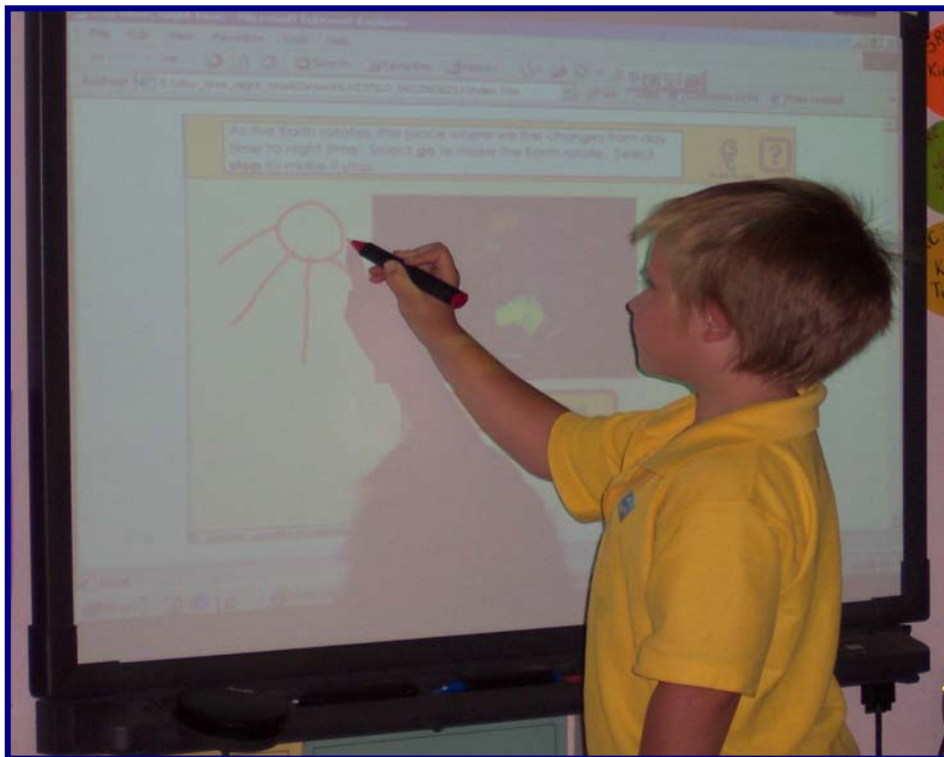


Report on a Pedagogical Trial of Learning Objects in ACT Schools



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December 2003



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EXECUTIVE SUMMARY

This document reports on an investigation into the effectiveness of different pedagogical models for integrating learning objects into classroom practice. Science, maths and literacy learning objects developed by The [Le@ming](#) Federation were trialled as well as one learning object from e-magine's Open source IT modules from Tasmania.

The learning objects were trialled in seven ACT schools with students ranging in ages from 5 to 17. Trial schools were four primary schools, two Year 7 to 10 high schools and one youth detention centre. The trials were conducted in both classrooms and computer labs during the first half of term four for a maximum period of six weeks due to time and event constraints in schools during the remainder of term four.

The pedagogical frameworks for trialling the learning objects varied considerably, depending on the prior experiences of teachers, their familiarity with contemporary pedagogical theory and whether the teachers had been involved in the initial development of trial units of work at the beginning of the year.

Data was collated from three different evaluation forms completed by teachers at the end of the trial. This data was compiled into graphs and has been combined with narrative and anecdotal evidence to indicate the effectiveness of the learning objects as an ICT pedagogical tool.

Recommendations:

That the Department of Education, Youth and Family Services:

- 1) release Learning Federation learning objects on CD-ROM for all schools to access early next year.
- 2) facilitate a series of professional development workshops for teachers under the auspices of Curriculum Initiatives and the 'Embedding Learning Technologies' Program to explore effective ways of integrating learning objects into classroom practice.
- 3) undertake a formal trial of various Learning Content Management Systems to inform a recommendation to ACT education regarding the most appropriate system for online deployment of learning objects to all ACT government schools.

