

The Early Literacy Project Milestone report

Milestone Report 3

June 2015

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Proactively Released

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General overview

Since the Milestone Report 2 in December 2014, recruitment of teachers and children has been completed, followed by Time 1 data collection in February for children, and in March for teachers. Time 2 data collection is currently in progress and is expected to be completed by the end of Week 2, Term 3. Two of the five workshops for teachers in the Implementation group have also taken place.

In this Milestone Report we include a recommended design change that enables an increase in the sample size of children while also enabling us to investigate the sustainability of changes in teacher practice change over time. This test of sustainability is essential for the potential scalability of this programme.

Recruitment

Schools, teachers and children

Recruitment of schools and teachers was finalised early in February. Central School in New Plymouth was added as a control school following the Time 1 data collection. Numbers of schools, teachers and children are provided in Table 1.

Table 1: Number of schools, teachers and children as of June 1st 2015

	2015		
	Total	Intervention 2015	Control
School numbers	39	24	15
Teacher numbers	62	38 (45 attended)	24
Children numbers	355 ^a	200	155 ^a

^aDoes not include numbers of children from Central School in New Plymouth

Research assistants

As with any workforce we are subject to market forces and we have been required to make changes to our research assistant workforce. Three of our Time 1 research assistants have taken up full-time teaching positions and needed replacing. A fourth research assistant has since informed us that she is unable to commit to as much of the data collection as she previously indicated.

Recruitment of new research assistants means that only a very small number of schools have had the same person coming back to undertake the various testing sessions. This is

not ideal and we are working on solutions to ensure schools and children are not subjected to multiple changes.

Challenges

We currently have issues with two comparison schools in terms of their willingness to continue with the project. Each has indicated that the teachers were not aware of the scope of the project or the amount of time involved. The key difficulties for these teachers appear to be concerns over the assessment of young children, including the time involved for the children. In one case, Alison visited with the school prior to their commitment and talked to them about the requirements of the study. In the other case the principal immediately agreed to participate in the project and there was no school visit to further inform the principal or teachers of the requirements of their commitment.

We recommend that we consider how best to seek the assistance of Regional Advisors to support schools in their commitment to the project.

Data collection with children

Time 1 data collection with children across all of the schools began in early February, and was completed during the first week of March. By the third week of March we had returned spreadsheets to all teachers with the scores of all children from their schools. Information letters explained what had been assessed and what the assessments meant (see Appendix 1). Time 2 data collection is currently in progress. We expect to have this round completed by Week 2 of Term 3. Children's assessment information will be provided to teachers by Week 6 of Term 3. As part of the Time 2 data collection we are also asking parents to complete a home survey regarding ECE participation, home literacy practices and questions designed to provide specific SES information. In this current Time 2 phase teachers are also being asked to complete a 15-question behaviour checklist on each child in their class to enable us to examine child behaviour relationships with literacy.

The data are still in the process of being checked prior to undertaking analyses. Variations in scoring and data entry across our research assistants are being checked and resolved as required. These data will be presented in Milestone Report 4. However, Table 2 does provide initial information on the performance of each of the groups of schools. At first glance it appears that there are differences between the groups, with the comparison group having slightly higher levels of achievement at school entry. However, there are no statistically significant differences in scores between the groups, except for the elision variable, with the comparison group obtaining higher scores than the intervention group, $t(352) = 2.03, p < .05$.

Table 2: Group performance on Time 1 measures (subject to data cleaning)

		Implementation (n=200)	Comparison (n=155)		
		Mean	SD	Mean	SD
Letter names					
	Upper case	10.93	8.87	11.41	9.03
	Lower case	9.62	8.67	10.21	8.63
Letter sounds					
	Upper case	5.15	7.40	6.52	7.75
	Lower case	4.86	7.32	5.97	7.64
Phonological awareness					
	Elision	4.50	4.31	5.41	4.09
	Blending	6.97	4.15	6.42	3.99
	Sound matching	7.53	5.72	7.73	5.13
Reading words		0.62	1.91	0.83	2.75
Spelling words		0.12	0.62	0.40	2.39
Vocabulary		98.26	12.26	98.99	12.32

There are some differences, non-significant, in the two letter names and the two letter sounds measures which tend to be due to familiarity, one way or another, for a specific case, and the increased likelihood of letter reversal errors in lower case. In the phonological awareness measures, sound matching is the easiest phonological measure as it requires less cognitive load than the other two forms of assessment in phonological awareness. Blending is the oral blending of provided sounds units of words (syllables, onset-rimes, individual phonemes). Elision is the deletion of sound units in words. All measures are designed to measure phonological awareness through to adulthood, thus lower scores are expected for children of this age. The reading of words is assessed using the Clay Ready-to-Read test and the spelling of words is a previously used measure designed to capture attempts at spelling as much as it is correct spelling. Generally, these results are consistent with previous research on the abilities of New Zealand children prior to school entry (Arrow, 2010; Arrow & McLachlan, 2014).

