA schools.

Table 22 also shows the number of students that were administered the NAPLAN test and the percentage of missing scores for each school, overall, and by year level and assessment year for each of the test domains. Percentages of 20 and over are shown bolded and in red-coloured font. In 2012, all three schools had more than 20 per cent missing values in at least one year level for all NAPLAN strands. These missing values have an unknown effect on summary statistics that describe student progress in these schools. ACER adopted this threshold of 20 per cent because a loss of one fifth of data in a high stakes assessment is, prima facie, a major loss of information. This loss is particularly acute when populations are small.

An examination of participation rates in the NAPLAN tests was undertaken to establish the extent to which the observed levels were akin to those seen in CYAAA schools.[51] Table 20 shows the participation rate for Indigenous and non-Indigenous students for each of the domains, by year level for all Australia. Participation rates are around 90 per cent or above, except for Year 9 Indigenous students.

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49 See, for example, ACER's report at: http://www.mceecdya.edu.au/verve/_resources/ACER_Report_on_Reporting_and_comparing_school_performances.pdf

50 Data from 2008 were also used in longitudinal analyses that were undertaken by ACER.

51 Data from 2008 were also used in longitudinal analyses that were undertaken by ACER.

Table 21 shows these participation rates for Queensland. Again, they are around 90 per cent and above, with Year 9 Indigenous students around 80 per cent.

Table 20 Participation rates for NAPLAN for all of Australia, 2012 by Indigenous status and domain

Year	Indigenous Status	Reading	Persuasive Writing	Spelling	Grammar and Punctuation	Numeracy
Year 3	Indigenous	89.7	89.9	90.6	90.6	88.2
	Non-Indigenous	95.7	95.6	95.9	95.9	95.5
Year 5	Indigenous	89.6	89.5	90.2	90.2	88.4
	Non-Indigenous	96.3	96.2	96.4	96.4	96
Year 7	Indigenous	87.8	87.6	88.2	88.2	86.2
	Non-Indigenous	95.9	96.1	96.2	96.2	95.6
Year 9	Indigenous	77.1	77.7	78.5	78.5	75.8
	Non-Indigenous	92.9	93.2	93.5	93.5	92.4

Table 21 Participation rates for NAPLAN for Queensland, 2012 by Indigenous status and domain

Year	Indigenous Status	Reading	Persuasive Writing	Spelling	Grammar and Punctuation	Numeracy
Year 3	Indigenous	91.6	91	91.8	91.8	90.3
	Non-Indigenous	95	95	95.2	95.2	94.7
Year 5	Indigenous	90.3	90.8	91.2	91.2	89.4
	Non-Indigenous	95.2	95	95.3	95.3	94.9
Year 7	Indigenous	91.5	91.1	91.9	91.9	90.3
	Non-Indigenous	95.7	95.7	95.9	95.9	95.3
Year 9	Indigenous	81.3	82	82.3	82.3	80.7
	Non-Indigenous	92.1	92.5	92.7	92.7	91.7

Broadly the participation rates for students at the CYAAA campuses are similar to those reported across Australia and in Queensland for Indigenous students. These participation rates do not stop ACARA[52] from publishing data that will allow schools to make comparisons with each other. However, it is ACER's view that the purposes for which ACARA sees the data being used, and those to which they are being put in the context of the CYAAA evaluation are fundamentally different.

For ACARA, the NAPLAN data have as their primary purpose the stimulation of discussions with other schools as a contribution to their self-review and improvement. Thus, Professor Barry McGaw, the Chair of ACARA, writes on the *MySchool* website:

> *The greatest value of the site will come to those schools that open up productive discussions with other schools that are doing better in similar circumstances to help them review and improve their own practices.*[53]

In the context of the evaluation of CYAAA, it is ACER's view that the data need considerable precision given the importance of the CYAAA program and the quantum of resourcing it requires. This appendix sets out the evidence to show that this precision is lacking in those NAPLAN data available to this evaluation for the three schools sites: Aurukun, Coen and Hope Vale.

52 ACARA is the Australian Curriculum, Assessment and Reporting Authority. It is responsible for 'the development of a national curriculum, a national assessment program and a national data collection and reporting program that supports 21st century learning for all Australian students'. See http://www.acara.edu.au/default.asp viewed March, 2012.

53 http://www.myschool.edu.au/ See the section headed: A note from ACARA. Viewed December 2012

Table 22 NAPLAN respondents and non-response rates in three CYAAA campuses

NAPLAN	Centre	Year Level	Respondents				Per cent missing				NAPLAN Population			
			2009	2010	2011	2012	2009	2010	2011	2012	2009	2010	2011	2012
Grammar and Punctuation	Aurukun Campus of CYAAA	03	18	11	26	11	14%	27%	4%	39%	21	15	27	18
		05	23	13	16	14	15%	32%	16%	0%	27	19	19	14
		07	19	10	23	16	30%	33%	12%	16%	27	15	26	19
	Coen Campus of CYAAA	03	6	5	3	4	0%	0%	25%	20%	6	5	4	5
		05	7	6	7	4	0%	0%	0%	20%	7	6	7	5
		07	4	9	7	6	0%	0%	0%	0%	4	9	7	6
	Hope Vale Campus of CYAAA	03	12	7	16	8	8%	13%	16%	0%	13	8	19	8
		05	13	0	13	5	0%	100%	7%	29%	13	20	14	7
		07	15	14	12	14	6%	7%	25%	13%	16	15	16	16
	Total of CYAAA	**03**	**36**	**23**	**45**	**23**	**10%**	**18%**	**10%**	**26%**	**40**	**28**	**50**	**31**
		05	**43**	**19**	**36**	**23**	**9%**	**58%**	**10%**	**12%**	**47**	**45**	**40**	**26**
		07	**38**	**33**	**42**	**36**	**19%**	**15%**	**14%**	**12%**	**47**	**39**	**49**	**41**
Numeracy	Aurukun Campus of CYAAA	03	15	11	23	13	29%	27%	15%	28%	21	15	27	18
		05	18	14	14	14	33%	26%	26%	0%	27	19	19	14
		07	21	11	20	17	22%	27%	23%	11%	27	15	26	19
	Coen Campus of CYAAA	03	6	5	2	4	0%	0%	50%	20%	6	5	4	5
		05	7	5	6	5	0%	17%	14%	0%	7	6	7	5
		07	4	9	7	6	0%	0%	0%	0%	4	9	7	6
	Hope Vale Campus of CYAAA	03	10	7	15	7	17%	13%	21%	13%	12	8	19	8
		05	12	0	11	4	8%	100%	21%	43%	13	20	14	7
		07	16	14	14	16	0%	0%	13%	0%	16	14	16	16
	Total of CYAAA	**03**	**31**	**23**	**40**	**24**	**21%**	**18%**	**20%**	**23%**	**39**	**28**	**50**	**31**
		05	**37**	**19**	**31**	**23**	**21%**	**58%**	**23%**	**12%**	**47**	**45**	**40**	**26**
		07	**41**	**34**	**41**	**39**	**13%**	**11%**	**16%**	**5%**	**47**	**38**	**49**	**41**
Reading	Aurukun Campus of CYAAA	03	18	11	26	11	14%	27%	4%	39%	21	15	27	18
		05	18	13	16	11	33%	32%	16%	21%	27	19	19	14
		07	20	9	20	17	26%	40%	23%	11%	27	15	26	19
	Coen Campus of CYAAA	03	6	4	3	4	0%	20%	25%	20%	6	5	4	5
		05	7	5	7	4	0%	17%	0%	20%	7	6	7	5
		07	4	9	7	6	0%	0%	0%	0%	4	9	7	6
	Hope Vale Campus of CYAAA	03	12	6	13	7	8%	25%	32%	13%	13	8	19	8
		05	13	0	13	4	0%	100%	7%	43%	13	20	14	7
		07	16	13	15	16	0%	13%	6%	0%	16	15	16	16
	Total of CYAAA	**03**	**36**	**21**	**42**	**22**	**10%**	**25%**	**16%**	**29%**	**40**	**28**	**50**	**31**
		05	**38**	**18**	**36**	**19**	**19%**	**60%**	**10%**	**27%**	**47**	**45**	**40**	**26**
		07	**40**	**31**	**42**	**39**	**15%**	**21%**	**14%**	**5%**	**47**	**39**	**49**	**41**
Spelling	Aurukun Campus of CYAAA	03	18	11	26	11	14%	27%	4%	39%	21	15	27	18
		05	23	13	16	14	15%	32%	16%	0%	27	19	19	14
		07	19	10	23	16	30%	33%	12%	16%	27	15	26	19
	Coen Campus of CYAAA	03	6	5	3	4	0%	0%	25%	20%	6	5	4	5
		05	7	6	7	4	0%	0%	0%	20%	7	6	7	5
		07	4	9	7	6	0%	0%	0%	0%	4	9	7	6
	Hope Vale Campus of CYAAA	03	12	7	16	8	8%	13%	16%	0%	13	8	19	8
		05	13	0	13	5	0%	100%	7%	29%	13	20	14	7
		07	15	14	12	14	6%	7%	25%	13%	16	15	16	16
	Total of CYAAA	**03**	**36**	**23**	**45**	**23**	**10%**	**18%**	**10%**	**26%**	**40**	**28**	**50**	**31**
		05	**43**	**19**	**36**	**23**	**9%**	**58%**	**10%**	**12%**	**47**	**45**	**40**	**26**
		07	**38**	**33**	**42**	**36**	**19%**	**15%**	**14%**	**12%**	**47**	**39**	**49**	**41**

The 2010, Year 5 Hope Vale data

The data from Hope Vale's Year 5 students that were collected in 2010 included unrealistically high NAPLAN scores. Table 23 lists all students who were in Year 5 in 2010 and in Year 7 in 2012. The majority of the students that were tested in both years showed a decrease in performance across all domains. Many of these decreases are large. This pattern in scores is strongly suggestive of an error. It is highly improbable that students would regress to this extent across two years in all domains.

Consequently, it was decided to set the 2010 Year 5 Hope Vale scores to missing and so remove these data from the analyses. As these 2010 scores were designed to be a baseline measure, this meant that: (1) cross-sectional comparisons of Year 5 between

2010 and 2012 was not possible for Hope Vale nor for the pooled CYAAA campuses, and (2) longitudinal data were unavailable for Hope Vale from Year 3 to Year 5 between 2008 and 2010 and from Year 5 to Year 7 between 2010 and 2012, nor for the pooled CYAAA data.

Table 23 Age, whether absent at test, scores and score differences for all non-exempt Hope Vale students that were in Year 5 in 2010 and in Year 7 in 2012, for each domain

NAPLAN	AGE 2010	AGE 2012	Test Absent Status 2010	Test Absent Status 2012	Scale Score 2010	Scale Score 2012	Difference
Grammar and Punctuation	9.5	11.5	Absent	Absent			
	10.2	12.2	Absent	Participant		390	
	10.1	12.1	Absent	Participant		535	
	10.5	12.5	Withdrawn	Participant		193	
	9.9	11.9	Absent	Participant		374	
	9.8	11.8	Participant	Participant	**535**	374	-161
	10.1	12.1	Participant	Participant	**640**	419	-221
	10.2	12.2	Participant	Participant	**678**	419	-260
	9.7	11.7	Participant	Participant	**608**	431	-177
	9.9	11.9	Participant	Participant	**640**	512	-128
	9.9	11.9	Participant	Participant	**514**	456	-58
	10.1	12.1	Participant	Participant	**535**	467	-68
	9.8	11.8	Participant	Participant	**557**	512	-45
	9.5	11.5	Participant	Participant	**359**	501	142
Numeracy	9.5	11.5	Absent	Participant		377	
	10.1	12.1	Absent	Participant		387	
	10.5	12.5	Withdrawn	Participant		377	
	9.9	11.9	Absent	Participant		397	
	9.8	11.8	Absent	Participant		387	
	10.2	12.2	Participant	Participant	**581**	429	-152
	10.1	12.1	Participant	Participant	**568**	421	-147
	9.5	11.5	Participant	Participant	**486**	377	-108
	10.1	12.1	Participant	Participant	**535**	450	-85
	10.2	12.2	Participant	Participant	**457**	397	-61
	9.8	11.8	Participant	Participant	**467**	429	-38
	9.9	11.9	Participant	Participant	**515**	555	40
	9.9	11.9	Participant	Participant	**333**	429	96
	9.7	11.7	Participant	Participant	**357**	573	215
Reading	9.5	11.5	Absent	Participant		440	
	10.1	12.1	Absent	Participant		394	
	10.5	12.5	Withdrawn	Participant		140	
	9.9	11.9	Absent	Participant		414	
	10.2	12.2	Participant	Participant	**538**	329	-209
	10.1	12.1	Participant	Participant	**513**	359	-154
	9.7	11.7	Participant	Participant	**477**	345	-132
	9.9	11.9	Participant	Participant	**583**	432	-151
	9.5	11.5	Participant	Participant	**525**	414	-112
	10.2	12.2	Participant	Participant	**552**	423	-129
	9.8	11.8	Participant	Participant	**538**	440	-98
	10.1	12.1	Participant	Participant	**538**	440	-98
	9.9	11.9	Participant	Participant	**409**	371	-37
	9.8	11.8	Participant	Participant	**372**	404	32
Spelling	9.5	11.5	Absent	Absent			
	10.2	12.2	Absent	Participant		351	
	10.1	12.1	Absent	Participant		421	
	10.5	12.5	Withdrawn	Participant		351	
	9.9	11.9	Absent	Participant		351	
	10.1	12.1	Participant	Participant	**516**	351	-165
	9.7	11.7	Participant	Participant	**496**	351	-145
	9.8	11.8	Participant	Participant	**526**	397	-129
	10.2	12.2	Participant	Participant	**576**	421	-155
	9.9	11.9	Participant	Participant	**516**	421	-95
	10.1	12.1	Participant	Participant	**549**	493	-56
	9.9	11.9	Participant	Participant	**526**	510	-16
	9.8	11.8	Participant	Participant	**516**	525	9
	9.5	11.5	Participant	Participant	**340**	421	82

Student background characteristics by participation status

Table 24 shows the background characteristics of participants and non-participants by year level. While the two groups do not show much difference in age or Indigenous status, gender and language background other than English, distributions differ by varying degrees across the assessment years. This indicates that summary statistics could be biased due to student non-response in certain subgroups of the population.