1.0 INTRODUCTION

1.1 Background

At the beginning of 2003, a Learning Object Awareness Program was established with a Project Officer working under the umbrella of Curriculum Initiatives and the Centre for Teaching and Learning Technologies. This initiative was established to prepare ACT teachers for the release of learning objects by The [Le@rning](#) Federation. It was apparent that there was a clear need to inform teachers about the concept of learning objects and their integration into classroom units of work. The program consisted of workshops for teachers at the CTLT, presentations at school staff meetings, the development of units of work integrating learning objects, and a professional learning module accessed online through the ACT teachers' website – ACTivatED and on Leading Practice in Technology CD ROM.

The program was extended until the end of the 2003 academic year, the scope of workshops expanding as Stage 1 maths and literacy objects were released by The [Le@rning](#) Federation in semester 2. In September, 2003, the ACT [Le@rning](#) Federation Steering Committee approved a pedagogical trial of learning objects by several schools in order to gain insights into teachers' perspectives on how to integrate learning objects into their classroom practice. This report focuses on the pedagogical trial undertaken in Term 4, 2003.

1.2 Scope of the Report

Data for the report was collected from six out of the seven proposed trial schools. Unfortunately, two teachers from one of the high schools failed to submit any evaluations as requested but feedback from the other six was able to provide sufficient data for tables. These two teachers had originally developed a series of lessons based on three of the Year 9-10 science learning objects (see Appendix F) at the initial workshops but these lessons ended up being trialled by another science teacher at the second trial high school. Final data was collated from eight teachers from four primary schools, two teachers from the one high school and one teacher from the youth detention centre.

The collated data is based on three evaluation forms (See Appendix A, B & C), a technical issues journal, class observations, narrative teacher feedback and student work (where applicable).

1.3 Information Sources

It was considered important to select teachers with a strong foundation in good pedagogical practice to trial the learning objects. To this end, four pedagogical models were proposed. Three of these were the Inquiry Based Integrated Curriculum Model, the Information Literacy Process and the Multiliteracies Framework. The other model for trialling was based on a more technological initiative – that is, using the recent innovation of interactive whiteboards as an integrative strategy with the learning objects. The particular board and its enabling software is referred to as a SMARTboard owing to the name of the technology provider. This approach was trialled at one primary school. The Inquiry Based Model was used by two primary schools and centred on learning theories and strategies by Julia Atkin and Kath Murdoch; another primary school used the Information Literacy Process.

Unfortunately, despite an inservice on the Multiliteracies Framework for developing lessons, no trial teachers chose to use this as a pedagogical model for trialling the learning objects. Although they did respond to criteria for different modes of meaning provided by the learning objects, they did not feel sufficiently confident to use the framework developed by Kalantzis & Cope as a model for trialling the learning objects. Thus, trial feedback represented in Appendix C graphs reflects the three pedagogical frameworks outlined above and integration with SMARTboard.

2.0 ISSUES and CONSTRAINTS

2.1 Technical

Each school's trial co-ordinator was asked to complete a technical journal to list the factors that mitigated a clean start to the trial. Despite access to the learning objects via CD ROM, it was clear from the journals and visits to schools that there were significant hardware issues to be resolved to ensure easy and efficient access by all students and teachers to the learning objects.

The key technical issues were as follows:

- Stand alone and networked machines on both Windows and Mac platforms had to have the latest downloaded versions of Macromedia's browser plug-ins – Shockwave and Flash in order for the learning objects to be fully functional.

- Teacher computers in ACT schools are networked on a specific education WAN (EduNet). The security settings on schools' servers have not enabled learning object functionality. This is still to be resolved; thus, teachers who trialled the learning objects from at least two schools were obliged to explore them prior to a lesson on student networked machines.
- There is no standard student operating environment in ACT schools. Student networks vary from Mac OS 9 & 10 to Windows NT, Linux based and Thin Client networks. Each of these presented their own particular technical problems and had to be resolved individually by either school-based technicians (if available) or by outside ICT consultants. One primary trial school ended up trialling the learning objects from just one laptop for a selected group of students to meet the trial's time frame. The youth detention centre also had to trial the learning objects from two laptops as their student stand alone machines did not support the multimedia functionality of the learning objects.