Table 3 provides the same information disaggregated by decile level. These data still require checking. However, initial analyses suggest that there are significant differences between decile levels that exist at school entry. The lowest school decile group of students are significantly poorer than both other groups on upper case letter sounds and lower case letter names, elision, and sound matching. On upper case letter names and lower case letter sounds there was a significant difference between the lowest and highest decile groups, but the mid-decile group was not significantly different from either of the other groups. There were no differences between the groups for reading words, spelling words or blending. For vocabulary there were significant differences between each of the decile levels.

These baseline data suggest that there are very real socio-economic differences between children, based on school decile levels. These differences occur before children have started their formal education. The significant difference between all three decile groupings in vocabulary development is particularly concerning as vocabulary is necessary for understanding what is read, as well as a key component of decoding strategy (Tunmer & Chapman, 2012). Notably, there were a small number of children whose vocabulary scores were too low to calculate the standard scores reported here; 15 of these children were evenly distributed across deciles 1-7 and only one from the high decile range. Some, but not all, of these children have English as a second or additional language. Across the other foundation components of letter names, letter sounds and phonological awareness the children in the lowest decile schools have the lowest levels of knowledge. The nature of the scores in the phonological awareness measures indicates that all children tend to have the base forms of phonological awareness, namely words and syllable awareness. However, the children in the mid and high decile schools tend to have more developmentally advanced levels of onset-rime awareness at Time 1.

We think the low scores for children in deciles 1-3 are not unexpected, and unfortunately, consistent with other research. This finding raises questions about the value of early childhood education experiences, especially for children from low decile schools and with limited literate cultural capital.

Table 3: Decile comparisons on Time 1 measures (subject to data cleaning)

Decile group	1-3 (n=119)		4-7 (n=115)		8-10 (n=121)	
	Mean	SD	Mean	SD	Mean	SD
Letter names						
Upper case	8.44	8.64	11.17	8.82	13.76	8.60
Lower case	7.22	7.93	9.90	8.60	12.48	8.64
Letter sounds						
Upper case	3.61	6.93	6.40	7.61	7.23	7.74
Lower case	3.42	6.64	5.68	7.45	6.93	7.89
Phonological awareness						
Elision	3.51	3.97	5.22	4.18	5.97	4.20
Blending	6.32	3.57	6.43	3.59	7.41	4.85
Sound matching	5.71	4.84	7.94	5.25	9.17	5.72
Reading	0.77	3.20	0.63	1.69	0.72	1.75
Spelling	0.43	2.69	0.15	0.69	0.13	0.59
Vocabulary	93.62	11.62	98.64	11.84	103.12	11.52

Challenges in the data collection with children

The numbers of children are less than what we had planned for in our selection process and in the schools' indications to us of the number of children that would fit our criteria for

participation on the project. It had been expected that we would have 450 children, but it we currently have 355. Current indications are that the attrition rate from time 1 to time 2 is at 2-3%.

Data Collection with Teachers

Data collection from teachers has involved interviews during March, and video filming of the in Time 1. Time 2 teacher data collection involves additional videoing of, and the completion of an online survey in place of an interview. Online surveys were considered a better option because teachers would be able to complete them in their own time rather than have to negotiate with a research assistant to find a time to complete a face-to-face interview.

An initial visual scan of the teacher knowledge data collected at Time 2 suggests that teacher knowledge of the linguistic structures of print language are as low as previously indicated in national and international studies (Carroll, Gillon, & McNeill, 2012; Washburn, Joshi, & Binks-Cantrell, 2011). In our project, for example, 50% of the teachers considered phonological awareness the same as phonics, and had difficulty accurately identifying the number of phonemes in words.

Challenges in the data collection with teachers

Some schools are not keeping children with the same new entrant teachers, despite being specifically requested to do so. We had asked that if children were expected to move after a term or later, that both teachers participate in the project. This has not always occurred and needs to be managed carefully to avoid alienating schools while at the same time trying to ensure the design requirements of the project are met. We are currently recruiting a small number of teachers who now have children in the project but who were not initially recruited. There will likely be implications for this. The biggest issue is that one of the implementation schools has not released a second teacher to attend any of the workshops.