Table 24 Background characteristics of students by year level and absent status

Year Level	Absent Status	Average age of students				
		2008	2009	2010	2011	2012
Year 3	Absent	7.9	7.9	8.1	8.3	8.3
	Participant	7.9	7.8	8.1	8.4	8.3
Year 5	Absent	10.0	10.1	9.9	10.1	10.1
	Participant	10.0	9.9	9.9	9.9	10.1
Year 7	Absent	11.9	12.0	12.1	11.8	11.6
	Participant	12.0	12.0	12.0	12.0	12.0

Year Level	Absent Status	Percentage of boys				
		2008	2009	2010	2011	2012
Year 3	Absent	51%	70%	32%	43%	53%
	Participant	65%	45%	68%	58%	60%
Year 5	Absent	45%	52%	70%	67%	44%
	Participant	36%	41%	45%	45%	60%
Year 7	Absent	70%	71%	63%	69%	29%
	Participant	51%	52%	40%	46%	64%

Year Level		Percentage of students with LBOTE				
		2008	2009	2010	2011	2012
Year 3	Absent	100%	80%	94%	25%	88%
	Participant	97%	94%	82%	64%	86%
Year 5	Absent	96%	96%	98%	86%	100%
	Participant	98%	72%	90%	96%	82%
Year 7	Absent	100%	81%	100%	72%	100%
	Participant	93%	66%	88%	67%	90%

Year Level	Absent Status	Percentage of ATSI students				
		2008	2009	2010	2011	2012
Year 3	Absent	100%	100%	100%	100%	100%
	Participant	100%	100%	100%	100%	100%
Year 5	Absent	100%	100%	100%	100%	100%
	Participant	100%	98%	100%	100%	95%
Year 7	Absent	100%	100%	100%	100%	100%
	Participant	100%	100%	100%	98%	100%

Year Level	Absent Status	Attendance rates				
		2008	2009	2010	2011	2012
Year 3	Absent	50%	29%	83%	81%	44%
	Participant	81%	83%	86%	88%	82%
Year 5	Absent	42%	38%	75%	35%	91%
	Participant	82%	77%	84%	86%	76%
Year 7	Absent	24%	49%	53%	80%	67%
	Participant	82%	83%	82%	75%	81%

Given the possible bias in the data due to non-response, the use of plausible values for the performance of all students, including the non-respondents, was examined. Plausible values are imputed by using existing data to generate a score. These data may be student background characteristics, or other information known to be associated with achievement.

Table 6 shows that the confidence intervals for the median performance of non-respondents are often very large. (The confidence interval is the range around the median within which we are 95 per cent sure that the true median lies.) The large confidence intervals observed indicates substantial uncertainty about the estimated median performance of the students. This, in turn, indicates that we do not know enough about the non-respondents of this subpopulation to reliably draw plausible values.

Even if the confidence intervals were much smaller, the technical literature suggests that we do not know enough about how well plausible values behave for small students groups (for example, individual schools or a combination of a few small schools) such as in this study.

Given these empirical and theoretical concerns, it was decided that it was not possible to use plausible values for this small population. Non-respondents therefore had to be excluded from the analysis (which is, incidentally, consistent with the original analysis plans).

Table 25 Confidence intervals of median performance estimates for respondents and non-respondents

NAPLAN Strand	Year Level	Absent Status	Confidence intervals			Number of students		
			2010	2011	2012	2010	2011	2012
Grammar & Punctuation	03	Absent	69	92	174	5	5	8
	03	Participant	35	29	32	23	45	23
	05	Absent	104	63	194	13	4	3
	05	Participant	36	21	34	19	36	23
	07	Absent	72	33	58	6	7	5
	07	Participant	13	21	19	33	42	36
Numeracy	03	Absent	40	69	103	5	10	7
	03	Participant	49	15	20	23	40	24
	05	Absent	86	89	101	11	9	3
	05	Participant	27	17	22	19	31	23
	07	Absent	87	72	174	4	8	2
	07	Participant	7	19	15	34	41	39
Reading	03	Absent	129	85	123	7	8	9
	03	Participant	14	14	38	21	42	22
	05	Absent	51	137	161	11	4	7
	05	Participant	16	10	26	18	36	19
	07	Absent	41	130	70	8	7	2
	07	Participant	18	23	13	31	42	39
Spelling	03	Absent	85	127	182	5	5	8
	03	Participant	31	20	61	23	45	23
	05	Absent	118	117	219	13	4	3
	05	Participant	26	38	10	19	36	23
	07	Absent	74	95	61	6	7	5
	07	Participant	54	31	15	33	42	36

Results

This section of the document provides the results of the substantive analyses undertaken by ACER. They are provided to evidence ACER's argument that these data do not provide sufficient precision to be of value or use for the evaluation of the CYAAA program. Given the possible bias in these data, the following results need to be viewed and interpreted to accord with this intention.

These results should not be reported outside the context of this document.

Cross-sectional comparisons

Cross-sectional analysis compares all students that were tested in one year level over time. The median is used as a summary statistic because it is less sensitive to outliers in small numbers of observations. Hope Vale's Year 5 students were excluded from the 2010 results. Therefore, the medians of the pooled CYAAA schools are not presented for 2010. Table 26 shows the results for the pooled CYAAA students and Table 27 shows the same results for each school.

In these tables there are some small differences due to rounding errors. Where the per cent missing is equal to or greater than 20, this is shown in bold font and coloured red.

These cross-sectional analyses reveal patterns that are inconsistent in direction and in size.

Table 26 Median NAPLAN scores for all responding CYAAA students by NAPLAN strand and year level

NAPLAN	Year Level	Median performance				Number of students				Per cent missing				Difference in median between 2012 and ...		
		2009	2010*	2011	2012	2009	2010*	2011	2012	2009	2010*	2011	2012	2009	2010*	2011
Grammar & Punctuation	03	269	246	238	241	37	23	45	23	10	18	10	**26**	-28	-5	3
	05	290	*	356	295	43	19	37	23	9	**58**	10	12	5		-61
	07	391	364	379	431	38	33	42	36	19	15	14	12	40	67	52
Numeracy	03	239	245	309	246	31	23	40	24	**21**	18	20	**23**	7	1	-63
	05	351	*	368	340	37	19	32	23	**21**	**58**	**22**	12	-11		-28
	07	408	420	415	414	41	34	41	39	13	11	16	5	6	-6	-1
Reading	03	264	306	292	253	37	21	42	22	10	**25**	16	**29**	-11	-53	-39
	05	344	*	372	336	38	18	37	19	19	**60**	10	**27**	-8		-36
	07	413	417	426	414	40	31	42	39	15	**21**	14	5	1	-3	-12
Spelling	03	228	226	280	262	37	23	45	23	10	18	10	**26**	34	36	-18
	05	299	*	377	340	43	19	37	23	9	**58**	10	12	41		-37
	07	401	418	416	421	38	33	42	36	19	15	14	12	20	3	5

**Hope Vale's Year 5 students are excluded from the 2010 data.*

Table 27 Median NAPLAN scores in each CYAAA campus by NAPLAN strand and year level

Centre Name	NAPLAN	Year Level	Median performance				Number of students				Per cent missing				Difference in median between 2012 and ...		
			2009	2010	2011	2012	2009	2010	2011	2012	2009	2010	2011	2012	2009	2010	2011
Aurukun Campus of CYAAA	Grammar & Punctuation	03	261	224	267	262	18	11	26	11	14	27	4	39	1	39	-5
		05	272	337	331	272	23	13	16	14	15	32	16	0	0	-65	-60
		07	336	314	379	412	19	10	23	16	30	33	12	16	75	97	33
	Numeracy	03	223	212	297	246	15	11	23	13	29	27	15	28	23	34	-50
		05	338	290	368	328	18	14	14	14	33	26	26	0	-10	38	-40
		07	408	407	398	405	21	11	20	17	22	27	23	11	-2	-2	8
	Reading	03	250	293	299	246	18	11	26	11	14	27	4	39	-5	-47	-53
		05	317	332	354	323	18	13	16	11	33	32	16	21	6	-9	-31
		07	396	417	422	414	20	9	20	17	26	40	23	11	18	-4	-9
	Spelling	03	228	226	280	232	18	11	26	11	14	27	4	39	4	6	-48
		05	299	297	350	313	23	13	16	14	15	32	16	0	15	17	-37
		07	305	370	416	397	19	10	23	16	30	33	12	16	93	28	-18
Coen Campus of CYAAA	Grammar & Punctuation	03	269	164	238	375	7	5	3	4	0	0	25	20	106	211	137
		05	335	313	400	505	7	6	7	4	0	0	0	20	170	192	105
		07	420	406	394	450	4	9	7	6	0	0	0	0	29	44	56
	Numeracy	03	230	285	296	339	6	5	2	4	0	0	50	20	109	53	43
		05	375	320	335	393	7	5	6	5	0	17	14	0	18	73	58
		07	466	438	422	446	4	9	7	6	0	0	0	0	-20	9	24
	Reading	03	290	299	305	407	7	4	3	4	0	20	25	20	117	107	101
		05	356	332	384	470	7	5	7	4	0	17	0	20	114	139	87
		07	400	448	441	418	4	9	7	6	0	0	0	0	18	-30	-23
	Spelling	03	277	293	234	331	7	5	3	4	0	0	25	20	54	37	96
		05	412	340	427	511	7	6	7	4	0	0	0	20	100	171	84
		07	499	527	482	480	4	9	7	6	0	0	0	0	-20	-47	-3
Hope Vale Campus of CYAAA	Grammar & Punctuation	03	282	266	8[54]	-24[55]	12	7	16	8	8	13	16	0	-307	-290	-33
		05	306		371	316	13		14	5	0	100	7	29	9		-56
		07	415	396	363	443	15	14	12	14	6	7	25	13	29	48	81
	Numeracy	03	276	285	309	213	10	7	15	7	17	13	21	13	-63	-72	-96
		05	375		385	333	12		12	4	8	100	20	43	-42		-52
		07	431	412	419	405	16	14	14	16	0	0	13	0	-26	-6	-13
	Reading	03	283	313	263	246	12	6	13	7	8	25	32	13	-38	-67	-18
		05	356		372	330	13		14	4	0	100	7	43	-26		-42
		07	422	409	418	414	16	13	15	16	0	13	6	0	-8	5	-5
	Spelling	03	228	226	234	274	12	7	16	8	8	13	16	0	45	47	39
		05	344		388	264	13		14	5	0	100	7	29	-80		-123
		07	499	418	394	421	15	14	12	14	6	7	25	13	-78	4	28

54 55

54 Of the 16 students in Year 3, nine had a score of 8. The other seven students scored between 103 and 408. A score of 8 was possibly assigned to students without any correct responses. This suggests the NAPLAN test may not be targeted very well for Year 3 students in this school.

55 Five of the eight students had a score of -24, the other eight scored between 193 and 399. A score of -24 was possibly assigned to students without any correct responses. This suggests the NAPLAN test may not be targeted very well for Year 3 students in this school.

Longitudinal comparisons

Longitudinal analyses only include students that received NAPLAN scores and attended a CYAAA campus in two adjacent assessment years. These analyses are only performed within each CYAAA campus, because of the exclusion of Hope Vale's Year 5 students in 2010.

Two measures of growth were used:

- the median of the individual differences between NAPLAN scores in the two assessment years
- percentage of students that grew at least as much as 84 per cent of the students in Queensland government schools with the same ability at the first of the two adjacent assessment years. This second growth measure is called 'relative gain'. The average growth in Queensland government schools of students with equal performance at the first assessment is zero. Scores -1 and +1 are one standard deviation below and above the average, respectively. Therefore, 50 per cent of the Queensland students in government schools have a score of 0 or over, 84 per cent a score of -1 or over and 16 per cent a score of 1 or over. Given the relatively low performance these schools appear to show, a threshold of 84 per cent was chosen (one standard deviation below the mean).