2.2 Data collation

For the purposes of the trial, teachers selected those learning objects most appropriate to their own curriculum and lesson needs.

Data was collected from:

- evaluation forms from two primary schools each of which trialled three science learning objects; the two others trialled one learning object each;
- responses from two different teachers at the one trial high school;
- one teacher's response from the youth detention centre on three different learning objects – science, maths and literacy.

2.3 Time

The time constraints of this trial did not allow teachers to test students' understanding of the content or concepts of the selected trial learning objects prior to and subsequent to the trial of the learning objects. Rather, student appraisal of the learning objects and the activities teachers scaffolded around the learning objects were the principal means of determining their pedagogical effectiveness.

Hence, this report's discussion and analysis centres on student and teacher engagement with the learning objects and possible implications for teacher professional development on integrating the learning objects into classroom practice.

3.0 TRIAL OUTCOMES and DISCUSSION

3.1 Teacher evaluation of learning objects (See Appendix A – Evaluation Form A)

The diversity of the trial schools, their choice of pedagogical models and learning objects and the numbers of students who trialled the learning objects presented some difficulties in collating data into a standardized format that accurately reflects teacher and student responses. However, for the purposes of gaining an overall view of teacher feedback on the learning objects, all twelve teacher responses for different learning objects were graphed together. Teachers from the six trial schools evaluated the following learning objects:

TLF Science Stage 1:

- K-2 Day time Night time; Explore the weather; Looking up; Explore soil; Create a soil environment
- 3-4 Who lives here; Plant Scan
- 5-6 Treasure Puzzle
- 9-10 Where does speeding get you; Give me a brake, Save our spot



TLF Maths Stage 1:

- 3-4 Dynamic fractions; Shape fractions

TLF Literacy Stage 1

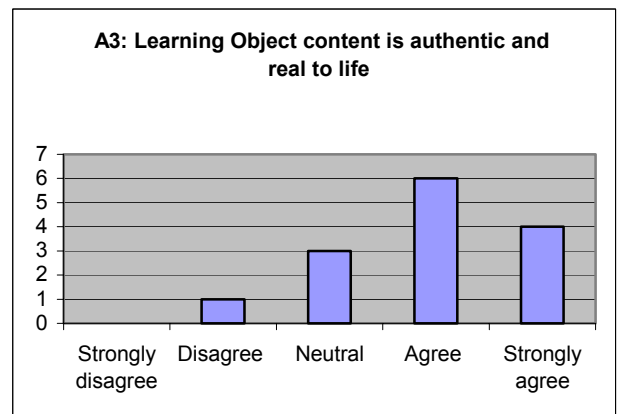
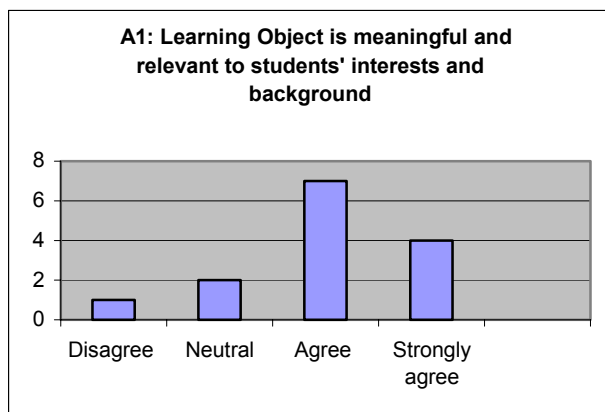
- Finders Keepers A



