The iPod Trial Program at McCarthy Catholic College, Emu Plains
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October, 2010

Abstract
This paper explores the use of iPod Touches within a Catholic systemic high school setting in New South Wales, Australia. Unlike previous examples which have explored the concept of m-learning (mobile learning) from the perspective of student achievement in standardized tests, this study explored student motivation and engagement in the use of the devices. This report identified that students were significantly more motivated to learn mathematics when they were using the devices, and significant numbers of students felt that they were learning more when they were using devices as opposed to when they were not. However, contextual factors were important as well, considering the relative level of the students and the appropriateness of the apps (applications) being used.

Introduction
Traditionally, the implementation of technology has had a troubled history in schools. These areas of concern have often included issues related to the technical side of the implementation, and the burgeoning costs of such implementation, but they are just as likely to have involved matters relating to staff professional development, too. In addition, there are concerns related to the level of access - and the appropriateness of content and interaction - that are linked to greater use of technology within schools.

There have been numerous examples of schools and other educational institutions that have attempted to implement a technological innovation in an educational setting, but have come across unforeseen problems which have meant either the adaptation or even the abandonment of the program. Equally, despite the insistence by some parties about the educational benefits of technology, the research is still, at this stage, ambiguous and for every positive project there seems to be an equally negative example.

In this context, school systems and principals rightly approach new technological innovations within their schools with a degree of wariness, especially when one considers the fact that generally, technological innovation is an expensive business, both in terms of hardware and software, as well as human resources.

Context of the School
McCarthy Catholic College, located in Emu Plains, NSW, Australia is a medium sized catholic systemic school in the Parramatta Diocese. Currently there are approximately 750 students in Years 7-12, and a teaching staff of just under 50. McCarthy draws its students from the local Penrith area and also the lower Blue Mountains. In 2010, a trade training school was added to the site, which meant that students from as far away as Blacktown and Mt Druitt began to attend McCarthy.

McCarthy was originally a senior high school (years 11-12), but in the last six years it has become a 7-12 school. The students generally come from working class backgrounds, with parents that work, for the most part, in retail, logistics or manufacturing. The Emu Plains region has a low socio-economic score, meaning that students come from families that earn less than families in other regions, and in recent years McCarthy has had poor results in the NAPLAN assessments, the school certificate and the higher school certificate when compared to similar schools or other catholic systemic schools. These results have been particularly concerning in the mathematics faculty, with students failing to achieve the expected results regularly.

In late 2009, McCarthy appointed a new principal, Ms Robyn Meddows, who immediately set about improving the academic and pastoral quality of the school. As part of this quest for improvement, Ms Meddows, looked to change the way that McCarthy staff and students approached technology. This change in approach included issuing all staff with laptops for school use, the decommissioning of

computer labs in favor of more laptop machines able to be used in all learning spaces, and an insistence on moving towards a more efficient use of technology for student management systems.

The iPod Touch Program

In 2010, the executive of McCarthy Catholic College announced that the focus for 2010 would be on numeracy across the whole school. This was in keeping with one of the school's values, which stated that all teachers were responsible for literacy and numeracy education. To support this goal, a new mathematics coordinator was appointed in 2010 - Mr Ross Cutts. Working with the Religious Education and Learning Services team (Paul Stenning and Melinda Phillips) the mathematics faculty established a plan to improve mathematics at McCarthy. Part of this plan involved exploring the use of iPod touches for two reasons; firstly to improve teacher organization and record keeping, and secondly to increase student motivation, engagement and basic skills in mathematics.

The second goal was particularly important; as part of the REALS team's work, the mathematics faculty had identified, through an extensive 1:1 testing program, that one of the causes for the poor results in the national testing was that students were entering McCarthy from their primary schools with only a limited or superficial understanding of mathematical concepts like percentages, fractions and decimals. Compounding this factor, students also lacked skills in addition, subtraction, multiplication and division.

The iPod Touches were seen as a potential device for addressing these issues; originally 5 devices were purchased for the school, and each teacher of Year 7 mathematics was given the use of one. There was limited training given to teachers with these devices; instead, they were encouraged to take a ‘play and learn’ approach, where they experimented with different uses and applications (apps) to identify which worked well and which they could use in the classroom. This learning was developed by informal discussions between the staff members, sharing their findings with each other.