The two growth measures are presented before the implementation of CYAAA (from 2008 to 2010 and from 2009 to 2011) and after implementation (from 2010 to 2012). The analyses explore the extent to which students have grown after implementation compared with before the program's implementation. The results are shown in Table 28 and Table 29. In these tables, percentage of students with a relative gain more than -1 is shown on the far right hand side. These percentages need to be treated with extreme caution because of the small numbers from which they are derived. For example in Table 28, 80 per cent of students showed a relative gain of more than -1 between 2008 and 2010. This 80 per cent represents four out of five students.

To further assist in the reading of the information in these Tables, Figure 1 and Figure 2 were prepared. These graphs give a more detailed picture of the distribution of individual growth scores. The histograms show the number of students by relative gain score. The orange line shown on these graphs represents the point at which there is a relative gain score of -1 (the amount of growth shown by 84 per cent of students in Queensland government schools).

These tables and graphs do not show any discernible patterns that would provide a basis for concluding that the CYAAA program has or has not had an impact on student achievement as measured by NAPLAN. Had the results pointed consistently one way or another, then the concerns about the small numbers available for the analyses, and the amount of missing data, may have supported a (heavily) qualified judgement about the program's impact. Such consistency is not apparent in these data.

Table 28 Growth between Year 3 and Year 5

Year 3 to Year 5		Number of students			1) Median of differences in scale scores			2) % Relative gain more than -1		
		08-10	09-11	10-12	08-10	09-11	10-12	08-10	09-11	10-12
Aurukun	GP	5	16	9	144	69	48	80	69	22
	NMCY	4	13	10	47	144	108	0	92	40
	READ	10	16	7	311	104	34	80	75	29
	SPEL	5	16	9	111	122	87	100	100	56
Coen	GP	5	6	3	120	66	259	40	67	100
	NMCY	5	6	4	77	86	95	40	17	100
	READ	5	6	3	152	88	104	60	83	100
	SPEL	5	6	3	111	97	197	80	100	100
Hope Vale	GP		10	3		37	29		40	33
	NMCY		6	2		89	48		33	0
	READ		10	2		76	57		80	50
	SPEL		10	3		88	38		90	33

Table 29 Growth between Year 5 and Year 7

Year 5 to Year 7		Number of students			1) Median of differences in scale scores			2) % Relative gain more than -1		
		08-10	09-11	10-12	08-10	09-11	10-12	08-10	09-11	10-12
Aurukun	GP	4	18	10	43	107	98	75	67	40
	NMCY	4	13	12	62	60	113	25	38	67
	READ	4	14	10	94	101	81	75	71	80
	SPEL	4	18	10	73	65	101	75	100	100
Coen	GP	6	4	6	5	70	130	33	50	83
	NMCY	6	4	5	46	59	123	33	75	100
	READ	6	4	5	70	78	82	50	75	100
	SPEL	6	4	6	82	47	126	100	75	100
Hope Vale	GP	10	10		70	21		80	20	
	NMCY	11	10		68	49		36	50	
	READ	10	11		75	60		40	45	
	SPEL	10	10		80	62		80	80	

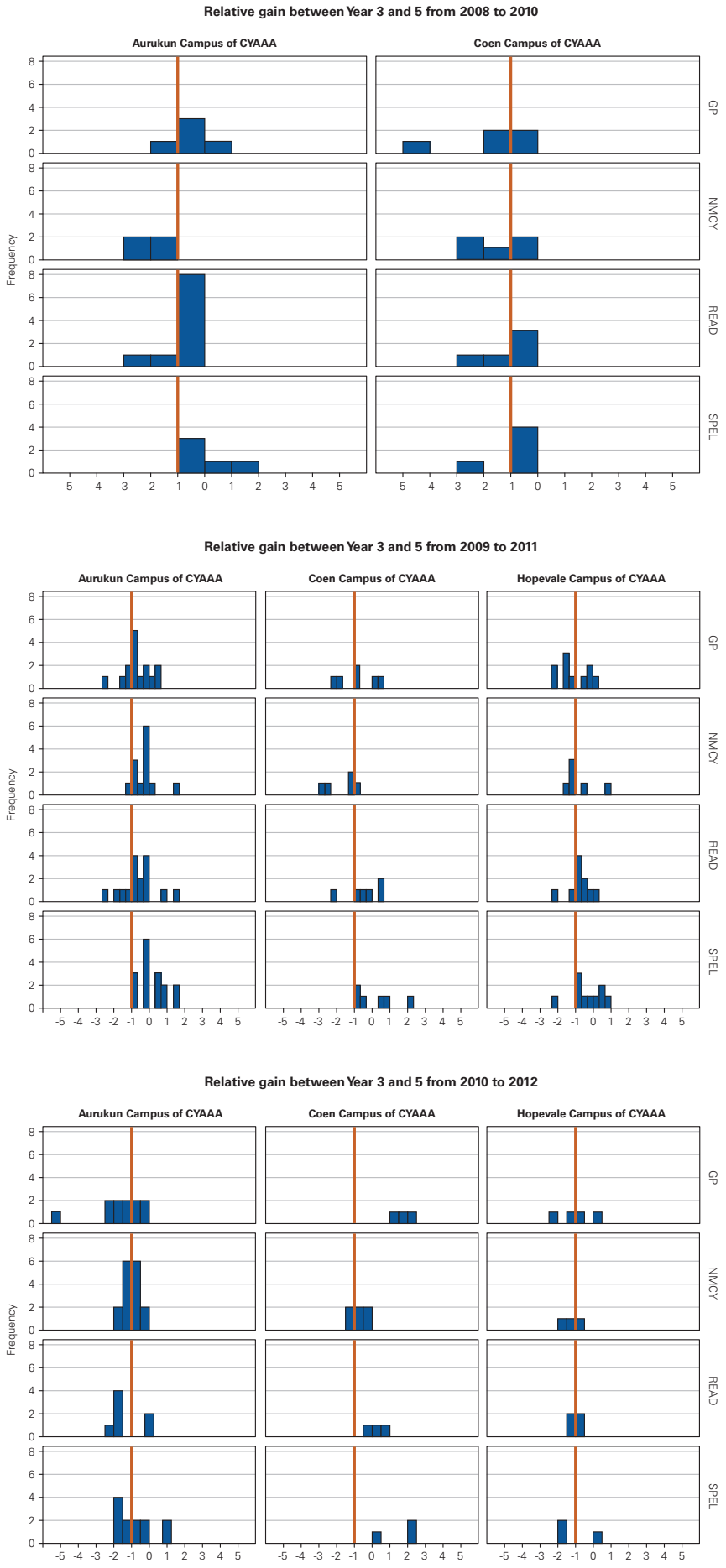

Figure 1 Distribution of individual growth scores showing the number of students by relative gain score for Years 3 to 5

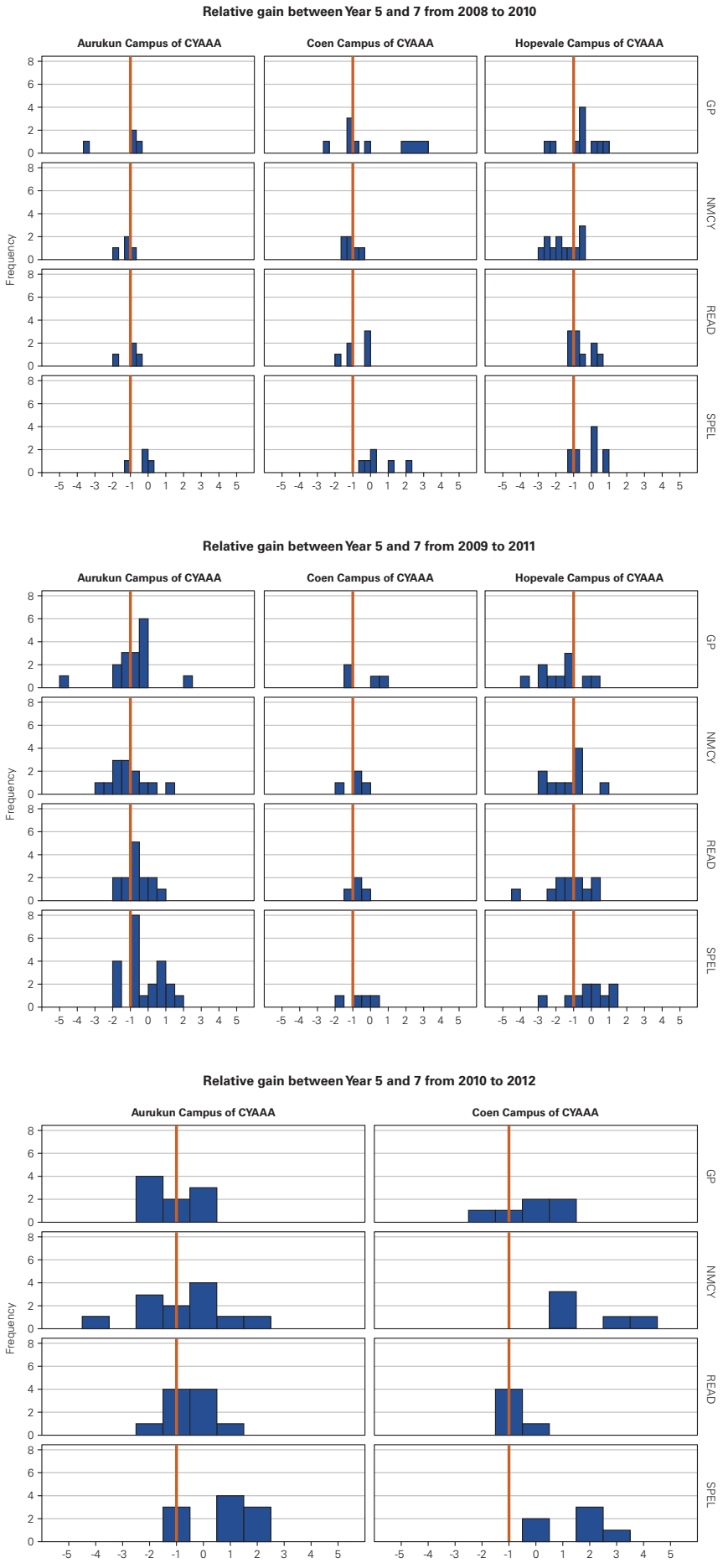

Figure 2 Distribution of individual growth scores showing the number of students by relative gain score for Years 5 to 7

Appendix 4: PAT-M and PAT-R testing data of CYAAA campuses

The Australian Council for Educational Research's (ACER) Progressive Achievement Tests in mathematics (PAT-M) and in reading (PAT-R) were administered at CYAAA campuses at the beginning and the end of 2011 and 2012. PAT-M consists of two subtests: *I can do maths* for Prep to Year 2 (Prep was only tested at the end of the school year) and mathematics for Year 3 and above. The PAT-R test consists of three subtests: comprehension (all year levels, except Prep at the beginning of the school year), spelling (Year 3 and above) and vocabulary (Year 4 and above). The tests were administered by school staff, while the student responses were scored at ACER.

The data files received for this study included 466 students from CYAAA campuses. The total number of enrolled students at each of the four assessment periods was about 360 to 370 students. The official enrolment figures from DETE were higher by between 50 and 90 students. The counts in Hope Vale in 2011 and in Aurukun in 2011 and 2012 were well below the official statistics. Some of these students may have been enrolled for only part of the year, others may have been mostly absent. The difference between these counts suggest that the number of non-respondents (students that were enrolled but were not tested), and hence the percentage of missing values, is possibly underestimated here.

Table 30 presents the total number of students assessed (respondents), the percentage of missing values (non-respondents) and the total number of students in the data. The totals for each PAT test show that 16 to 74 per cent of the students did not respond to each test and that for most assessments more than 20 per cent of the data was missing. As with the NAPLAN data, these percentages are regarded as high and suggest that there may be a bias in the data if non-response was not at random.

To create a more detailed picture, the numbers of responding and non-responding students were also counted by school and by year level. The purpose of these counts was not to select subgroups of students that could be used for the evaluation of the CYAAA program, because the purpose of this report is firstly to examine the full population and only secondly to look at the effect of the CYAAA Initiative within subgroups (if the data allows). Table 30 shows that Aurukun showed the highest levels of missing values in most instances, closely followed by Hope Vale, except for the spelling subtest where Hope Vale showed the highest level of missing values. Coen generally had acceptable levels of missing values, but Coen is a much smaller school than the other two (about ten per cent of all the students are in Coen).

