

SABBATICAL REPORT

The impact of 1 : 1 learning on student engagement, achievement and the teaching and learning environment.

**FRAZER MAILMAN
MASTERTON INTERMEDIATE SCHOOL
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WHAT IS 1 : 1 LEARNING?

1 : 1 learning is defined 'as an environment where students and teachers have around the clock use of a notebook computer as well as online and offline access to educational software and digital authorizing tools'. (An Overview : Implementing a Successful 1 : 1 Learning Programme - an Apple Publication).

PURPOSE

The purpose of the sabbatical was to investigate whether or not 1 : 1 learning has an impact on student engagement and student learning as well as looking at the implications for schools in the delivery of the curriculum and in the structures within the schools. I also wanted to gauge whether or not regions were developing more digital environments within schools in the region. This was essential in further developing a funding proposal for local District Councils and Trusts.

BACKGROUND

Over the last eight years I have been involved in the provision of professional development for all teachers within the Masterton Primary Schools Cluster. This has involved the running of the Ministry of Education ICTPD cluster, attendance at Learning @ School and U-Learn conferences as organizing opportunities for teacher development in the use of ICT within their classroom. These included:

- The provision of seven Master IT Conferences that catered for 90 plus teachers over a two day workshop.
- Organisation of attendance at I-School and Apple Bus Tours.
- Locally delivered professional development support for our ICT lead teacher groups.
- Student development through a Master Kids programme.

METHODOLOGY

The investigation led to the following approach being used:

- The identification of schools that were developing 1 : 1 programmes within their curriculum.
- The development of questionnaires for students, teachers, principals and parents.
- The visits to the identified schools where interviews were conducted with principals, teachers and surveys of the students and parents (where possible).

The following questions were asked in one form or another:

- What people think about students entering a 1 : 1 programme?
- In what way has the 1 : 1 changed the way students and teachers feel about school work and in what areas has it assisted the most?
- What were the advantages / disadvantages of having 1 : 1 access to a computer?
- How has it affected the relationship between student / teacher and student / student?

- How have schools gone about developing 1 : 1 programmes particularly in relation to finance, getting parents / staff on board, level of technical support and transition into college?

FINDINGS

SCHOOL A

This Year 1 – 8 school situated in a rural community has been involved in a 1 : 1 programme at Year 7 – 8 for eighteen months. The introduction to the school was brought about by the principal's vision developed through an ICT contract and a visit to United States. With the growth in teacher skills brought about by involvement in the ICTPD contact and the accessibility to a laptop, there was an increasing frustration in not being able to develop student skills because of the lack of hardware in classrooms.

Key Findings

- That there was a high level of excitement from the students about entering a 1 : 1 programme and evidence that their attitude to school and to school work has improved considerably.
- That 91% of students felt it was extra important or essential to develop skills required to use a computer in their learning.
- That the use of their own laptop has greatly assisted students in their ability to write in a variety of genre and in their ability to develop more effective research skills. Data across year levels reflect increases in achievement.
- That the level of engagement of students has increased particularly in boys, and this has led to different classroom tones and minimised discipline issues.
- That the role of the teacher is evolving to one of facilitation and guidance of students in how to learn. Teachers were perceived as learners working alongside students to problem solve. No teacher wanted to go back to former role.
- Communication between student / teacher / parent has improved particularly in use of email and web 2.0 environments.
- Transition to college has become easier with the local colleges working together to ensure 1 : 1 learning opportunities exist when students move on.
- Increased conversations between parents and teachers.

Funding Stream

- The school has 70 laptops in the 1 : 1 programme and they are leased to own. The funding has come from three sources
 - 1/3 from a local trust
 - \$100 per year from parents. This has had a 90% uptake and allows families access to the laptop 24/7.
 - Operation Grant.

Technical support has not been an issue. The laptops are covered under the schools insurance policy. No additional warranties have been taken out.

Future Direction

- To maintain computers and sustain what is currently there.
Look at expanding what school is doing in relation to multi media.

SCHOOL B

School B is a state integrated Year 1 – 8 preparatory school situated in a large town. Each student from Year 7 – 8 has their own PC with the 1 : 1 programme having run for three years. Several factors determined the school’s direction among which were the potential exposed through the ICTPD contract, the keenness of staff to have a go and IT seen as a vital tool for the future. It was also seen as a point of difference to other providers and as such provided good marketing opportunities.

Key Findings

- That, like School A, there was a high level of excitement about having a 1 : 1 programme and that the attitude to school and school work had improved. 85% of students indicated that they had improved their attitude and the way they felt towards school.
- 97% students felt it was important or essential to develop their IT skills.
- In this school maths was the curriculum area that students felt that the computer had helped them develop the most. Maths On Line and Mathletics programmes were very popular.
- Teachers noted that in writing students were more willing to take risks as they had the ability to make the changes. There was more immediate reflection.
- The success of the 1 : 1 programme has increased demand for computers across the school. The current ratios:

| | |
|----------|-------|
| Yr 7 – 8 | 1 : 1 |
| 5 – 6 | 1 : 2 |
| 4 | 1 : 1 |
| 3 | 1 : 3 |
| 2 | 1 : 3 |
| 1 | 1 : 5 |
| 0 | 1 : 5 |

Principal identified 1 : 1 throughout the school as a next step.

Funding Stream

- The school financed the PC’s through locally raised funds. A tuition donation of approximately \$800 per term certainly assisted in the purchase of the hardware. Technical support was provided within the school’s staffing and they had a monthly contract with a local supplier.