In addition, one of the staff members at McCarthy Catholic College was an Apple Distinguished Educator. He was able to get access to two class sets (20 devices) of iPod Touches for a loan period of two weeks to trial in the classroom. There are numerous other devices out there that could have been trialled, like students’ own mobile phones or MP3 players. However, the fact that McCarthy was able to get 20 devices of an identical nature from Apple without having to pay for anything tipped the scales in favour of the iPod Touches. In addition, growing numbers of students had their own iPod Touches, which meant that immediately there were opportunities for generalizing the program, should it prove successful.

Having established a two week window, the mathematics faculty set about preparing for the trial. This meant that teachers advised Keith Heggart, who was acting as technical coordinator for the trial, of the apps that they would like pre-installed on the device and he set up a math department iTunes account, and then proceeded to download the apps to install on the devices. In addition, a letter was sent home to parents advising them of the trial program, and stressing to parents that this did not mean that they had to purchase a device for their children. (A number of teachers had raised concerns related to this matter.) However, parents were encouraged to download the apps that would be installed on the loan devices, and a list was provided for them to do this. It is important to note that of all the apps used in this trial, they were all free apps, either completely free or ‘lite’ versions of paid apps. Again, this was a conscious decision on behalf of the mathematics department to keep the costs involved in the trial to a minimum.

In addition, the mathematics faculty and Keith Heggart had a day’s professional development time to consider how they might best use the iPod touches in the classroom.

Finally, every student who would take part in the trial had a preparatory lesson (led by Keith Heggart, where possible) where they signed up for an edmodo account via a laptop, and also undertook a number of activities aimed at reminding students about the correct ways to behave when online, and the appropriateness of different comments. In addition, students were briefed on the importance of cyber-safety and also signed a user agreement regarding the use of the iPod Touches.

Literature Review

It is important to situate this research project within the wider context of research on educational technology. First and foremost, it is important to remember that educational technology has had a limited history; while technology has revolutionized much of the Western world, schools generally have struggled to keep in touch with this revolution. Strommen and Lincoln write, 'Although the schools are embedded in our culture and reflect its values, the technological changes that have swept through society at large have left the educational system largely unchanged. In the course of 20 years, a dramatic rift has opened between the process of teaching and learning in the schools and the ways of obtaining knowledge in society at large, a rift made obvious by the fact that the process of teaching has not changed substantially, even in the past 100 years' (Strommen and Lincoln, 1992, p467). Of course, in the years since the publication of that particular article, vast amounts of time and money have been spent attempting to gain the largest educational benefits from the use of technology.

Perhaps one of the best known (and certainly one of the most commonly cited) projects is the Maine Learning and Technology Initiative, which provided laptops to thousands of students in Maine, USA. However, the results from the MLTI have been ambiguous, to say the least. Silvernail and Gritter comment that 'overall performance on the 8th grade Maine Education Assessments (MEA) has not changed appreciably since the inception of the [MLTI]' (2005, p4). In addition to that, Silvernail and Lane (2004) comment that while the laptops were issued to all schools in Maine, some schools were far more successful in using the laptops effectively than others.

Another large scale program, the Texas Technology Immersion Pilot (TIP) involved 22 schools trialling a 1:1 laptop program at the cost of US $14.5 million. This program, according to Sharpley, did not meat the expectation. Shapley wrote 'Students' access to and use of laptops for learning within and outside of school continued to fall well short of expectations in the fourth year' (Shapley et al, 2007, p 85). Furthermore, on the affective side of education, Shapley writes, 'Across four evaluation years, there was no evidence linking Technology Immersion with student self-directed learning or their general satisfaction with schoolwork' (Shapley et al, 2007, p 84).

In Australia, it was a much publicized part of the 2007 Labor Government's campaign that there would be an 'education revolution', with every Australian student to receive a laptop. It is far too early to judge the effectiveness of this roll-out in terms of learning outcomes, although there is already anecdotal evidence of laptops sitting in storage rooms, unable to be used due to not having the infrastructure required. For examples, see http://www.theaustralian.com.au/news/nation/rudds-high-school-laptop-pledge-falls-short/story-e6frg6nf-1225837518298

In summary, Weston and Bain argue that there seems to be little evidence for the adoption on 1:1 laptop programs. They write, 'Evidence compiled over the last decade, shows a diminutive effect of 1:1 computing on teaching, learning, and student achievement across schools, districts, and states' (Weston and Bain, 2010, p 6).