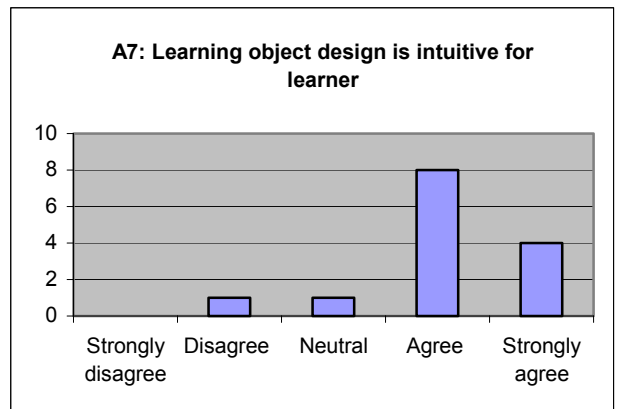
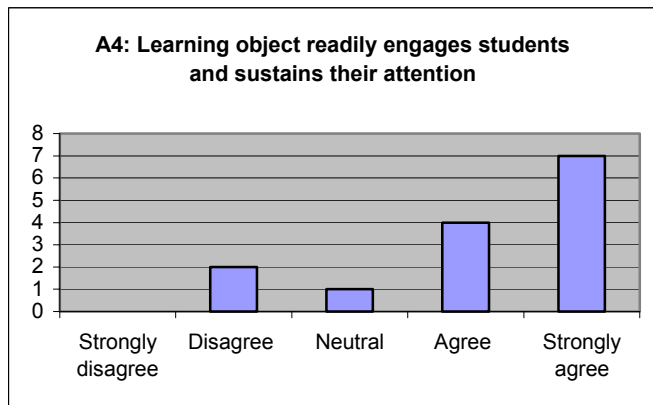
The learning objects were accessed from trial CD ROMs specifically produced without any reference to the age group for which they were originally targeted. Teachers agreed it gave them more flexibility in their choice and adaptation of the learning objects for their particular curriculum and learner needs if the students remained unaware of the original age specifications. This was a particularly useful strategy for the youth detention centre's teacher whose students'

poor literacy and numeracy skills would not have enabled them to use those learning objects developed for their age group.

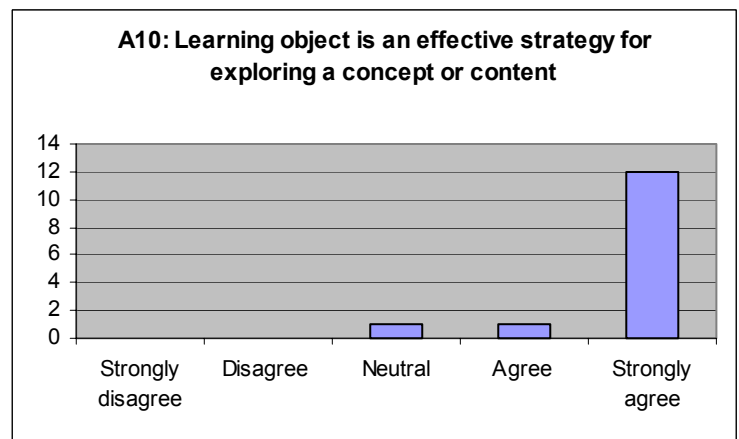
Consequently teacher evaluation (14 responses) of the learning objects (Appendix A Graphs 1-16) reflect their original choice of learning objects for their respective curriculum and student needs and how well they met the criteria established on the evaluation forms. The tables clearly indicate a strong positive response by teachers to the content and quality of the Learning Federation objects. The most encouraging responses were those that indicated the capacity of learning objects to readily engage students and sustain their attention; to enable intuitive navigation by students and above all, to be an effective ICT tool for explaining particular content and concepts. Responses also indicated teachers' convictions that the learning objects' content is authentic, accurate and balanced as well as being able to meet student multiliteracy needs - for providing different modes of meaning.