The video data has been more time consuming than expected in terms of the logistics of managing large amounts of digital video data. As a result, the length of time between videoing and providing copies has been unsatisfactory, although this time lag is now being addressed. Some teachers have been concerned about the length of the survey at Time 2, perhaps not realising that we used a survey instead of an interview as initially proposed.

Additional workshops and programmes outside of this project occur frequently for all teachers. We will ensure that we keep information about teachers' attendance at such sessions to ensure we can control for varying amounts of information regarding literacy teaching and learning. We will add this to our Time 3 survey of teachers.

Workshops for the implementation group

To date we have held two of the five workshops for the implementation group. The first workshop, over two days in March, focused on the theoretical underpinnings of the project as well as oral language/vocabulary building and phonological awareness. The second workshop was held in May and covered the transition from the awareness of phonemes to beginning to read and spell. The third workshop, to be conducted in July, will focus on teacher knowledge for implementing instructional programmes with particular attention to explicit instruction on how words are constructed.

In the first workshop teachers were provided with the text, *Differentiated Reading Instruction: Strategies for the Primary Grades* (Walpole & McKenna, 2007). The book is for them to own and they are expected to bring it to each workshop. In each workshop we also supply a workbook that contains articles, along with reading activity guides for reading chapters from the textbook and the articles we have provided. The workbooks also contain templates and examples for understanding assessment data and for the planning lessons that draw on the assessment data analysis. Teachers are also provided with the data from the group of children in their classroom who are participating in the research project. The table of contents for workbook 1 and 2 are presented in Appendix 1.

Teacher reflections and feedback gained at the second workshops about the content covered in the first workshop were generally positive. Many of the implementation teachers have considered how to distinguish between whole class teaching and small group instruction, and have made changes accordingly. A number of teachers have implemented explicit alphabet instruction in small groups, based children's needs, instead of simply guiding children through a text. In some cases this led to no longer sending books home with children who were not yet reading, but sending home more targeted activities for doing with family/whanau. Others, whose schools did not have specific phonics programmes, had begun integrating the instruction into their small group work and selecting texts that reinforced the instruction. Previous practice meant that teachers selected a text and then decided what to teach based on what book they picked up from the resource room shelf that was at the right fluency level and had enough copies for the number of children in the group.

Other changes included selective whole class instruction on vocabulary building. This involved teachers choosing books (picture books or big books) with a plan for expanding vocabulary knowledge for all children. Although most teachers believed that language and vocabulary were the biggest challenges for them as teachers, they also assumed children knew the meanings of words. Their experiences between Workshop 1 and 2 led to the realisation that children did not necessarily know the meanings of words, and because of these teachers' assumptions, children often did not have a full understanding of books that were read to them.

Challenges

One of our challenges is to have all teachers access the project online support site. This site is located within the Massey University learning management system to ensure that teachers have privacy in their reflections and discussions with others in the workshops. The login requirements and the busy lives of teachers have meant that some teachers have not accessed the project site.

A second challenge at the teacher level is specific teacher engagement. A very small number of teachers have indicated that they find change difficult and that they are not finding it easy to manage change in their teaching practices. This is something that we will continue to manage through our workshop experiences.

Our final challenge is ensuring teachers and schools understand our request to keep the target children with the teachers, particularly within the implementation group. During the Time 2 data collection we became aware that some children have been moved out of the classrooms of some of the implementation teachers. Although we generally have the next teacher already participating in the programme, there are a few schools, involving around 15 children in the implementation group, where children have been moved to non-implementation classrooms. We are addressing this by discussing the issue with the schools. The worst case scenario is that we will have to drop the children in those classrooms.

Design

The evolution of the project, along with the challenges we have identified, suggests that a second intervention cohort should be recruited in 2016. This cohort will include the children in the classrooms of teachers who will take part in the workshop programme during 2016. The collection of assessment data is integral to the workshop programme and its focus on explicit instruction based on student need, which is necessarily identified through the types of assessment we are conducting. We also suggest a further design change which is intended to measure the sustainability of teachers' changes in literacy instructional practice. This design change would mean that we follow the teachers who were involved in the implementation workshops in 2015 and assess their 2016 children (2nd wave intervention). By following these children we will be able to identify if teachers continue to develop their teacher knowledge into the following year and implement changes to practice from the beginning of that year rather than during the course of the year as they have done during 2015.