In the face of these studies, it is understandable that teachers and administrators are hesitant to adopt 1:1 laptop programs. However, a new model that has become popular in recent times is what has become known as 'm-learning' or mobile learning. In schools that have adopted this approach, students are issued with handheld devices, like the iPod Touch. The iPod Touch has a number of advantages over other devices, like mp3 players and mobile phones. In particular, the iPod Touch has access to the app store, Apple's online application store which has over 60 000 different applications for sale or free download, many of which are educational in nature. One of the significant weaknesses of the iPod, especially for educational applications, is that the first 3 generations do not have a camera.

Regardless, a number of schools - both in Australia and overseas, have adopted trials of iPod Touches. For example, see http://www.dailytidings.com/apps/pbcs.dll/article?AID=/20100720/NEWS02/7200309/-1/NEWSMAP. In another example, the State Government of Victoria has conducted a trial into the devices, recognizing that, 'Primary school children today use mobile portable devices as a matter of course in their

lives outside school. While the gap between technology devices used in everyday life and those used in schools continues to widen, many schools have decided to trial mobile devices in an effort to keep pace with emerging technologies' (Murray and Sloan, 2008, p3).

Some of the key findings from the Victorian report included the following: 'Handheld devices have stimulated both teachers and students to work creatively together to improve literacy and numeracy. The use of the iPod Touch has encouraged student interaction in blogs, podcasts and Web pages, and it has been particularly important in encouraging reluctant and ESL learners. All three schools have plans to purchase handheld devices to extend their integration as natural learning tools for today's students.' (Murray and Sloan, 2008, p1).

One of the key themes that is prevalent in the literature is the importance of preparation for 1:1 learning programs. It is not simply enough to issue students with laptops and expect learning outcomes to improve; rather, schools as a whole must consider the pedagogical and practical implications of such a program, realizing that its implementation will require a significant change of practice if students are to make the most of the educational benefits present in the technology. Clearly, laptops and iPod Touches cannot - and should not - simply be the 21st Century equivalent of textbooks and exercise books, with teachers uploading worksheets, which are downloaded by students before being emailed back to teachers. Rather, teachers must have the skills and knowledge to utilize the unique benefits intrinsic in laptops and other educational technologies.

Methodology

As noted in the review of appropriate literature above, the use of iPod Touches is not a particularly recent idea. However, much of the research has focused on the effect of iPod Touches on improving learning outcomes. This research project, while it was hoped would address these issues as well, was more closely aligned with exploring student motivation and engagement using the devices in a mathematics context. Therefore, it was appropriate for the researcher to take an interpretive, subjective approach to this research, dealing as it did with personal feelings and emotions towards the iPod Touches and mathematics in general. Rather than seeking to answer the question, 'Do iPod Touches improve learning outcomes for Year 7 students in mathematics?', which would dictate a more objective, positivist research paradigm, this research project was exploring the question, 'How effectively does using iPod Touches motivate Year 7 students to learn mathematics?' In addition, there was another, metacognitive element, which could be encapsulated by the research question, 'Do Year 7 students feel that they were learning mathematics more effectively when they used the iPod Touches?'

This interpretative approach to research fits neatly with some of the stated aims of the Catholic Education Office of Parramatta, which is in the process of encouraging a more constructivist approach to pedagogy, where students are encouraged to reflect on their learning and the process for learning, throughout their education.

There were two main sources of data for this research project. Firstly, the teachers of Year 7 mathematics were a source of data. There were 5 teachers of Year 7 mathematics, ranging from less experienced teachers (teachers with less than 3 years of experience) to more experienced teachers (teachers with more than 10 years of experience). Due to the structure of the timetable at McCarthy Catholic College, a number of these teachers were also responsible for Year 7 science classes. Three different methodologies were used to gather information regarding the perspectives of the teachers; firstly, an evaluation survey was distributed in the week following the conclusion of the trial. Also during that week, a number of staff were interviewed (on camera) by the researcher, in a semi-structured format. Finally, during the trial, the researcher also kept field notes regarding his observations of the teacher's use of the devices.