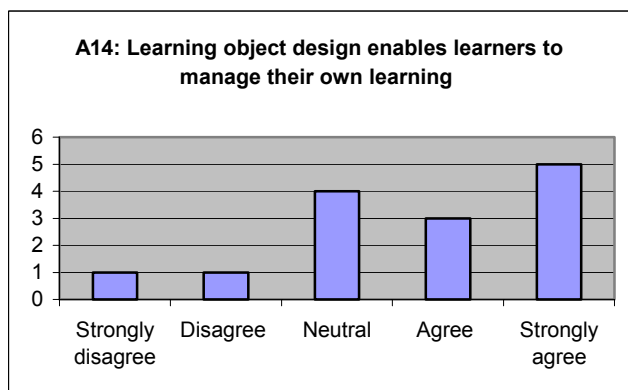
Interestingly, the most enthusiastic responses came from a teacher who trialled the learning objects with a small group of youth detention centre students who are not allowed access to the Internet. Her anecdotal comments clearly indicated how engaged her students were in the learning objects she had selected for them. One particular student who has a reputation for giving up very easily and displaying bursts of irrational behaviour when frustrated, did not bat an eyelid when the Finders Keepers A 'dropped out' half way through and simply said *"It's OK Miss, I'll just start again!"* The student completed the learning object, finding the key and his teacher commented: *"This has been the best day of his education!"*



Similarly, the Treasure Puzzle learning object, whilst castigated to some degree by some teachers (in workshops run at the CTLT) was enthusiastically embraced by this youth detention centre teacher and her students; this is because ‘hands-on’ science experiments are not possible within the detention centre’s educational environment



and so the LO was **“a good way to demonstrate the results of an experiment”**, not otherwise possible in her classroom. She was very encouraged to see her students being re-engaged in their learning.

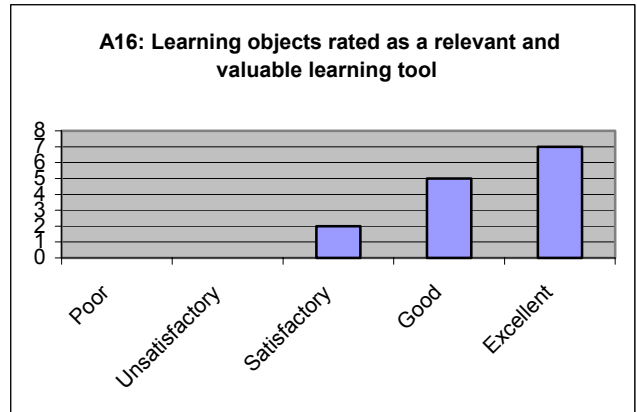
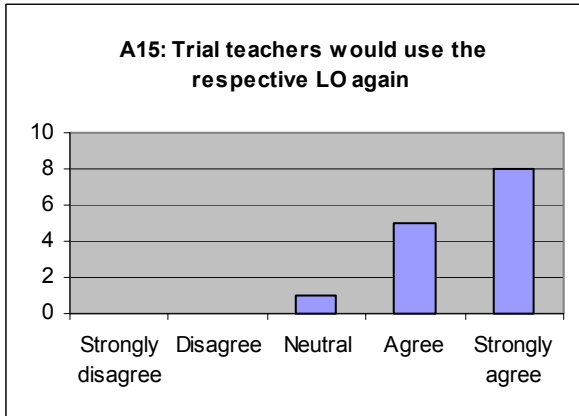


If there was any negativity, it was more a reflection by the teachers on their choice of the learning object for a particular year level and when the trial time dictated. For example, the ‘Day time Night time’ learning object was considered too difficult for kinder students and its criticism was that it didn’t show where

the sun was positioned in relation to the earth turning on its axis. Similarly, one teacher’s initial more negative reaction to the Years 9-10 speed and distance learning objects reflected her realisation that using those particular learning objects required more scaffolding of activities prior to their introduction than she had originally anticipated. Graph A14 results indicate a greater

diversity in opinion by teachers of the capacity of learning objects to enable students to make their own choices and decisions in managing their own learning.