Table 30 Number of students assessed, percentage of non-respondents and total number of students for each PAT test, overall, by school and by year level

		Number of students assessed				Percentage missing values				Total number of students			
		2011		2012		2011		2012		2011		2012	
		Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
Comprehension	**TOTAL**	**222**	**279**	**174**	**301**	**28%**	**22%**	**44%**	**19%**	**308**	**357**	**308**	**370**
	Aurukun	114	137	64	147	**31%**	**28%**	**62%**	**23%**	165	190	169	192
	Coen	29	39	33	50	9%	7%	8%	6%	32	42	36	53
	Hope Vale	79	103	77	104	**29%**	18%	**25%**	17%	111	125	103	125
	Year 0		48		50		6%		12%	0	51	0	57
	Year 1	49	53	21	43	18%	18%	**58%**	14%	60	65	50	50
	Year 2	26	30	12	43	**24%**	14%	**81%**	**32%**	34	35	63	63
	Year 3	21	37	21	30	**59%**	**29%**	**36%**	17%	51	52	33	36
	Year 4	23	18	39	45	15%	**22%**	**20%**	10%	27	23	49	50
	Year 5	36	33	19	23	16%	20%	**27%**	18%	43	41	26	28
	Year 6	34	34	28	29	**24%**	**24%**	**24%**	19%	45	45	37	36
	Year 7	33	26	34	38	**27%**	**38%**	**21%**	12%	45	42	43	43
Mathematics	**TOTAL**	**163**	**151**	**130**	**157**	**24%**	**27%**	**33%**	**22%**	**214**	**206**	**195**	**200**
	Aurukun	80	70	59	85	**25%**	**33%**	**43%**	18%	107	104	103	104
	Coen	23	25	23	24	15%	11%	12%	11%	27	28	26	27
	Hope Vale	60	56	48	48	**25%**	**24%**	**27%**	**30%**	80	74	66	69
	Year 3	38	39	13	29	**25%**	**25%**	**61%**	19%	51	52	33	36
	Year 4	21	19	36	40	**22%**	17%	**27%**	20%	27	23	49	50
	Year 5	34	33	19	23	**21%**	20%	**27%**	18%	43	41	26	28
	Year 6	38	34	29	28	16%	**24%**	**22%**	**22%**	45	45	37	36
	Year 7	32	26	33	37	**29%**	**38%**	**23%**	14%	45	42	43	43
I can do maths	**TOTAL**	**25**	**78**	**65**	**149**	**74%**	**49%**	**46%**	**16%**	**97**	**154**	**120**	**177**
	Aurukun	12	40	32	71	**79%**	**53%**	**54%**	**22%**	58	86	69	91
	Coen	3	9	9	25	**40%**	**36%**	10%	4%	5	14	10	26
	Hope Vale	10	29	24	53	**71%**	**46%**	**41%**	12%	34	54	41	60
	Year 0		1		54		**98%**		5%	0	51	0	57
	Year 1	0	51	17	42	**100%**	**22%**	**66%**	16%	60	65	50	50
	Year 2	25	26	48	53	**26%**	**26%**	**24%**	16%	34	35	63	63
Spelling	**TOTAL**	**164**	**139**	**96**	**157**	**23%**	**33%**	**51%**	**22%**	**214**	**206**	**195**	**200**
	Aurukun	82	68	72	88	**23%**	**35%**	**30%**	15%	107	104	103	104
	Coen	25	25	23	23	7%	11%	12%	15%	27	28	26	27
	Hope Vale	57	46	1	46	**29%**	**38%**	**98%**	**33%**	80	74	66	69
	Year 3	38	33	17	30	**25%**	**37%**	**48%**	17%	51	52	33	36
	Year 4	23	20	25	36	15%	13%	**49%**	**28%**	27	23	49	50
	Year 5	36	32	14	23	16%	**22%**	**46%**	18%	43	41	26	28
	Year 6	35	30	17	29	**22%**	**33%**	**54%**	19%	45	45	37	36
	Year 7	32	24	23	39	**29%**	**43%**	**47%**	9%	45	42	43	43
Vocabulary	**TOTAL**	**114**	**107**	**111**	**133**	**30%**	**31%**	**31%**	**19%**	**163**	**154**	**162**	**164**
	Aurukun	52	46	49	71	**34%**	**39%**	**41%**	14%	79	76	83	83
	Coen	20	21	19	20	13%	13%	10%	9%	23	24	21	22
	Hope Vale	42	40	43	42	**31%**	**26%**	**26%**	**29%**	61	54	58	59
	Year 4	16	18	32	43	**41%**	**22%**	**35%**	14%	27	23	49	50
	Year 5	34	32	19	22	**21%**	**22%**	**27%**	**21%**	43	41	26	28
	Year 6	35	33	28	29	**22%**	**27%**	**24%**	19%	45	45	37	36
	Year 7	29	24	32	39	**36%**	**43%**	**26%**	9%	45	42	43	43

Given the high levels of missing values in the PAT data, the respondents and the non-respondents were compared on two student characteristics. If non-response was at random, the two groups would be expected to be fairly similar on these characteristics; if non-response was not at random the two groups will differ. The second case would be an indication of a bias in the available data. The two characteristics used were sex and attendance rates. The attendance data was supplied by CYAAA. Average attendance rates were computed for each term. For these analyses, attendance rates were averaged over Terms 1 and 2 to compare respondent groups at the beginning of each assessment year and attendance rates were averaged over Terms 3 and 4 to compare respondent groups at the end of each assessment year. Table 31 shows the percentage of boys in each group by subtest of the PAT. Generally, the percentage of boys were somewhat higher in the non-respondent group than in the respondent group, except for in the *I can do maths* subtest.

Table 31 Percentage of boys among respondents and non-respondents

	Percentage of boys			
	2011		2012	
	Begin	End	Begin	End
Comprehension				
Non-Respondents	.58	.54	.50	.56
Respondents	.49	.48	.51	.51
Mathematics				
Non-Respondents	.62	.51	.68	.62
Respondents	.50	.54	.49	.52
I can do maths				
Non-Respondents	.51	.42	.42	.50
Respondents	.48	.49	.45	.51
Spelling				
Non-Respondents	.66	.55	.59	.64
Respondents	.48	.52	.52	.51
Vocabulary				
Non-Respondents	.63	.53	.63	.67
Respondents	.45	.50	.51	.51

In addition, Table 32 shows that the attendance rates of the non-respondents were lower than those of the respondents. The difference was largest at the end of each assessment year. The non-respondents attended school half as often as the respondents for some subtests.

Table 32 Median attendance rates for respondents and non-respondents

	Median attendance rate			
	2011		2012	
	Begin	End	Begin	End
Comprehension				
Non-Respondents	80	50	71	38
Respondents	88	82	85	75
Mathematics				
Non-Respondents	75	52	70	43
Respondents	87	84	85	80
I can do maths				
Non-Respondents	80	68	70	34
Respondents	91	83	82	71
Spelling				
Non-Respondents	78	53	82	45
Respondents	87	85	81	79
Vocabulary				
Non-Respondents	75	53	71	39
Respondents	87	84	85	80

These results suggest that the students with PAT test scores were not representative of the full CYAAA population. Therefore, changes over time were not tested for significance. Cross-sectional results are presented in Table 33, but no conclusions about the effectiveness of the CYAAA Initiative should be drawn from them.

Table 33 PAT-R and PAT-M median scores over time, overall, by school and by year level

		Median score				Number of respondents			
		2011		2012		2011		2012	
		Begin	End	Begin	End	Begin	End	Begin	End
Comprehension	**TOTAL**	**88**	**85**	**93**	**86**	**222**	**279**	**174**	**301**
	Aurukun	83	80	96	85	114	137	64	147
	Coen	100	97	98	94	29	39	33	50
	Hope Vale	90	80	90	83	79	103	77	104
	Year 0		58		54	0	48	0	50
	Year 1	52	65	52	60	49	53	21	43
	Year 2	70	80	69	77	26	30	12	43
	Year 3	85	85	80	83	21	37	21	30
	Year 4	86	92	88	92	23	18	39	45
	Year 5	99	101	95	99	36	33	19	23
	Year 6	101	105	106	107	34	34	28	29
	Year 7	103	110	108	107	33	26	34	38
Mathematics	**TOTAL**	**26**	**31**	**28**	**27**	**163**	**151**	**130**	**157**
	Aurukun	25	28	25	23	80	70	59	85
	Coen	30	35	36	32	23	25	23	24
	Hope Vale	27	34	30	31	60	56	48	48
	Year 3	12	20	14	12	38	39	13	29
	Year 4	25	24	19	19	21	19	36	40
	Year 5	26	31	26	26	34	33	19	23
	Year 6	30	33	34	34	38	34	29	28
	Year 7	35	38	36	35	32	26	33	37
I can do maths	**TOTAL**	**10**	**9**	**4**	**6**	**25**	**78**	**65**	**149**
	Aurukun	4	3	4	6	12	40	32	71
	Coen	15	21	10	6	3	9	9	25
	Hope Vale	15	15	4	6	10	29	24	53
	Year 0		19		2	0	1	0	54
	Year 1		6	-1	5	0	51	17	42
	Year 2	10	18	6	9	25	26	48	53
Spelling	**TOTAL**	**68**	**80**	**79**	**87**	**164**	**139**	**96**	**157**
	Aurukun	68	78	75	86	82	68	72	88
	Coen	92	100	110	117	25	25	23	23
	Hope Vale	75	78	134	80	57	46	1	46
	Year 3	33	63	58	68	38	33	17	30
	Year 4	54	73	75	75	23	20	25	36
	Year 5	74	100	77	83	36	32	14	23
	Year 6	68	96	79	113	35	30	17	29
	Year 7	95	111	104	111	32	24	23	39
Vocabulary	**TOTAL**	**95**	**100**	**98**	**98**	**114**	**107**	**111**	**133**
	Aurukun	94	94	95	93	52	46	49	71
	Coen	100	106	106	107	20	21	19	20
	Hope Vale	95	100	101	102	42	40	43	42
	Year 4	86	89	91	89	16	18	32	43
	Year 5	92	96	89	94	34	32	19	22
	Year 6	94	98	99	98	35	33	28	29
	Year 7	107	106	109	109	29	24	32	39

Appendix 5: DIBELS testing data of CYAAA campuses

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of procedures and measures for assessing the acquisition of early literacy skills from kindergarten through sixth grade. They are designed to be short (one minute) fluency measures used to regularly monitor the development of early literacy and early reading skills. When used as recommended, the results can be used to evaluate individual student development as well as provide grade-level feedback toward validated instructional objectives.

The DIBELS measures were specifically designed to assess the Big Ideas of early literacy: *Phonological Awareness, Alphabetic Principle, Fluency with Connected Text, Vocabulary*, and *Comprehension*. The measures are linked to one another, both psychometrically and theoretically, and have been found to be predictive of later reading proficiency.

Some DIBELS subtests were administered in the three CYAAA schools three times a year by school staff and CYAAA is responsible for scoring the data. ACER received the data (after scoring) for analysis. The database comprised scores on four scales:

- Phonetic Segmentation Fluency (PSF); observed score from 0 to 72
- DIBELS Oral Reading Fluency - Accuracy; observed scale from 0 to 1
- DIBELS Oral Reading Fluency - Words Correct Per Minute; observed scale from 0 to 178
- Daze; observed scale from 0 to 60

Accuracy, Words Correct and PSF have been administered since the middle of 2010 in Aurukun and Coen and since the start of 2011 in Hope Vale. Daze have been administered since the middle of 2011 in all three schools. The last assessment included for this report was the middle of 2012.[56] Accuracy and Words Correct was used to assess students from Year 1 to Year 7, Daze from Year 3 to Year 7 and PSF from Prep to Year 1.

The following section describes the completeness of the DIBELS data.

Students

In total, the data base included 502 student records, of which 253 were from Aurukun, 78 from Coen and 171 from Hope Vale. The breakdown of the number of students by assessment, by school, reading program and year level is presented for each of the four tests in Table 34 to Table 37. These tables also show how many of the students were assessed and the percentage of the data that were missing. Percentages over 20 are bolded and shown in red font.

Roughly the same number of students were attending Year 3, Year 5 and Year 7 as in the NAPLAN data, which indicates that all or almost all students were included in the database. There was some fluctuation in the total numbers within school years. For example, at the beginning of 2012, 137 Year 1 to Year 7 students were included from Aurukun, while this number increased to 157 students in the middle of 2012. The reasons for these fluctuations are unknown. Some students may have enrolled later in the year and some students may have been absent most of the first term. However, given the resemblance to the number of students in the NAPLAN data and given the relatively small fluctuation of the total number of students within school years, the data set seems complete enough for a missing values analysis, that is, to analyse the extent in which students were and were not tested and to examine if these two groups of students differ systematically in some background characteristics, which would suggest a bias in the data.

Table 34 through to Table 37 show that more than 20 per cent of all students were not assessed during the first two assessment times of each test (49 and 42 per cent for the ACCURACY test in 2010, 20 and 39% for the Daze test in 2011, 48 and 41 per cent for the DORF test in 2010 and 37 and 55 per cent for the PSF test in 2010). The ACCURACY and DORF test had also more than 20 per cent of missing values in the first assessment of 2012 and PSF had more than 20 per cent of missing values in all assessments. Missing data occurred in all three schools.