The second source of data was the Year 7 student themselves. Although during planning all year 7 classes were intended to take part in the program, only 3 year 7 classes really had a significant opportunity to use the iPod touches due to other school events conflicting with the program. For the

purposes of this research, it was determined that students needed to use the devices at least 3 times over the course of the fortnight for it to constitute a significant opportunity. This meant that the number of responses to the student survey was limited to 64 students, which, admittedly, is a small sample space.

Data was gathered from Year 7 students in much the same way as from the teachers; that is, there was an evaluative survey, a number of interviews were conducted and the research kept field notes of the students' learning during mathematics lessons. It is important to point out that the evaluative surveys for teachers and students were different, in both content and format. Whereas for the teachers, the survey focused on matters relating to the use of iPod Touches within their classroom and for personal organisation and requested responses in a qualitative, open-ended manner, the students surveys used a Likert scale and restricted the questions to the impact of the iPods on students' perceptions of their own motivation and learning. Although there was room for students to write their own comments, I was particularly interested in looking at the trends in the quantitative aspects of the data.

Results

From the very first overview of the data, it is immediately apparent that, for both the staff and the students, the iPod touch program was overwhelmingly popular. The vast majority of students responded positively to each of the questions asked in the survey, and staff were fulsome in their praise of the iPod during both the surveys and the interviews. It is important, however, to further analyse these findings to begin to understand what features of the program were responsible for this positive reception.

The first five questions asked of the students required them to rate their response to a statement using a Likert scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, and 5 = Strongly Agree.

The results from this part of the survey are presented in the table below:

Statement	1	2	3	4	5
I have enjoyed using the iPod Touches.	0%	0%	7%	27%	66%
I feel like I have learned a lot using the iPod Touches.	0%	2%	22%	20%	56%
The iPod Touches have made me more interested in learning Maths.	2%	9%	8%	20%	61%
I enjoy playing games on the apps on the iPod Touches.	0%	0%	8%	24%	68%
I think we should use the iPod Touches more in Maths.	0%	0%	3%	7%	90%

These results are interesting for a number of reasons; firstly, it is clear that the vast majority of students enjoyed using the iPod Touches. More than 90% either agreed or strongly agreed with that statement. However, more gratifyingly, at least from an educational perspective, more than 85% either agreed or strongly agreed that they had learned a lot by using the iPod Touches. This question was closely linked to the improvement of basic skills as mentioned above; as most of the apps that were installed on the

devices were apps that catered to these kind of basic skills (number concepts, fractions, decimals, percentages, times tables, mental mathematics) in a kind of game format, it was hoped that students would engage with these apps and hence develop the basic skills that they had failed to do so previously.

This theory appears to be borne out by statement number 4. This statement was inserted to identify what it was that students enjoyed about the iPod Touches; that is, was the technology a motivating factor in and of itself, or was is the application of that technology (in this case, playing games) that provided the impetus for engagement. 92% of students suggested that they agreed with the statement saying that they enjoyed playing games on the iPod Touches which appears to be a ringing endorsement of this approach.

Students were also asked, quite explicitly, about whether the iPod Touch program had increased their motivation in learning about mathematics. 81% of students either agreed or strongly agreed that it had, but it is important to note that this question also had the largest percentage of disagreement - 11% of students either disagreed or strongly disagreed with this statement. Although not a large percentage when compared to those who agreed, this result suggests that, while the iPod Touches have engaged a large number of Year 7s, they are only part of the solution, and other methods will be required to motivate the remaining Year 7s.

It is also important to note that 22% of students responded with 'Not Sure' when asked whether they felt they had learned a lot using the iPod Touches. This could be for a number of reasons; students often feel like they have only learned something when they have written it down. To some students, the idea of playing a game might have seemed like too much fun to be 'learning'. Equally, students might feel unconfident assessing their own learning during this program, preferring teachers to do that. This, clearly, is a broader issue than this research project, and is related to the school culture of learning and teaching.

As interesting as the statistical data regarding students evaluation of the iPod Touches, I think their qualitative responses are even more illuminating. After completing the above scale, students were given the opportunity to respond to the following questions:

1. Which apps do you think were the most useful in helping you learn?
2. Why do you think these were the most useful?
3. Which apps do you think were the least useful?
4. Do you think you learn more using the iPod Touches? Why or why not?
5. Do you have any further comments to make about the iPod Touches?