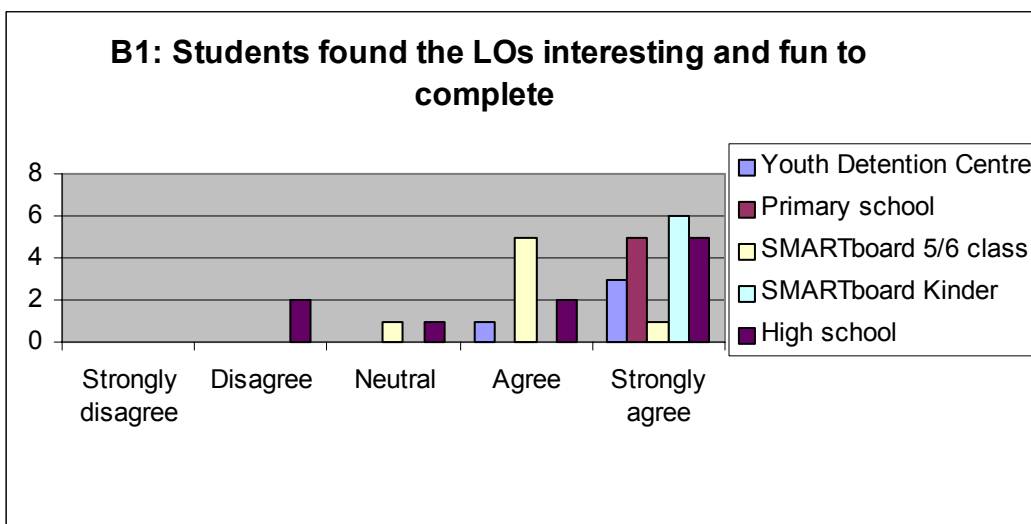
However, when teachers were asked whether they would use the learning objects again to explain content or concepts and what rating they would give them in terms of their value and relevance as a learning tool, the response was overwhelmingly positive.

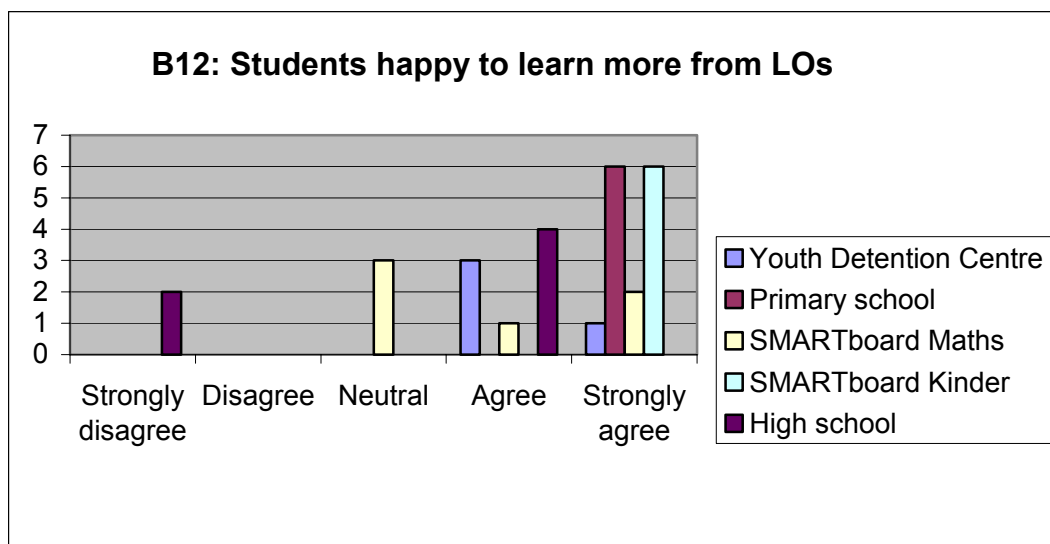


3.2 Student evaluation of learning objects

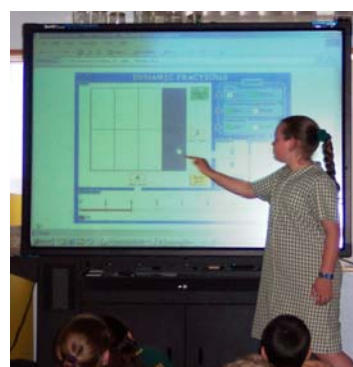
The number of student evaluation forms collected by teachers on the learning objects in their respective trial schools varied in number depending on student ages and class sizes. Consequently, in order to gather a more consistent picture of student opinion, a random sample of 6 students per trial teacher were collected and collated into the Graphs in Appendix B; (the only exception is the youth detention centre which only provided four student responses).