56 Although the test data of the end of 2012 was provided by DETE to ACER, some anomalies were found and CYAAA wished to clean the data. These analyses were undertaken before the cleaned data were received (they were submitted on 19 March 2013). It was decided that the data of the end of 2012 would not alter the conclusions of this report. It was confirmed by CYAAA that the data up to the middle of 2012 did not have errors (14 March 2013).

Table 34 PSF test response rates

	Number of students assessed							Per cent missing							Total number of students						
	2010		2011			2012		2010		2011			2012		2010		2011			2012	
Group	Mid	End	Begin	Mid	End	Begin	Mid	Mid	End	Begin	Mid	End	Begin	Mid	Mid	End	Begin	Mid	End	Begin	Mid
All Students	29	20	48	42	41	38	49	37	55	23	21	21	24	23	46	44	62	53	52	50	64
By school																					
Aurukun	25	18	31	20	21	15	19	39	56	21	29	19	40	27	41	41	39	28	26	25	26
Coen	4	2	4	5	6	5	10	20	33	0	0	0	0	29	5	3	4	5	6	5	14
Hope Vale			13	17	14	18	20			32	15	30	10	17			19	20	20	20	24
By reading program																					
Not enrolled					1							0							1		
Sigs 1			2	2	2	3	1			0	0	0	0	0			2	2	2	3	1
Sigs K	29	20	46	40	38	35	48	37	55	23	20	22	26	24	46	44	60	50	49	47	63
By year level																					
Prep Year	29	20		42	41		49	37	55		18	21		23	46	44		51	52		64
Year 1			48			38				23			24				62			50	

Table 35 Accuracy test response rates

	Number of students assessed							Per cent missing							Total number of students						
	2010		2011			2012		2010		2011			2012		2010		2011			2012	
Group	Mid	End	Begin	Mid	End	Begin	Mid	Mid	End	Begin	Mid	End	Begin	Mid	Mid	End	Begin	Mid	End	Begin	Mid
All Students	90	107	202	248	246	157	259	49	41	18	17	19	36	11	175	181	247	299	302	247	292
By school																					
Aurukun	61	72	104	130	133	64	135	54	49	18	19	18	53	14	134	141	127	161	163	137	157
Coen	29	35	27	33	35	28	35	29	13	13	6	5	7	3	41	40	31	35	37	30	36
Hope Vale			71	85	78	65	89			20	17	24	19	10			89	103	102	80	99
By reading program																					
Dec A	5	10					1	71	41					50	17	17					2
Dec B1	10	13	22	24	21			47	38	24	8	16			19	21	29	26	25		
Dec B2	15	16	26	23	27			32	24	21	26	10			22	21	33	31	30		
Dec C			4	3	3					0	25	40					4	4	5		
Sigs 1	3	6	67	71	71	68	96	57	14	12	7	8	33	5	7	7	76	76	77	101	101
Sigs 2	1	1	1	2	2	23	24	0	0	0	0	0	4	4	1	1	1	2	2	24	25
Sigs 3			8	7	6	20	23			0	13	25	17	4			8	8	8	24	24
Sigs 4			3	3	3	9	9			0	0	0	0	0			3	3	3	9	9
Sigs 5	3	4				2	2	25	0				0	0	4	4				2	2
Sigs K	53	55	71	113	111	34	104	50	48	23	23	26	60	19	105	106	92	147	149	84	129
Trans					1	1						0	0						1	1	
By year level																					
Year 1	19	7		50	53		45	17	72		17	17		8	23	25		60	64		49
Year 2	18	21	32	28	31	23	43	40	34	11	26	14	62	26	30	32	36	38	36	61	58
Year 3	14	14	48	48	42	19	31	22	13	6	8	18	41	9	18	16	51	52	51	32	34
Year 4	13	18	22	19	20	33	45	54	33	19	21	13	35	8	28	27	27	24	23	51	49
Year 5	8	19	37	34	33	20	25	68	24	16	13	18	17	7	25	25	44	39	40	24	27
Year 6	8	14	40	37	36	28	33	72	56	11	14	20	24	3	29	32	45	43	45	37	34
Year 7	10	14	23	32	31	34	37	55	42	48	26	28	19	10	22	24	44	43	43	42	41

Table 36 Words Correct test response rates

	Number of students assessed							Per cent missing							Total number of students						
	2010		2011			2012		2010		2011			2012		2010		2011			2012	
Group	Mid	End	Begin	Mid	End	Begin	Mid	Mid	End	Begin	Mid	End	Begin	Mid	Mid	End	Begin	Mid	End	Begin	Mid
All Students	91	107	202	249	246	157	260	48	41	18	17	19	36	11	175	181	247	299	302	247	292
By school																					
Aurukun	62	72	104	130	133	64	135	54	49	18	19	18	53	14	134	141	127	161	163	137	157
Coen	29	35	27	33	35	28	35	29	13	13	6	5	7	3	41	40	31	35	37	30	36
Hope Vale			71	86	78	65	90			20	17	24	19	9			89	103	102	80	99
By reading program																					
Dec A	5	10					1	71	41					50	17	17					2
Dec B1	10	13	22	24	21			47	38	24	8	16			19	21	29	26	25		
Dec B2	15	16	26	23	27			32	24	21	26	10			22	21	33	31	30		
Dec C			4	3	3					0	25	40					4	4	5		
Sigs 1	3	6	67	71	71	68	96	57	14	12	7	8	33	5	7	7	76	76	77	101	101
Sigs 2	1	1	1	2	2	23	24	0	0	0	0	0	4	4	1	1	1	2	2	24	25
Sigs 3			8	7	6	20	23			0	13	25	17	4			8	8	8	24	24
Sigs 4			3	3	3	9	9			0	0	0	0	0			3	3	3	9	9
Sigs 5	3	4				2	2	25	0				0	0	4	4				2	2
Sigs K	54	55	71	114	111	34	105	49	48	23	22	26	60	19	105	106	92	147	149	84	129
Trans					1	1						0	0						1	1	
By year level																					
Year 1	19	7		50	53		45	17	72		17	17		8	23	25		60	64		49
Year 2	19	21	32	28	31	23	44	37	34	11	26	14	62	24	30	32	36	38	36	61	58
Year 3	14	14	48	48	42	19	31	22	13	6	8	18	41	9	18	16	51	52	51	32	34
Year 4	13	18	22	20	20	33	45	54	33	19	17	13	35	8	28	27	27	24	23	51	49
Year 5	8	19	37	34	33	20	25	68	24	16	13	18	17	7	25	25	44	39	40	24	27
Year 6	8	14	40	37	36	28	33	72	56	11	14	20	24	3	29	32	45	43	45	37	34
Year 7	10	14	23	32	31	34	37	55	42	48	26	28	19	10	22	24	44	43	43	42	41

Table 37 Daze test response rates

	Number of students assessed				Per cent missing				Total number of students			
	2011		2012		2011		2012		2011		2012	
Group	Mid	End	Begin	Mid	Mid	End	Begin	Mid	Mid	End	Begin	Mid
All Students	151	118	152	164	**20**	**39**	16	12	189	195	181	186
By school												
Aurukun	94	40	73	83	8	**59**	**24**	15	102	97	96	98
Coen	26	28	23	28	7	3	4	0	28	29	24	28
Hope Vale	31	50	56	53	**47**	**28**	8	12	59	69	61	60
By reading program												
Dec A			2	1			0	**50**			2	2
Dec B1	16	22			**36**	12			25	25		
Dec B2	25	22			7	**21**			27	28		
Dec C	3	3			0	**40**			3	5		
Sigs 1	57	38	72	77	7	**38**	16	14	61	61	86	90
Sigs 2	1	1	18	23	0	0	**22**	4	1	1	23	24
Sigs 3	6	7	22	23	**25**	13	4	4	8	8	23	24
Sigs 4	3	3	9	9	0	0	0	0	3	3	9	9
Sigs 5			2	2			0	0			2	2
Sigs K	40	22	26	29	**33**	**65**	**26**	17	60	62	35	35
Trans			1				0				1	
By year level												
Year 3	41	16	25	28	16	**69**	**22**	18	49	51	32	34
Year 4	13	18	42	42	**46**	**22**	13	16	24	23	48	50
Year 5	31	30	18	23	**21**	**25**	**25**	15	39	40	24	27
Year 6	30	27	27	33	**23**	**29**	**23**	3	39	38	35	34
Year 7	36	27	40	38	5	**37**	5	7	38	43	42	41

Since these percentages are high, a missing value analysis was undertaken to examine if the 'missingness' was random or if the non-respondents were systematically different from the respondents and if there were changes over time. Student's gender and attendance rate were the student characteristics that were examined. Students attendance rates were available for each term. They were averaged within a year for these analyses.

Table 38 Percentage of boys in respondents and non-respondents on each test of the DIBELS

	2010		2011			2012	
	Mid	End	Begin	Mid	End	Begin	Mid
PSF							
Non-respondents	.35	.38	.50	.36	.18	.50	.60
Respondents	.45	.48	.48	.43	.46	.39	.63
Accuracy							
Non-respondents	.54	.59	.65	.56	.62	.49	.66
Respondents	.48	.45	.50	.50	.49	.54	.50
Words Correct							
Non-respondents	.54	.59	.65	.55	.62	.49	.65
Respondents	.49	.45	.50	.50	.49	.54	.50
Daze							
Non-respondents				.63	.54	.58	.67
Respondents				.47	.54	.52	.52

Table 38 shows that the percentage of boys was generally higher in the non-respondent than in the respondent group. This difference is consistent over time. Only the PSF test shows changes over time in percentage of boys. These results suggest that the available data are somewhat biased in gender distribution.

Table 39 presents the median attendance rates of the respondents and non respondents for each DIBELS subtest over time. The respondents showed consistently higher attendance rates than the non-respondents. The difference in median attendance rate varied over time.

Table 39 Median attendance rates of respondents and non-respondents on each test of the DIBELS

	2010		2011			2012	
	Mid	End	Begin	Mid	End	Begin	Mid
PSF							
Non-respondents	40	52	58	55	55	79	35
Respondents	66	62	86	77	80	74	80
Accuracy							
Non-respondents	54	59	68	56	49	67	39
Respondents	84	82	84	85	85	83	79
Words Correct							
Non-respondents	54	59	68	57	49	67	38
Respondents	84	82	84	85	85	83	79
Daze							
Non-respondents				75	69	61	62
Respondents				84	87	81	81

Conclusion DIBELS test data

Given the high level of missing values in the DIBELS data and the reported differences in gender and attendance distributions between the respondents and non-respondents, these data are unsuitable for evaluating the effectiveness of CYAAA Initiative. The students with test scores were not representative of the full CYAAA population and would not give an accurate picture of overall changes in student performance.

In addition, DIBELS data were collected and scored by CYAAA staff, not by an independent research centre. As a consequence, the DIBELS data were only ever regarded as support to the NAPLAN and the PAT data. However, both these data sources showed similar levels of non-response and bias and were also found to be not representative of the full CYAAA population.

The following three tables show some cross-sectional results using the DIBELS test data. Given the absence of quality control regarding the test administration and the scoring of the student responses, the high levels of missing data and the likely bias in the data, *ACER does not support any conclusions regarding the effectiveness of the educational program that might be drawn from these tables*.

Because of these uncertainties in the data, standard errors were not estimated, so there is no information about the uncertainty in the estimated values in the tables, and differences were not tested for statistical significance. In addition, percentages of missing values and differences between respondents and non-respondents need to be kept in mind when interpreting the results. For example, while there seems to be an improvement in Accuracy between the beginning of 2011 and the beginning of 2012, there was also an increase in missing values (from 18 to 36 per cent, and in Aurukun from 18 to 53 per cent) and in percentage of boys (from 50 to 54 per cent). These changes in the sample could explain the changes in performance just as well as a genuine improvement in overall student achievement.

Student scores were not comparable across year levels, because the difficulty of the tests increased with year level (item response methodology was not used to construct a scale). Therefore, the percentage of students at or above the benchmark and percentage of students at risk were computed using the official, American standards.[57] Cut points were available for each year level and at each time of assessment (at the beginning, middle and end of the school year). Cross-cultural validity of the standards are not known. The statistics do not include Year 7 students, because there were no official cut points for this year level.

Summary statistics by year level and overall were removed (replaced with an *a*) if no students were tested, so that values in the same row within a table are as comparable as possible. However, comparability remains an issue because it is sometimes unclear if students from all year levels were tested within each school. For example, Year 4 students at Hope Vale were not tested in the middle of 2011 using the Daze subtest. Therefore the apparent increase in the percentage of students reaching the benchmark and the decrease in percentage at risk for the total CYAAA group, may be a result of another bias in the data caused by the exclusion of Year 4 students in 2011 and inclusion of Year 4 students in 2012. This again indicates that values in the tables are often not comparable and should be interpreted with appropriate caution.