Through close analysis of the responses, it is possible to identify that students responded both to how they felt that the iPods improved their learning, and why the iPods improved their learning. For example, a number of students commented that they found that the apps were useful because they 'made me faster at answering questions' or something similar. Other important responses included students commenting that 'I found the activities mentally challenging' and 'I liked finding out right away if I was right'. All of these comments pertain to the idea of how the iPods improved learning, which generally revolved around the concepts of revision and drill. However, as to the why the iPods improved learning, most of the students were united in one common theme: the iPods made learning mathematics fun. Some of the comments linked to this theme were 'It made learning fractions fun' and 'it made learning maths fun.'

Although fun doesn't necessarily indicate learning, it is important to consider that, when looking for engagement and motivation, student enjoyment is a good place to start.

The results from the teacher interviews and surveys were equally informative. Of the 5 maths teachers involved in the program, 3 completed the surveys, and 2 of these took part in interviews. Although the teachers were very positive about the experience, it perhaps shows the time constraints placed on the average teacher in their daily routine that they did not feel they had sufficient time to complete the survey.

The teacher evaluation survey was split into two different categories - the first relating to the teacher's use of the devices as personal organizational tools and the second relating to their experiences teaching with the iPods. In the first category, teachers commented on how effective they found the devices. Some of the comments were, 'It was great. It synced all my emails and calendars, plus I have my timetable on it' and 'Very effective - especially educate (one of the apps) for the mixed class and for skill tracking as I moved around the room.' Teachers used the apps for a lot of different reasons, including taking notes at staff meetings on them, engaging other staff members in discussion via Edmodo (another app), browsing the internet and checking the weather!

Teachers were then asked to comment on which apps they found most effective. I have appended this list to the end of this report. Some of the staff did raise concerns that they felt there were some apps that were a little bit too simple for the students; in particular, ones like the 1 minute maths test were too easy (in the teachers' opinion) for a number of students. It is interesting, but perhaps not surprising, to note that students did not raise this concern. Another concern that some of the teachers raised was that a number of the apps had advertisements showing while students completed the work, which teachers felt was not appropriate, especially when the advertising encouraged students to download other, more adult-oriented apps.

Generally, the staff members used the iPods in short bursts, either at the start of the lesson as a kind of 'warm-up' and then at the end of the lesson to consolidate the learning, although a number of staff members did attempt to use them for longer periods on occasion. When asked what was the most effective way of using the iPods, staff members replied that short bursts were effective, especially when the iPods were used in pairs, with each member of the pair competing with the other for high scores.

There were a number of concerns regarding the iPod Touchs, including the fact that the batteries seemed to run down very quickly when the iPods were used in every lesson during the course of a day. In addition, a number of staff members were worried that students were capable of changing the settings, and in fact one student managed to lock out other uses by setting up the iPod that he was using with a passcode that only he knew. However, these minor incidents aside, the implementation of the program was generally trouble free.

When asked if they would recommend getting class sets of iPod Touchs, all teachers responded positively. Some teachers felt that the devices would be best used in Years 7 and 8, or with lower ability groups in Years 9 and 10. Finally, a number of teachers commented on the changed classroom atmosphere to using the iPods, suggesting that the students were highly motivated about their maths learning when they were using the devices.

Discussion

Although the program was an unmitigated success, it did highlight a number of areas that require further exploration and development to ensure that, should McCarthy Catholic College head down this path, the iPod Touches are used as effectively as possible to promote learning within the school.

Firstly, and most obviously, it must be recognized that the devices themselves are costly; even the smallest device retails from more than $200. If the school chooses to invest that money, then it is a significant investment to buy even one class set, although when compared to purchasing a class set of laptops, it is much cheaper. Should parents have to purchase the devices, then that is an additional cost on top of school fees, and the school executive will need to be aware of the necessity to convince parents of the educational benefits of the devices. Mitigating this factor is the fact that, at least in McCarthy, many students already have their own device, which could be adapted to school use.

Another question raised by the staff involved in the trial is how much of the motivation and engagement we saw in the students was because of the novelty of the devices, and if it was, would this wane over time? Personally, I'm not convinced that this is a major issue - if the iPods are used correctly. Certainly, if teachers sought to replace textbooks and other pedagogical resources solely with the iPod, then student

interest would lessen over time. However, using the iPod touches sparingly - in short bursts, as mentioned above - to develop particular skills and understandings would ensure that the devices remained fresh. In addition, the downloadable apps - of which there are many thousands, with more being added regularly - would ensure that there are always new ways to revise and learn concepts.