As can be seen from Graphs B1 and B12, the majority of students found the learning objects to be interesting and fun and would be happy to learn new content or concepts from them again.





The survey results indicate some discrepancies between schools in student responses to the learning objects. These occurred at the high school and at the school that uses the interactive whiteboards as a tool for teaching and learning. SMARTboard students in the upper primary years are fully ‘au fait’ with the range of learning possibilities provided by the whiteboard ICT tool, and many of their student surveys indicated that they did not see the learning objects as particularly innovative and different from learning experiences that they normally engage in everyday via the SMARTboards (hence, the dominant neutral response). This is not to say they didn’t find the ‘Dynamic fractions’ maths learning object engaging and useful. It could be more a case that the fractions concept explained by the learning object was already covered to a large degree by the innovative use of the SMARTboard by their teacher (as indicated in the left hand picture below).



Student engaging with ‘Dynamic Fractions’

However, it should be noted that the other trial teacher (kinder) and students who use this technology were very enthusiastic about the possibilities of learning objects with SMARTboards and her students were unanimous in their endorsement of two out of the three learning objects selected to trial (‘Exploring the weather’ and ‘Looking up’).

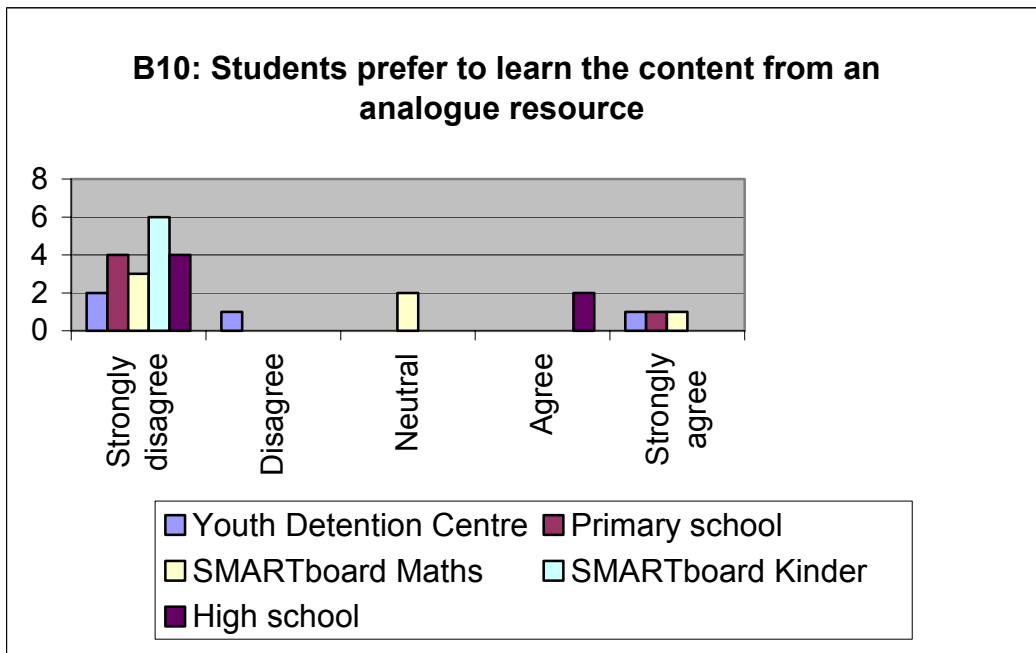


Similarly, a high degree of engagement and enthusiasm for learning with the learning objects was observed during one of the high school trial lessons with year 9 students. These students were tasked with a graphing exercise specifically developed for the ‘Give me a brake ‘ learning object and it was the project officer’s observation that any negativity on the students’ part with learning from an ICT tool was more to do with the time wasted logging on to the student network (10 – 15 mins on this particular trial day) rather than the actual learning object itself. Teachers at this high school have commented on the many frustrating difficulties with their student network and wondering if all machines will work in a particular lab lesson on a particular day. Hence, some negative responses indicated in the student results (Graphs B) could be explained by some of the students’ frustrating experiences with IT at that particular school. On the whole, student attitudes in all the trial schools towards using the learning objects were very positive and the majority clearly have a preference for learning from digital resources rather than analogue resources (Graph B10).