Future Direction

- All staff wanted to further develop the 1 : 1 programme throughout the school, with the students being particularly in favour - 97% were in favour of its development.

SCHOOL C

This intermediate school is situated in a large city and has been involved in a 1 : 1 programme for three years. In that time the number of classes evolved from two classes to four, with more and more parents showing a willingness to pay for the laptops, to ensure that their child has access to the technology. When questioned about the issue of equity the school indicated that by developing the 1 : 1 programme it has allowed increased access to the schools IT resources to the non 1 : 1 classrooms. This has seen two computer suites developed, four to five computers in all classrooms and the school employs an ICT specialist. The development of IT and in particular 1 : 1 classes was deemed important in keeping parity with other schools who were developing similar options within their schools.

Key Findings

- Like the other schools surveyed there was a high level of excitement about being in a 1 : 1 programme and that, with the exception of 1 student, all students had changed the way they feel about school.
- The school allows students to opt out of the programme after one year but this has not happened. The majority of students felt they would be disadvantaged in their learning if they didn't have immediate access to laptops.
- The development of research skills and the gains in students ability to write creatively were seen as very positive steps. The students also were developing their E portfolios and having immediacy in access allowed this to happen.
- The school reported that there were no behavioural issues in laptop classes reflecting a higher level of engagement.
- There was a certain amount of apprehension by the teachers in teaching in a digital environment and they have found that they have had to change the way they teach. To improve the quality of the teaching in the digital environment has required significant professional development and the school has also developed a mentoring programme for the teachers.

Funding Stream

- The 1 : 1 programme has been funded through parental payment. The percentage of parents paying for their child's laptop doubled over a three year period.
- Students not in the programme have had access to computers increased (as a result of that increase).
- Technical support is provided by an outside provider as well as employment of a teacher with specific technical skills.

Future direction

- To increase the number of laptops classes from 4 to 5 in order to meet the demand.
- To change from Apple to PC in order to give greater accessibility and costing for parents to purchase.
- To reinvest in other technologies.

After being involved as a participant of an Apple Bus tour, visiting best practice schools which were digitally enhanced, the school's principal looked at ways in which he could further increase the opportunities for students in his school to have access to computers. The school already had a large number of laptops but a meeting of parents informing them of the benefits of increased access to digital technology led to the introduction of 1 : 1 computing in the Year 7 and 8 classes. Parents paid for their child's laptop therefore increasing the availability of laptops in other year levels to the point where all students are on 1 : 2 situations in their classroom. It increased the equity of access.

Key Findings

- Like all the schools involved in the survey there was, and still is, a high level of excitement about being in a 1 : 1 learning programme. Attitudes to school and their learning had improved markedly.
- There was a noticeable difference in the students who have come through previous digital environments to those that didn't. The new ones get side tracked by the 'Wow' stuff, the others had 'got over it' and were more focused on the tasks.
- Like the other schools the curriculum areas of literacy, maths and social studies were enhanced by having greater access to laptops. In answering the question what areas of the curriculum helped you in the responses were:

| | |
|----------------|-----|
| Literacy | 38% |
| Social Studies | 26% |
| Maths | 17% |
| Art | 11% |
| Science | 8% |

With mathematics being the major focus for the year there could possibly be changes to those figures if students responded later in the year.

- With classrooms having increased technology in their room half have had to change the way they teach and manage the classrooms. Initially new teachers in digital classrooms have to get to grips with the impact and implications of having the levels of technology available. Once that occurs it opens up all sorts of possibilities in delivering the curriculum.
- Up until 2009 school policy hindered the use of online options such as google, docs and wikis but since a change greater opportunities are being used to show case students work online.

Funding Stream

- Students in the 1 : 1 programme purchase their laptop from a local retailer who the school have developed a relationship with.
- The laptops in other classrooms who are in 1 : 2 programmes, are leased through the school.

Future Direction

- The school is very keen to keep the momentum going by increasing the capacity and capability of digital environments.
- The school will be employing two staff with two management units to assist in the professional development and also the provision of technical assistance. ICT communiqués are to be placed out on a fortnightly basis.

SUMMARY OF FINDINGS

- The four schools that were surveyed all displayed an enthusiasm for the direction that they were taking and it was reflected in the excitement of the students that were involved in the 1 : 1 programme.
- The level of engagement, particularly amongst boys, was greatly enhanced, and it was reflected in minimizing behavioural issues that the teacher had to deal with.
- The teachers involved in 1 : 1 programmes, a number of whom were in the first year in a digital environment, were enthusiastic and enjoying the challenge of changing the way they teach. All indicated that they would find it difficult to go back into a conventional classroom setting.
- 96% of students indicated that their respective schools should continue to develop the implementation of 1 : 1 programmes as they believe having immediate access to a laptop assists their learning.
- The curriculum areas that students feel that the 1 : 1 programme has assisted their development are writing, inquiry, maths and to a lesser degree reading. Access to online programmes, particularly maths, was evident in all schools.
- The funding of 1 : 1 programmes was approached in different ways. Assistance from trusts, payments in full by parents, and allocation of school funds or a combination of all ensured that the 1 : 1 programmes could be implemented. All schools visited expressed the desire to grow the programme throughout the school.
- The 1 : 1 programme implemented in the school increased the access of ICT technologies to other year levels in the school thus addressing the equity issues surrounding 1 : 1 programmes.
- 1 : 1 increase digital opportunities for all of the rest of school
 - more gear
 - increased teacher competency
 - increase in student skills.

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