However, the downloadable apps raise another concern - that of students altering the settings so they replace their school's iTunes ID with their own, and then download apps that they want to play, rather than the ones recommended by their teachers. There are a number of ways of addressing this problem; firstly, good practice would dictate that teachers should be constantly mobile in the classroom, looking at what each student is doing on the device that he or she is using. Secondly, after this had happened during the trial, teachers identified that it was possible to set up the devices so that we could lock students out of access to the settings, and therefore prevent them from doing this. This would also stop students accessing other things like the passcode or other apps that were not directly linked to mathematics.

Conversely the study highlighted significant positive aspects, as well as opportunities for further study of the educational possibilities of the devices. Firstly, a number of teachers commented on the fact that the program itself was simply not long enough. Although they were able to gain an idea of the use of the devices, they would have enjoyed the opportunity to further examine, in greater detail, some of the opportunities afforded for the device. When questioned about the length of time they would have preferred, answers ranged from a month to a term. Linked to this issue about not having enough time with the devices was the calendar devised for using the devices. When working out how best to share the devices around the Year 7 classes, Keith Heggart created a schedule where each Year 7 class had the opportunity to use the devices between three and four times over the 2 week period. Unfortunately, due to the nature of the school's timetable, most Year 7 classes were timetabled at the same time, so if one class was using the iPods, that meant another class would not be able to use them at that time. This effectively limited the number of times the iPods could be sued.

WIth hindsight, although the method outlined above was equitable, it would perhaps have been more effective, from a research perspective, to have kept the devices with one class for the duration of the trial period. Although this would have meant that these students would have had experiences that the other classes did not, it would have provided a much clearer picture of the capabilities of the iPods. Furthermore, a number of teachers and students commented on how useful the iPod Touches would be in other classes, not just mathematics. In particular, science was mentioned as a subject with a lot of potential for iPod integration. If one class of students had kept the devices, then there would have been opportunities to explore this.

One of the particular strengths of the iPod touches was the emphasis on basic skills. In this case, the context of McCarthy Catholic College is important to take into account. As already mentioned, most of year 7 students had failed to master the basic skills expected of them at the end of primary school. Therefore, the basic skill apps - ones which focused on things like times tables, mental maths, fractions and decimals - were eminently suitable for Year 7 students. They enjoyed the games like approach to the apps, and competed with each other to reach the highest score. Their teachers spoke of their understanding of concepts linked to these apps improving, and something that will be interesting to examine in future studies is whether the use of these devices has a significant impact on student test scores, although that is outside the bounds of this trial program.

However, it should be recognised that not all students at different schools might find the apps so engaging; students that were already at a level requiring more conceptually challenging levels of mathematical understanding might find the apps far too simple, and thus remain unengaged. The challenge for educators, then, in this instance, is to find ways that the iPod Touch can still retain relevancy in these instances. Personally, I have no doubt that it could: there must be ways to use the device for more problem solving applications and investigations than simply as a games device, but, again, these are questions for a future study to explore.

Finally, it is vital to mention the importance of immediate feedback. Most of the apps provided students with immediate feedback as to whether they were write or wrong. This might simply have been a red cross, or, in the case of number line, the numbers do not remain on the number line if they are placed in the wrong position. Following this, students have another chance to get it right. This idea of appropriately-leveled challenge, which gradually increases, as well as feedback for students about whether they are right or wrong are an essential part of the learning process for students.

Conclusion

It would be wrong to say that iPod Touches are going to replace teachers; it would even be wrong to say they are going to replace classrooms. Rather, what this trial progam has shown is that iPod Touches can be used as part of a teacher's tools to engage and motivate students, and to increase their understanding of basic skills. It is important to remember that this trial was quite a small project, involving less than 100 students and only 5 teachers. However, it has provided significant positive results, as well as identifying areas for future exploration.

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Appendix A: List of Apps Used in the Program

1. Sequences
2. Mental Maths (Lite)
3. Sums
4. iReview
5. Equation
6. CalcDrill
7. GraphCalc
8. BrainGym (Free)
9. Freddy Fraction
10. Fraction Factory
11. Math City (Lite)
12. Timeline