57 https://dibels.uoregon.edu/training/measures/benchmark.php

The results in Table 40 to Table 42 are cross-sectional and do not report on the growth in achievement of individual students, that is, the difference in performance between two time points for individual students. Given the many limitations of these data and the fact that the percentage of missing values only increases when including only students that were tested at two specific time points, no longitudinal comparisons were made (consistent with PAT-R and PAT-M results in Appendix 4). An additional reason for not including any longitudinal results is that growth in individual students is not a measure of effectiveness if this growth cannot be compared to growth before implementation of the CYAAA Initiative or to growth in other, similar schools. Furthermore, comparing growth of students between high attenders and low attenders is also not an effectiveness measure, because it confounds attendance with the program's effects.

Table 40 DIBELS results at the beginning of 2011 and 2013

DIBELS Subtest	GROUP	% At or above benchmark		% At risk		Number of students	
		2011	2012	2011	2012	2011	2012
PSF (maximum 72)	Total	2	0	94	79	(48)	(38)
	Aurukun	0	0	97	93	(31)	(15)
	Coen	25	0	50	20	(4)	(5)
	Hope Vale	0	0	100	83	(13)	(18)
	Year 1	2	0	94	79	(48)	(38)
Accuracy (maximum 1)	Total	6	12	89	82	(179)	(123)
	Aurukun	5	6	95	90	(85)	(49)
	Coen	17	23	78	68	(23)	(22)
	Hope Vale	4	13	86	81	(71)	(52)
	Year 2	3	4	94	87	(32)	(23)
	Year 3	2	11	96	84	(48)	(19)
	Year 4	9	6	91	88	(22)	(33)
	Year 5	5	10	78	85	(37)	(20)
	Year 6	13	29	88	68	(40)	(28)
Words Correct (maximum 178)	Total	2	8	96	88	(179)	(123)
	Aurukun	1	2	99	96	(85)	(49)
	Coen	13	23	87	68	(23)	(22)
	Hope Vale	0	8	94	88	(71)	(52)
	Year 2	3	4	94	87	(32)	(23)
	Year 3	0	5	98	95	(48)	(19)
	Year 4	5	3	95	94	(22)	(33)
	Year 5	3	10	95	90	(37)	(20)
	Year 6	3	18	95	75	(40)	(28)
Daze (maximum 60)	Total		10		79		(112)
	Aurukun		2		94		(53)
	Coen		29		47		(17)
	Hope Vale		12		74		(42)
	Year 3		8		88		(25)
	Year 4		7		90		(42)
	Year 5		11		78		(18)
	Year 6		15		56		(27)

Table 41 DIBELS results in the middle of 2010, 2011 and 2012

DIBELS Subtest	GROUP	% At or above benchmark			% At risk			Number of students		
		2010	2011	2012	2010	2011	2012	2010	2011	2012
PSF (maximum 72)	Total	*a*	10	8	*a*	79	82	(29)	(42)	(49)
	Aurukun	0	5	0	92	80	89	(25)	(20)	(19)
	Coen	25	40	30	50	20	60	(4)	(5)	(10)
	Hope Vale		6	5		94	85		(17)	(20)
Accuracy (maximum 1)	Total	*a*	7	9	*a*	88	87	(80)	(216)	(222)
	Aurukun	4	5	4	96	93	91	(57)	(115)	(117)
	Coen	4	20	30	74	68	67	(23)	(25)	(30)
	Hope Vale		5	7		87	89		(76)	(75)
	Year 1	*a*	6	2	*a*	94	96	(19)	(50)	(45)
	Year 2	*a*	4	9	*a*	89	91	(18)	(28)	(43)
	Year 3	*a*	6	3	*a*	94	90	(14)	(48)	(31)
	Year 4	*a*	5	7	*a*	89	91	(13)	(19)	(45)
	Year 5	*a*	12	12	*a*	74	80	(8)	(34)	(25)
	Year 6	*a*	8	21	*a*	84	70	(8)	(37)	(33)
Words Correct (maximum 178)	Total	*a*	4	7	*a*	95	91	(81)	(217)	(223)
	Aurukun	2	2	4	98	98	96	(58)	(115)	(117)
	Coen	9	16	23	87	80	70	(23)	(25)	(30)
	Hope Vale		3	5		96	92		(77)	(76)
	Year 1	*a*	4	4	*a*	96	96	(19)	(50)	(45)
	Year 2	*a*	4	7	*a*	96	91	(19)	(28)	(44)
	Year 3	*a*	2	3	*a*	98	97	(14)	(48)	(31)
	Year 4	*a*	5	7	*a*	95	93	(13)	(20)	(45)
	Year 5	*a*	6	8	*a*	91	88	(8)	(34)	(25)
	Year 6	*a*	3	15	*a*	95	79	(8)	(37)	(33)
Daze (maximum 60)	Total		1	6		97	89		(115)	(126)
	Aurukun		0	3		99	97		(73)	(65)
	Coen		6	9		89	73		(18)	(22)
	Hope Vale		0	8		100	85		(24)	(39)
	Year 3		0	0		98	93		(41)	(28)
	Year 4		8	5		92	90		(13)	(42)
	Year 5		0	9		100	83		(31)	(23)
	Year 6		0	9		97	88		(30)	(33)

a: students in Hope Vale were not tested

Table 42 DIBELS results at the end of 2010 and 2011

DIBELS Subtest	GROUP	% At or above benchmark 2010	% At or above benchmark 2011	% At risk 2010	% At risk 2011	Number of students 2010	Number of students 2011
PSF (maximum 72)	Total	5	2	80	98	(20)	(41)
	Aurukun	0	0	89	100	(18)	(21)
	Coen	50	17	0	83	(2)	(6)
	Hopevale		0		100		(14)
	00	5	2	80	98	(20)	(41)
Accuracy (maximum 1)	Total	*a*	8	*a*	86	(93)	(215)
	Aurukun	3	5	94	91	(66)	(118)
	Coen	15	18	70	61	(27)	(28)
	Hope Vale		9		87		(69)
	01	*a*	8	*a*	91	(7)	(53)
	02	*a*	3	*a*	94	(21)	(31)
	03	*a*	5	*a*	90	(14)	(42)
	04	*a*	5	*a*	75	(18)	(20)
	05	*a*	12	*a*	70	(19)	(33)
	06	*a*	14	*a*	86	(14)	(36)
Words Correct (maximum 178)	Total	*a*	4	*a*	94	(93)	(215)
	Aurukun	2	3	98	97	(66)	(118)
	Coen	4	14	89	82	(27)	(28)
	Hope Vale		3		93		(69)
	01	*a*	6	*a*	92	(7)	(53)
	02	*a*	3	*a*	97	(21)	(31)
	03	*a*	0	*a*	98	(14)	(42)
	04	*a*	5	*a*	95	(18)	(20)
	05	*a*	6	*a*	91	(19)	(33)
	06	*a*	6	*a*	92	(14)	(36)
Daze (maximum 60)	Total		4		93		(91)
	Aurukun		3		97		(31)
	Coen		5		90		(20)
	Hope Vale		5		93		(40)
	03		6		88		(16)
	04		6		94		(18)
	05		7		90		(30)
	06		0		100		(27)

a: students in Hope Vale were not tested

Comments on An Analysis of the Impact of Direct Instruction on the Literacy Growth in Cape York Aboriginal Australian Academy Schools 2010-2012; Technical Report

This section of the appendix examines the Technical Report supplied by CYAAA that used DIBELS data to measure growth in CYAAA schools. This examination was prompted by the reference to its findings by various interviewees during the evaluation. A copy of this report was provided to ACER during the evaluation. ACER has a number of concerns about the contents of this report:

1. *A limited conception of literacy*: The DIBELS test as used in the CYAAA schools consists of four subtests. The technical report only analyses one subtest. The raw score on this subtest is the number of words a student reads correctly in one minute. The scores on this test are generally referred to as literacy. However, literacy is a much broader term – as the use of four subtests by DIBELS implies – and its use in the report does not reflect the meaning of the test scores accurately.

2. *Participating students*: The technical report lists the total number of students that are enrolled in two of the three CYAAA schools. Coen is presumably excluded because of the small number of students. However, some results of Coen students are reported. Percentage of missing values (non-respondents) are not reported. Since the number of enrolled students are not reported by assessment year nor by analysed subgroup, it is impossible for the reader to estimate the percentage of missing data without referring to the original response data file. According to the data the percentage of missing values

is not negligible, especially in 2010 where the overall percentage of missing data is roughly between 40 and 50 per cent. The total number of participating students in each school in Table 3 of the Technical Report, for example, are much lower than the total number of enrolled students in the school (63 students in 2010 and 141 students in 2012 out of 259 students in Aurukun; 71 students in 2011 and 80 students in 2012 out of 172 students in Hope Vale). These differences need to be explained and examined. A failure to do so severely compromises the analyses and the findings upon which they are based.

3. *Results overall versus results by subgroup*: The report presents results by subgroups of the CYAAA population. The data is analysed within each school and, in addition, either by level of attendance ('low' or 'high') or by initial performance on the test which groups students into reading programs.

   Firstly, while average student raw scores across year levels were reported, official documentation on the DIBELS test scores explains that the subtests of the DIBELS increase in difficulty by year level.[58] Consequently, raw test scores cannot be compared between grades and cannot be used for longitudinal analyses. To be able to make these comparisons or to average performance over different year levels, the raw scores need to be transformed using cut points that are specific for each test, year level, and assessment time. These cut points define three categories: at or above the benchmark, at risk or in between. Once these transformations have been made, the data is comparable between year levels and can be used for longitudinal purposes. This was not done – raw student scores were used instead.

   Furthermore, the report's examination of the differences between high and low attenders concludes that 'it was evident that higher attenders demonstrated growth that was markedly higher than their peers who came to school less often.' It is ACER's view that this result only suggests that students learn if they go to school. It does not provide evidence that there is a unique contribution attributable to the CYAAA Initiative. In other words, in the analyses reported, the effect of attendance rate is confounded with the effect of the quality of instruction.

   Additionally, according to the report the two school samples were each split in half: low attenders had attendance scores below the median of that school at that assessment year, high attenders had rates above the median. Therefore, four different cut points were used to define membership (65 per cent in 2010 and 70 per cent in 2012 in Aurukun; 83 per cent in 2011 and 81 per cent in 2012 in Hope Vale). Consequently, a random student with an attendance rate of 80 per cent would be classified as a high attender in Aurukun and a low attender in Hope Vale. Similarly, an Aurukun student with an attendance rate of 70 is a high attender in 2010 and a low attender in 2012. Since the impact of attendance rate is probably not dependent on the attendance rates of other students in the school, it seems more appropriate to set one meaningful cut point to differentiate all low attenders from high attenders.

   Finally, the method using medians should result in groups of equal size, but the numbers of low and high attenders in Table 3 of the Technical Report are not equal within school and within assessment time. Since the number of low attenders is consistently lower than the number of high attenders and because we know that students that did not sit the test attend school on average less often, these differences are probably caused by non-response to the test. Differences in the level of non-response to the test of the low and high attenders make comparisons between the groups questionable. The groups could differ in characteristics other than attendance rate. That is, there could be a correlation between low attendance and other causally relevant student or contextual variables (for example, gender or language background). These differences need to be explored in order to interpret the results with more confidence.

   For these three reasons, ACER has reservations about the conclusions drawn using the between-group comparisons used in the Technical report.

4. *Cross-sectional versus longitudinal analysis*: In the previously described analysis, the assessment years 2010/2011 and 2012 are referred to as pretest and posttest, which implies that the analysis was using longitudinal data. However, the total number of students within each school is different in 2010/2011 and in 2012 so some students were tested twice, some only in 2010 and others only in 2012. Given the small samples, a few students that were only tested at one time point could change a mean performance substantially and make comparisons over time invalid.

   If the data are longitudinal, then only students that have been tested twice can be included in any analyses. The dependence between the two time points need to be taken into account when computing an effect size, because it is one sample tested

58 http://dibels.org/papers/DIBELSNextBenchmarkGoals.pdf

twice (within-subject comparisons) and not two independent samples (between-subject comparisons). The report does not mention how the effect size was computed. For cross-sectional data, (birth) cohorts are compared at different time points. In case of educational research, that is often a year level. For example, the performance of Year 6 students in 2010 is compared with the performance of Year 6 students in 2012. All students with test scores can be included for this analysis, the samples can be assumed to be independent and the between-subject effect-size can be computed. However, when grouping all year levels together, a dependence between the two time points is created by the overlap in the samples (the students that were tested at both time points). It seems that the comparisons over time in this report are a fusion of longitudinal and cross-sectional methodologies, both when comparing by subgroups of attendance rates and by initial reading program. This is a methodological error.

For these four reasons, all of them linked in various ways to methodological issues, ACER was not able to use findings in the evaluation taken from the report *An Analysis of the Impact of Direct Instruction on the Literacy Growth in Cape York Aboriginal Australian Academy Schools 2010-2012; Technical Report*.