In Table 4 the 352 children from the 2015 year (1st wave intervention and control) continue as originally planned. In 2016 we add two new groups of children, the first being 2nd wave intervention children, who are New Entrants in the classrooms of teachers who took part in the implementation programme in 2015. The 1st wave intervention (2016) group are

children in the classrooms of the teachers who were comparison teachers in 2015, but in 2016 are completing the implementation programme.

It would be expected that we would have the following outcomes:

1. The control group (2015) would have the slowest rate of literacy progress
2. The 1st wave groups (2015 and 2016) would have accelerated progress compared to the control group.
3. The 2nd wave group (2016) would have the fastest rate of progress as their teachers are implementing changes to progress from the beginning of the school year, not as they learn from the workshops.

Table 4: Estimated sample numbers with recommended design change

	2015			2016 ^b				2017
	Total	1 st wave Intervention 2015	Control	2 nd wave intervention	1 st wave Intervention 2016	2015 cohort followed	Total including continued	Totals
School numbers	39	24	15	24	15	-	39	39
Teacher numbers	60	38 (45 attended)	22	38	24	-	62	62
Children numbers	355	200	155	200	155	355	710	710

We recommend changing the design to examine sustainability in teacher practices and to improve sample numbers.

Budget implications

A revised budget that takes into account the design change is presented in Appendix 3. We have two breakdowns of the budget to ensure clarity across both the Ministry of Education’s financial year of July to June, and Massey University’s financial year of January to December. The revised budget is currently \$8,889 less than the original budget. The costs of professional time, scholarship and overheads remain the same. Changes, both up and down have occurred in the subcontracts and other direct costs section.

One change downwards is the budget for teacher release time. We had anticipated up to 80 teachers participating in the workshop implementation programme across the lower North

Island. At time one there were 38 different classroom teachers across the 24 implementation schools. We had a higher number of teachers actually attend the workshops. The higher number reflects the realities of school practices; although we had requested that children stay with one teacher over the school year, in many cases that is not possible. To maintain fidelity both the initial teacher and the following teacher of the cohort of children need to attend the workshops. Thus, although the numbers of teachers teaching the children at any one time have dropped, the number of participating teachers is actually higher. In the revised budget we have budgeted for 41 teachers across the 2015 year, and for 31 teachers for the 2016 year. This difference between the 31 budgeted and 24 existing comparison group teachers reflects the anticipated teacher changes that will occur in the existing comparison schools.

The cost of test administrators and their associated travel costs (captured in travel in other direct costs) have been much higher than anticipated. The revised budget costs reflecting the actual costs as realised for Time 1 testing and the teacher video observations. Travel costs rose with the addition of Taranaki as a research location. We were unable to recruit research for that region in time for the Time 1 start. As a result accommodation, travel and travel time costs were incurred that had not been anticipated. Budgeted costs are based on 90 minutes per child including preparation, scoring and actual assessment, for each assessment time. Teacher data collection is based on 240 minutes per teacher including video filming, interviewing, liaison with schools and post-video organisation, for each of the teacher video times. Additional costs of checking, sorting, preparing, carrying out data management, some travel time for research assistants travelling substantial distances, and training time are included in the costs as well.

Other changes in the subcontracts section include reductions in the expected costs of academic and advisory consultants. Within the other direct costs there has been reduction in the staff training costs, which are subsumed into the research assistant costs. Materials and consumables have reduced as we needed to purchase less assessment tools than the original sample size would have required. The costs of printing workbooks, which were originally put into this budget category, have been shifted to the printing budget line. Computing costs and courier costs have also risen. Computing costs are due to the larger data storage costs than originally planned for. Courier costs are due to the geographical spread of research assistants and the need to courier data sets back to the University safely.

Summary

The Early Literacy Project is currently collecting data for the Time 2 round of data collection. Although there have been a number of challenges the recommendations will address many of those challenges. The baseline findings of children show that there are no differences between children in the implementation group and the comparison group, with the exception of one phonological awareness measure. However, the baseline data comparisons across children based on school decile levels reflect very real differences in the knowledge and vocabulary levels of children in the lowest decile schools. This emphasises the need for this project as it recognises the needs of those children rather than the application of assumptions, as made evident in the feedback from teachers in the implementation workshops.