Appendix 6: Non-test, primary and secondary data supplied by CYAAA to the evaluation

This appendix lists the non-test data that was supplied to ACER for the evaluation by CYAAA. Table 43 lists the date, time, contents, the form the data were supplied in, any concerns that ACER had with these data, and a brief statement explaining why some of this information was not used in the evaluation. There were 33 different sets of data or information supplied. This appendix does not list the test data that were supplied, nor any data supplied following the submission of the draft report. Details of these data are provided in the body of the report and associated appendices.

Table 43 Detailed list of non-test primary and secondary data sources supplied to the evaluation by CYAAA

Date received	Time	Contents	Form	Concerns		Rationale for not using
27-Nov-12	17:30	1. Enrolment data 2001-12 (DETE data)	Spreadsheet	Nil	Used	
27-Nov-12	17:56	2. Club/Culture (enrolment; attendance; hours of instruction delivered; number of activities undertaken	Word table	Percentages given without Ns	In draft report	
4-Dec-12	15:12	3. Student Education Trusts balances and open accounts for Aurukun, Coen and Hope Vale	Spreadsheet	Nil	Used	
7-Dec-12	13:09	4. Education Trust accounts balance from 2009 to 2012 for Aurukun, Coen and Hope Vale	Spreadsheet	Nil	Used	
17-Dec-12	14:53	5. Kelman classification for Aurukun (2011-2012)	Spreadsheet	Nil	Not used	Not used by the evaluation because only data for Aurukun were available, and ACER had insufficient information to make a well-evidenced judgement about the quality of these data
		6. CYAAA Club events summary (listing of Club codes across Communities, Music and sporting events)	Spreadsheet	Nil	Used	
		7. Overview of the Culture program	Word Doc	Nil	Used	
		8. Culture Camp flyer	PowerPoint	Nil	Used	
18-Dec-12	18:41	9. Cape York Welfare Reform Evaluation chapter on social change	PDF	Nil	Not used	Examined by ACER but not used. ACER is of the view that the two evaluations need to be conducted independently of each other. Should they come up with different findings, then debate about these differences can be undertaken by stakeholder groups. ACER does not see its role as a participant in these debates.
21-Dec-12	11:47	10. CYAAA Health data for Aurukun with contextual explanations	Spreadsheet	Nil, but limited in scope	Not used	Out of scope

Table continued over the page ....

Date received	Time	Contents	Form	Concerns		Rationale for not using
		11. Count of parents attending parade (CYAAA parade count)	Word Doc	No information on whether the same parents or not	Used	
		12. Culture camps participants (CYAAA Culture camp data)	Spreadsheet	Nil	Not used	Consulted but not explicitly referenced in the report because the spreadsheet was more detailed than required.
		13. Hours of Club/Culture per week	Spreadsheet	Percentages given without Ns (Duplicate of 27 Nov email)	In draft report	
		14. Other things done in Club and Culture		File not attached	NA	
15-Jan-13	17:30	15. Further information regarding employment opportunities attached to CYAAA Culture program	Email	Nil	Used	
25-Feb-13	12:07	16. Additional information on what the Club & Culture domains involve	PowerPoint	Nil	Not used	Consulted but did not contain data unique to this source, that is in part duplicated already used data.
27-Feb-13	17:12	17. Eight de-identified Direct Instruction Progress Reports for CYAAA students	PDF	Nil	Not used	Consulted but out of scope as Direct Instruction was explicitly excluded by the Framework
27-Feb-13	17:17	18. Additional information on the CYAAA Club & Culture Programs.	Email	Nil	Used	
28-Feb-13	17:46	19. Extracts from the draft CYWR evaluation (Chapters 4 and 8)	PDF	Nil	Not used	See 18 Dec 2012
7-Mar-13	15:56	20. Information on Indigenous Teacher Training and Coen Indigenous Staffing	Email	Nil	Used	
7-Mar-13	16:02	21. Information relating to community meetings	Email	Nil	Used	
7-Mar-13	16:55	22. Information on Health, as well as lesson information	Email	Nil	Not used	Out of scope
		23. Health Unit outline	Word Doc	Nil	Not used	Out of scope
		24. Lesson 1	Word Doc	Nil	Not used	Out of scope – directly related to Direct Instruction or its practice
		25. Questionnaire	Word Doc	Nil	Not used	Out of scope – see above
		26. Lesson 2	Word Doc	Nil	Not used	Out of scope – see above
		27. Letter template	Word Doc	Nil	Not used	Out of scope – see above
		28. Lesson 3	Word Doc	Nil	Not used	Out of scope – see above
7-Mar-13	17:00	29. Club and culture statistics	Word Doc	Percentages given without Ns	In draft report	
		30. Club activities	Spreadsheet	Nil	Used	
		31. Academy Awards pamphlet	PDF	Nil	Not used	Examined and useful for background but did not provide data suited to reporting
		32. Camp pamphlet	PDF	Nil	Not used	Examined and useful for background but did not provide data suited to reporting
7-Mar-13	17:47	33. Information on the CYAAA Leadership Camp	Word Doc	Nil	Not used	Examined and useful for background. Counts of attendees were not needed for the report.

Appendix 7: Description of the method used to match students

This appendix provides a detailed account of the method used to match students for longitudinal comparisons of CYAAA students and for comparisons between CYAAA and non-CYAAA students.

Method

The planned analyses consisted of CYAAA students who had longitudinal NAPLAN scores available between 2010 and 2012. That is, students who were assessed in both years for at least one NAPLAN strand were included.

Four NAPLAN strands were used in the analyses: grammar and punctuation, numeracy, reading and spelling. Scores on the writing test could not be compared over this time period due to changes in the test and were therefore not included.

The available students were matched to students from other schools who were similar in performance in 2010 and background characteristics. These students are referred to as 'control' students in the sense of them being the control or comparison group for the evaluation.

The pool of possible control students:

- came from remote or very remote government schools in Queensland
- were of Aboriginal or Torres Strait Islander origin or both
- attended Year 3 or Year 5 in 2010
- had NAPLAN scores on at least one strand in 2010 and in 2012.

After this initial selection process, each of the CYAAA students was paired with a control student who was most similar in NAPLAN performance in 2010, school attendance in 2010, and background characteristics. Eight variables were used for this matching, namely:

- year level in 2010
- Indigenous status
- NAPLAN scores in 2010
- school attendance rate in 2010
- sex
- parental occupation status
- parental educational level
- language background.

Next, the number of matches within each possible pair of students was counted for these eight variables. If one CYAAA student was similar to one possible control student in all eight areas, they received a score of eight. If they had nothing in common, they received a score of zero.

The variable *year level* had two values in 2010: Year 3 or Year 5.

Indigenous status had three categories: (a) Aboriginal, (b) Torres Strait Islander, or (c) both.

The *average NAPLAN* score was computed for each student in 2010. Although the evaluation analyses were performed for each individual NAPLAN strand, an average NAPLAN score for each student was used for matching to simplify the process. The average for each individual was calculated by summing their scores across each strand and dividing by the number of strands on which they had no missing value. If a student only had a score on one strand, the average was equal to that score. NAPLAN scores were counted as a match if they were not more than 15 score points different from each other. A cut-off of 15 points was found to be practical because the range was large enough to find multiple possible matches for each CYAAA student so that

matching on other variables could be applied as well, and the range was small enough to select a control group that was very close to the CYAAA group in initial average NAPLAN scores. A smaller range would result in a control group that was less similar on other matching variables than the current control group, a larger range would result in a control group that was not as similar in initial NAPLAN scores. This range was only used to count the number of matches between each possible pair of students. When selecting final control students, the difference in average NAPLAN score of each pair was kept as small as possible.

School attendance rates ranged from 0 to 100 per cent. Pairs were counted as a match on this variable if their percentages were not more than 10 per cent apart. As with the average NAPLAN scores, this range proved to be both efficient and accurate.

Student's *sex* was either male or female.

Parental occupation had six categories: (a) senior management, (b) other business managers, (c) tradesmen/women, (d) machine operators, (e) not in paid work, and (f) missing. The data sources were school records with parental occupation of one or two parents. The occupation code chosen was of the parent with the higher status.

Parental education background was also collected from school records for both parents. The categories were: (a) missing,(b) Year 9 or below, (c) Year 10, (d) Year 11, (e) Year 12, (f) certificate I to IV, (g) advanced diploma, (h) bachelor degree or above. Again, the parental education code was chosen for the parent with the higher level. Parental occupation and education data were used from 2010. However, if the information was missing in 2010 the values were taken from 2011, and if missing from 2009, and so on.

Language background was categorized as either English or other than English.

A missing value for CYAAA students on one of the variables was counted as a match with any value on the same variable of possible control students. Therefore the maximum number of matches for each possible pair was always eight.

Selecting the best student as a match ('a control student') for each CYAAA student involved several stages. Only a few CYAAA students had the maximum of eight matches with one or more possible control students. To minimise the chance that a control student was paired with one CYAAA student when he or she was a better match with another CYAAA student, these pairs with eight matches were reviewed first.

For these students, the main criterion was the completeness of the NAPLAN data in 2010 and 2012. Some students did not have longitudinal data for all four strands. If several students had complete data, the student with the closest average NAPLAN score and attendance rate was chosen. If another student was almost as good as the best match, this student was selected as second best match in case the first one needed to be matched to another CYAAA student at a later stage in the selection process. If none of the possible control students for one CYAAA student had complete NAPLAN data, an attempt was made to pair the CYAAA student with a control student in the next stage.

In the second stage, the pairs of students with seven out of eight matches were reviewed. Again, the first part of the matching was to examine the completeness of the NAPLAN data. In addition, there was a check to see if the possible control student was already paired with another CYAAA student. Subsequently, the difference in average NAPLAN score, Indigenous status and attendance rates were minimized simultaneously. If more than one student was available after this step, sex, parental occupation, parental education and language background were used for finding the best match and, if available, the second best match. If no student was available for matching, the CYAAA student was usually matched to a control student in the next stage, unless a control student could be used that was already matched to another CYAAA student, but could be replaced by a second best control student.

In the next stage, pairs of students with six out of eight matches were reviewed, following the same procedure as for the second stage.

After selecting the matched control group, descriptive statistics on the eight matching variables were produced, comparing the CYAAA group and the control group (pooled and by year level). That is, means, medians and standard deviations on the two continuous variables – average NAPLAN scores and attendance rates – were compared. In addition, differences on the individual NAPLAN strands were reviewed. For the categorical variables, the numbers and percentage of students in each category were compared (again, pooled and by year level). These comparisons were the information that ACER used to assess the quality of the matches. A number of minor changes were made so that matches that had been made between some Aboriginal CYAAA students and paired Torres Strait Islander 'control' students were replaced with Aboriginal students in the control group. They were thus

seen to be fair control group and so the next step was ready to be taken – the analysis of the outcome variables. To ensure an unbiased control group, none of the outcome variables were consulted up to this point. In other words, the matching of students was done by ACER blind of the outcomes to be assessed.

For each student the difference between their 2010 and 2012 NAPLAN scores was computed as a growth score and used as an outcome variable to test if growth in CYAAA students was different from growth in similar, non-CYAAA, students. Growth scores were used instead of 2012 NAPLAN scores to account for remaining differences in 2010 NAPLAN scores after matching. Since the students were matched on initial NAPLAN scores, the relative gain scores that were also provided by DETE did not have any additional value to these 'raw' growth scores for these analyses. (They were used for the internal analyses as reported in Appendix 3.) It was because of their simplicity that the raw growth scores were used for these analyses. In addition, differences in attendance rates between the groups in both 2010 and 2012 were tested for statistical significance using the non-parametric Wilcoxon test for matched samples.[59] The standard significance level of 0.05 was chosen for all statistical tests in this report.

Results of matching

In 2010, 28 Year 3 and 45 Year 5 students attended one of the three CYAAA schools and were not exempt from the NAPLAN test. Of these students, 18 Year 3 and 19 Year 5 students had NAPLAN scores in both 2010 and 2012 for at least one strand. No acceptable match could be found for two Year 5 students. That is, 36 per cent of the 2010 Year 3 students and 58 per cent of the 2010 Year 5 students were excluded from the analysis. (See Appendix 1 for a discussion about missing data.)

This amount of missing data is large and has an unknown effect on the results of the analysis. It is possible, for example, that students excluded from the analyses had lower attendance rates and were academically weaker students. Appendix 3 includes missing value analyses by assessment year and year level. The results suggest that the respondents and the non-respondents differ at least in some years and in some year levels in percentage of boys, of students with a language background other than English and in attendance rates.

As it is unknown how the CYAAA program affected progress in students that could not be included in the current analysis, results must be interpreted with caution as generalisation to all students in CYAAA schools may not be valid.

Furthermore, not all CYAAA students who were included had longitudinal NAPLAN data for all four strands of the NAPLAN test. For example, some had only scores on the numeracy test in 2010 and 2012. Table 44 shows the number of students who had longitudinal NAPLAN data for each strand by year level. It also shows the percentage of students who were not included, because of missing NAPLAN data or because no acceptable control student was available (two Year 5 students).

Table 44 Number of included and percentage of missing students for each NAPLAN strand

	Year 3		Year 5	
	N	% excluded	N	% excluded
Total NAPLAN sample	28		45	
Total included	18	36	17	62
Grammar & Punctuation	14	50	15	67
Numeracy	15	46	14	69
Reading	11	61	14	69
Spelling	14	50	15	67

A pool of 358 possible control students from remote and very remote schools, with Indigenous background and with longitudinal NAPLAN data for at least one strand was available for matching from 29 different schools. All these schools were listed in the evaluation framework as schools with similar characteristics as the CYAAA schools. Thirty-five of the 37 CYAAA students were successfully matched to a 'control' student. No match was available for two Year 5 students with very low NAPLAN scores and very low attendance rates. The 35 control students came from 11 school campuses. Table 45 shows the number of students in each campus, by cohort and in total.

59 The assumption for a parametric t-test for matched samples is that the difference between the scores is normally distributed. This assumption was not met for numeracy in both age cohorts and for spelling in Year 5 (Shapiro-Wilk test for samples under 50 respondents). Because of this violation and because of the small number of students, the non-parametric Wilcoxon test for matched samples was used in which the difference in the outcome variable between each pair of students is the unit of analysis. This type of analysis takes the dependence between the groups into account.

Table 45 School and student sample

			Year Level 2010		
			Year 3	Year 5	Total
CYAAA group	1	Aurukun Campus of CYAAA	11	11	22
	2	Coen Campus of CYAAA	4	6	10
	3	Hope Vale Campus of CYAAA	3	0	3
	Total	18	17	35	
Control Group	1	Bloomfield River State School	1	0	1
	2	Cunnamulla P-12 State School	0	1	1
	3	Doomadgee State School	5	1	6
	4	Kowanyama State School	1	6	7
	5	Lockhart State School	1	3	4
	6	Mornington Island State School	3	3	6
	7	Pormpuraaw State School	0	1	1
	8	Tagai State College - Badu Is	5	0	5
	9	Tagai State College - Mabuiag	0	1	1
	10	Tagai State College - Thursday	1	1	2
	11	Western Cape College - Mapoon	1	0	1
	Total	18	17	35	
No match available		Aurukun Campus of CYAAA		2	2
	Total		2	2	

To evaluate the appropriateness of the selected control group, descriptive statistics showing attendance rate and NAPLAN scores in 2010 were computed for the two groups, overall and by year level. The results are presented in Table 46. Because students were matched on their average NAPLAN scores in 2010, there were some differences in starting scores for each individual strand. However, differences in these NAPLAN starting scores were controlled for in the analysis by using growth scores[60] as the outcome variable.

60 That is, raw gain, in other words Time 2 minus Time 1 scores.

Table 46 Descriptive statistics of NAPLAN scores and attendance rate in 2010 for the CYAAA group and the control group, overall and by year level

	GROUP	Mean	Median	Standard Deviation	Minimum	Maximum	N missing
All students							
Attendance rate 2010	CYAAA	85	90	14	48	100	1
Attendance rate 2010	Control	86	89	12	54	100	2
Average NAPLAN 2010	CYAAA	283	274	53	193	448	0
Average NAPLAN 2010	Control	286	284	53	179	447	0
Grammar and Punctuation 2010	CYAAA	263	261	84	26	437	3
Grammar and Punctuation 2010	Control	252	256	86	55	399	3
Numeracy 2010	CYAAA	267	285	61	111	379	3
Numeracy 2010	Control	285	294	53	170	390	3
Reading 2010	CYAAA	310	317	42	228	433	4
Reading 2010	Control	317	306	60	206	432	4
Spelling 2010	CYAAA	288	297	62	226	460	3
Spelling 2010	Control	290	297	73	226	526	3
Year 3 students							
Attendance rate 2010	CYAAA	87	92	13	54	99	1
Attendance rate 2010	Control	87	90	12	54	100	2
Average NAPLAN 2010	CYAAA	251	243	38	193	372	0
Average NAPLAN 2010	Control	253	251	39	179	373	0
Grammar and Punctuation 2010	CYAAA	227	235	70	26	333	2
Grammar and Punctuation 2010	Control	245	246	67	117	364	2
Numeracy 2010	CYAAA	241	230	48	141	320	1
Numeracy 2010	Control	253	259	47	170	352	1
Reading 2010	CYAAA	293	293	47	228	433	2
Reading 2010	Control	277	278	43	206	366	2
Spelling 2010	CYAAA	252	226	51	226	403	2
Spelling 2010	Control	247	226	59	226	455	2
Year 5 students							
Attendance rate 2010	CYAAA	84	85	15	48	100	0
Attendance rate 2010	Control	85	84	14	59	100	0
Average NAPLAN 2010	CYAAA	318	322	43	245	448	0
Average NAPLAN 2010	Control	322	319	41	254	447	0
Grammar and Punctuation 2010	CYAAA	300	313	84	55	437	1
Grammar and Punctuation 2010	Control	260	271	103	55	399	1
Numeracy 2010	CYAAA	297	306	62	111	379	2
Numeracy 2010	Control	321	320	32	272	390	2
Reading 2010	CYAAA	329	332	25	261	360	2
Reading 2010	Control	359	360	45	261	432	2
Spelling 2010	CYAAA	325	297	50	297	460	1
Spelling 2010	Control	332	297	61	297	526	1

For the same purpose, Table 47 presents the number of students in each category of the six categorical variables used for matching. Due to of the large number of missing values on the parental variables and language background (LBOTE) in the CYAAA group, percentages of students with values were also computed to enable comparisons between the groups. However, the equivalence of the groups on these variables is uncertain because the true codes are not known for many CYAAA students.

Table 47 Number and percentage of students in each category of the variables for matching, overall and by year level

		N students		Percentage of valid codes	
	Category	CYAAA	Control	CYAAA	Control
All students					
Year Level 2010	Year 3	18	18	51%	51%
Year Level 2010	Year 5	17	17	49%	49%
Indigenous status	1 Aboriginal	30	25	86%	71%
Indigenous status	2 Torres Strait Islander	0	5	0%	14%
Indigenous status	3 Both	5	5	14%	14%
Gender	Female	16	14	46%	40%
Gender	Male	19	21	54%	60%
Parental occupation	1 Senior management	1	0	6%	
Parental occupation	2 Other business managers	0	3	0%	11%
Parental occupation	3 Tradesmen/women	4	4	25%	14%
Parental occupation	4 Machine operators	4	11	25%	39%
Parental occupation	8 Not in paid work	7	10	44%	36%
Parental occupation	9 Missing	19	7		
Parental education	0 Missing	18	8		
Parental education	1 Year 9 or equivalent or below	1	6	6%	22%
Parental education	2 Year 10 or equivalent	11	11	65%	41%
Parental education	3 Year 11 or equivalent	1	2	6%	7%
Parental education	5 Certificate I to IV	4	8	24%	30%
LBOTE	0 No	4	1	15%	3%
LBOTE	1 Yes	22	34	85%	97%
LBOTE	9 Missing	9	0		
Year 3 students					
Indigenous status	1 Aboriginal	17	10	94%	56%
Indigenous status	2 Torres Strait Islander	0	5	0%	28%
Indigenous status	3 Both	1	3	6%	17%
Gender	Female	7	7	39%	39%
Gender	Male	11	11	61%	61%
Parental occupation	1 Senior management	1	0	14%	0%
Parental occupation	2 Other business managers	0	3	0%	17%
Parental occupation	3 Tradesmen/women	1	2	14%	11%
Parental occupation	4 Machine operators	2	8	29%	44%
Parental occupation	8 Not in paid work	3	5	43%	28%
Parental occupation	9 Missing	11	0		
Parental education	0 Missing	10	0		
Parental education	1 Year 9 or equivalent or below	1	5	13%	28%
Parental education	2 Year 10 or equivalent	4	8	50%	44%
Parental education	3 Year 11 or equivalent	0	2	0%	11%
Parental education	5 Certificate I to IV	3	3	38%	17%
LBOTE	0 No	2	0	17%	0%
LBOTE	1 Yes	10	18	83%	100%
LBOTE	9 Missing	6	0		
Year 5 students					
Indigenous status	1 Aboriginal	13	15	76%	88%
Indigenous status	2 Torres Strait Islander				
Indigenous status	3 Both	4	2	24%	12%
Gender	Female	9	7	53%	41%
Gender	Male	8	10	47%	59%
Parental occupation	1 Senior management				
Parental occupation	2 Other business managers				
Parental occupation	3 Tradesmen/women	3	2	33%	20%
Parental occupation	4 Machine operators	2	3	22%	30%
Parental occupation	8 Not in paid work	4	5	44%	50%
Parental occupation	9 Missing	8	7		
Parental education	0 Missing	8	8		
Parental education	1 Year 9 or equivalent or below		1		11%
Parental education	2 Year 10 or equivalent	7	3	78%	33%
Parental education	3 Year 11 or equivalent	1		11%	
Parental education	5 Certificate I to IV	1	5	11%	56%
LBOTE	0 No	2	1	14%	6%
LBOTE	1 Yes	12	16	86%	94%
LBOTE	9 Missing	3			

Lastly, there was some fine tuning, which occasionally involved using individual judgement. For example, the membership of the first set of selections for the control group was adjusted to decrease the number of Torres Strait Islanders and maximise the number of Aboriginal students. Once these adjustments were made, the control group of matched students was complete and finalised.

Appendix 8: Detailed description of staff turnover

This appendix provides the text CYAAA forwarded to the evaluation describing the levels of staff turnover at the three campuses. The text below is verbatim, as provided by CYAAA.

Aurukun

During the year 2010, all teaching staff were retained to complete the school year with the exception of 3 Teaching staff including the new Aurukun Campus Principal left within the first 2 months of the School year in 2010. 1 teacher was promoted to a leadership position within CYAAA at another Campus and 1 teacher stayed on beyond their minimum 2 year service period.

During the year 2011, 17 teaching staff were retained to complete the school year with the exception of the Aurukun Campus Principal (who relocated due to family reasons after 1 year and 1 Term) and 2 teachers who were promoted to school leadership positions in other school locations and did not complete their minimum service at Aurukun Campus.

During the year 2012, 17 teaching staff were retained to complete the school year, with the exception of 1 teacher who was relocated to another CYAAA Campus (for family reasons). 3 teachers including the Aurukun Campus Principal was retained beyond their minimum service period.

During the year 2013, 18 teaching staff were retained to commence the school year, 3 new teachers were appointed and 1 teacher who returned to her home location for family reasons following a major incident in the community. Of the 13 teachers who are eligible to transfer out at the end of 2013, currently only 6 have indicated that they are considering a transfer or leave. This will mean that we could potentially retain 2 teachers (including the Campus Principal) for their 4th year and 5 teachers for their 3rd year.

Coen

During the year 2010, all teaching staff were retained to complete the school year with the exception of 2 Teaching staff including the new Coen Campus Principal left within the first 2 months of the School year in 2010. 1 teacher had already been retained beyond the 2 year minimum service. At the end of 2010 the Campus Principal was promoted to another CYAAA Campus for the commencement of 2011.

During the year 2011, 4 teaching staff were retained to complete the school year with the exception of 2 teachers who relocated during the year, 1 had already stayed beyond the minimum service. There was significant leadership turnover at Coen Campus during first six months of 2011. A Campus Principal was recruited for Semester 2 2011 and was retained into 2012. A longstanding teacher elected to transfer for family reasons in the middle of the year and 1 teacher did not complete their required minimum service at Coen Campus due to family reasons and the successful application for employment outside of CYAAA.

During the year 2012, 5 teaching staff were retained to complete the school year, with the exception of the Campus Principal who left mid-year after 12 months service who was relocated to another school for family reasons.

During the year 2013, 5 teaching staff were retained from 2012 to commence the 2013 school year. Of the 3 teachers who are eligible to transfer out at the end of 2013, currently 3 have indicated that they are considering a transfer. Indications are strong to retain the Campus Principal and 2 other teachers beyond the end of 2013. Teacher retention at Coen Campus is a longstanding issue due to the remoteness and size of the school community.

Hope Vale

During the year 2011, 11 teaching staff were retained to complete the school year with the exception of 2 teachers who relocated during the year, 1 due to a change in leadership structure of the school and the other due to illness. 9 teachers were retained from 2011 to 2012.

During the year 2012, 11 teaching staff were retained to complete the school year. 3 temporary teachers left during the year due to a range of reasons including family commitments, change of roles, illness and in one case a lack of suitability for teaching in the community. There was considerable difficulty in recruiting teachers to match limited available teacher accommodation during the 2012 year which resulted in a range of short term and 6 month contract teachers.

During the year 2013, 11 teaching staff were retained from 2012 to commence the 2013 school year, with 3 new teachers commencing. Of the 11 teachers who are eligible to transfer out at the end of 2013, currently only 2 have indicated that they are considering a transfer and 2 have indicated that they are intending to retire from teaching service. Indications are strong to retain the Campus Principal and 10 other teachers beyond the end of 2013.