The implementation programme workshops are going very well with some very exciting feedback from participating teachers. It is too soon to tell if the feedback is resulting in specific changes in instructional practices. The first set of data that may illustrate some change is still being collected. As change does take time, the suggested design alteration will enable us to examine the stability of changes in teaching practices.

Further recommendations

We recommend that we consider how best to seek the assistance of Regional Advisors to support schools in their commitment to the project.

We recommend changing the design to examine sustainability in teacher practices and to improve sample numbers.

References

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Appendices

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Appendix 1: Letter from school data mail out in March

Dear

Please find attached a copy of the scores from the tests we carried out on the children from your class as part of the Early Literacy Project. We appreciate your ongoing support of the project and the way you have welcomed our research assistants into your schools and classrooms.

The data set gives the name of the children from whom we have collected information from, the date of which most of the assessments were carried out, and a column identifying which teacher, or distinguishing between classrooms. Blank spaces in any column mean that the test was not carried out, except for the reading and spelling scores, indicated below.

The first set of scores is for letter knowledge: upper case letter names and letter sounds (out of 26) and lower case letter names and sounds (out of 28). You might notice some differences between your scoring and ours which can be somewhat explained by the standardised manner in which we require our assessments to be taken and scored.

The next set of scores is for the Comprehensive Test of Phonological Processing. The attached CTOPP explanation sheet will give you more on what these scores mean, and what the test measures. These are followed by the results of the Clay word reading test we have used (out of 15) and a spelling test out of 18. There are also columns for each of these tests to indicate the number of letters or sounds children were able to attempt in each of them. In most cases, as you would expect, children were unable to attempt either test.

Finally, we have provided you with a receptive vocabulary score from the British Picture Vocabulary Scale, 3rd edition. An information sheet for this is attached. In some cases children were unable to be scored and this is indicated by a comment to this effect, or by the use of *** instead of the score. Some children will have a blank space and this will mean that they were not tested on it. It is important to note that scores are not reliable measures of overall vocabulary for ESOL students.

We will have our research assistants back to assess the same children again from the 1st of June through to the 26th of June. We hope you will be as welcoming as you have been.

Our processing of the filmed observations is taking longer than we had originally anticipated as the files are very large. We will be slightly delayed in returning your copy of the filming to you than we had indicated at the start of the year.

If you have any queries please don't hesitate to contact Dr Alison Arrow, whose details are below.

Yours sincerely,

Dr. Alison Arrow

BPVS (British Picture Vocabulary Scale)

What is it?

The British Picture Vocabulary Scale is a test that we have used with the children in the test to measure their vocabulary. The test is carried out using a specific picture booklet and assessor guide. Each page of the picture booklet has four coloured pictures; the child is asked to point to the “best picture” of the word that the assessor says aloud. The word items in the test get progressively more difficult, and it ends when children get 8 or more items incorrect out of each set of 12.

What does it measure?

The BPVS measures receptive vocabulary. This means that it is a measure of how many words children know the meaning of, rather than how many words they can use when talking. Receptive vocabulary is more important for literacy than how many words we can say aloud, or produce, and receptive vocabulary is usually larger than the productive vocabulary used by children. Receptive vocabulary aids in making sense of oral instructions in the class room, in having something to say in writing or oral language, and in making sense of text when read to, or when they are reading to themselves. It also helps with working out what unfamiliar words are when reading.

What does the score mean?

The BPVS provides a standardised score, which is similar to what an IQ score looks like and is calculated based on normative sampling of many children. In this case the normed samples are from the UK, but multiple uses of the test in New Zealand indicate that the scores are approximate for New Zealand samples as well.

The average standard score, at which point 50% of children are above and 50% are below, is 100. Most children will have a vocabulary standard score between 85 and 115. Very low standard scores can indicate learning difficulties and very high scores can indicate children who are very fast learners. The test scores should always be used with caution with children for whom English is not their first language, as it does not illustrate their full language capabilities across one or more languages.

It is impossible to identify the specific vocabulary words that children do or don't know and this test gives an approximate measure of expectation.

What are the possibilities for using the scores?

The standardised scores can also be used to calculate an age equivalent, based on 100 being the average for a child regardless of their age. In this case we are only providing standardised scores but the possibilities include:

- Identifying clusters of children with similar scores and targeting vocabulary instruction accordingly.
- Identifying a cluster of children who have lower vocabulary scores and targeting English vocabulary instruction for them specifically.
- Identifying children who may need further language assessment including the JOST.
- Identifying children who may need referral to the Speech Language Therapy system. Low receptive children are generally identified as higher need than productive difficulties.
- Identifying children with higher vocabulary scores who may benefit from instruction that includes more complex words to extend current vocabulary levels.

CTOPP (Comprehensive test of Phonological Processing)

Phonological Awareness subtests

What is it?

The CTOPP is a wide ranging measure of language processing that was developed in the United States. It has a number of subtests, but we are only using the Phonological Awareness subtests. In these assessments children are orally presented with words or parts of spoken words and asked to act on them. All three subtests get progressively more difficult, but the test is stopped when children make three errors in a row. The three subtests are elision, sound-matching and blending. Phonological awareness refers to being able to hear and manipulate sounds in spoken words. It is not a print measure but it is a well-established necessary, but not sufficient on its own, component of reading and spelling development.

What does it measure?

The sound-matching subtest measures how well children can hear sounds in words and identify words with the same sound in the same place, for example, being able to identify that *cat*, but not *ball* or *jump* starts with the same sound as *cup*. More difficult items ask children to identify which words ends with the same target sound. The blending subtest measures how well children can blend together given sounds to produce the word the sounds make, as you might if sounding out a word, but without the print. The assessor provides the sounds (we use a digitally recorded New Zealand accent set of sound items) and the child is asked what word it is. The elision subtest measures how well children can delete a sound segment from a word, which can contribute to the use of analogy in decoding and in spelling. Children are orally provided a word and asked to say it again but without a given sound (e.g., *cowboy* without saying *cow*, *cup* without saying /k/).

The different subtests have differing levels of difficulty. Sound-matching tends to be easier for younger children, followed by blending. Elision tends to be more difficult and it is usually only children who are already able to read who can manage the task. We are using this task across time to track phonological awareness development.

What does the score mean?

Each subtest has its own raw score that we provide. The score indicates how much control children have over language. High scores across all subtests indicate that children have good control over all aspects of language, except perhaps words that are not in their receptive vocabularies. High scores in sound-matching and low to mid-range scores in blending, is expected for New Entrants, as is a low score in elision.

Low scores across all subtests indicate that children will have difficulty hearing sounds in words and using them in ways that will contribute to reading and writing. Such children will generally need targeted instruction in phonological awareness.

Matching: Scores of 1-13 indicate being able to hear and match initial sounds in words. Scores of 14-26 indicate being able to hear and match final sounds in words.

Blending: Scores of 1-8 indicate that children can blend two syllables together. Scores of 9-17 indicate that children can also blend initial sounds and the rime (rhyming component) of words. Scores that are greater than 18 indicate that children can also blend individual phonemes together.

Elision: Scores of 1-9 indicate that children can delete a syllable from a 2-syllable words. Scores between 10 and 15 indicate that children can delete the first sound from a word. Scores greater than 15 indicate that children can delete individual phonemes in different positions in words.

What are the possibilities for using the scores?

We will be providing scores for these subtests across the year; these suggestions can be used now or across time.

- Clustering children based on phonological awareness needs.
- Identifying children in need of additional phonological awareness instruction
- Identifying children who have already well developed phonological awareness instruction and targeting other learning areas

Appendix 2: Contents page from Workbook 2

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Appendix 3: Revised budget

	Year 1	Year 2	Year 3	Total	7/14-12/14	1/15-6/15	7/15-12/15	1/16-6/16	7/16-12/16	1/17-6/17	TOTAL
Academic FTEs	s 9(2)(a), s 9(2)(ba)(i)										
James Chapman											
Alison Arrow											
Keith Greaney											
Bill Tunmer											
Jane Prochnow											
Total											
Professional Time	s 9(2)(a), s 9(2)(ba)(i)										
Salary Costs											
Super Costs											
ACC											
Total											
Scholarships											
Stipend x2											
Fees x2											
Total											
Subcontracts											
Teacher Release											
Test Administrators											
Academic Consultants											
Advisory Consultants											
Total											
Other Direct Costs											
Computing Costs											
Minor Equipment											
Materials/consumables											
Photocopying/Printing											
Postage and Courier											
Computer Software											
Staff Training											
Stationery											
Travel											
Dissemination Travel											
Total											
Overheads											
Central Overheads											
Department Overheads											
Total											
Project Summary											
Professional Time											
Scholarships											
Subcontracts											
Other Direct Costs											
Overheads											
Project Total	1,241,112				120,250	271,720	223,912	221,409	254,388	149,433	1,241,111