“This is cool Miss!” says it all.

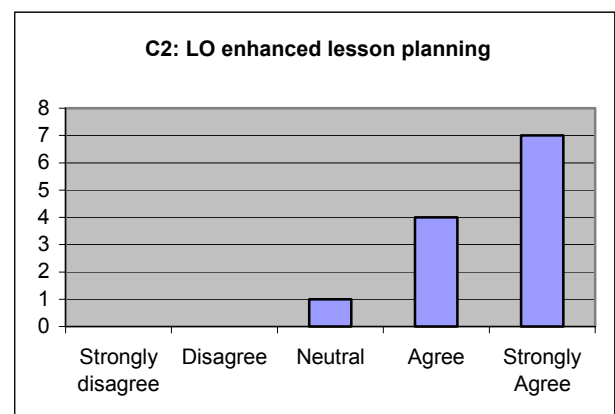
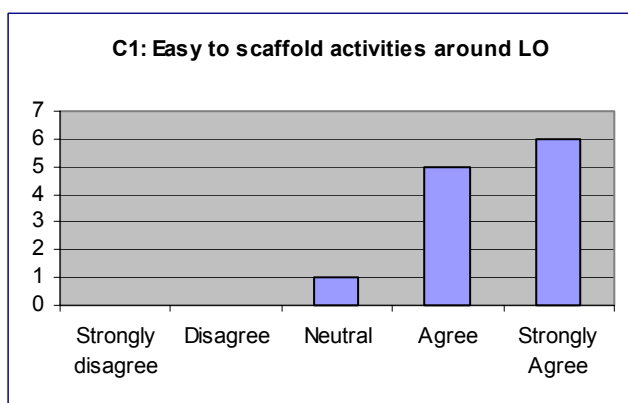


Year 9 high school maths class

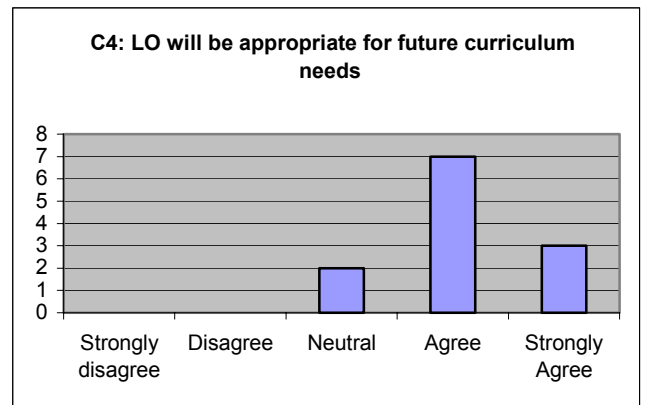
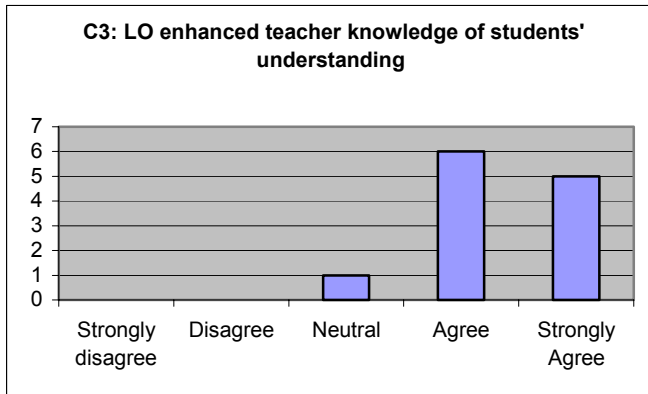


3.3 Teacher evaluation of pedagogical model for learning object deployment

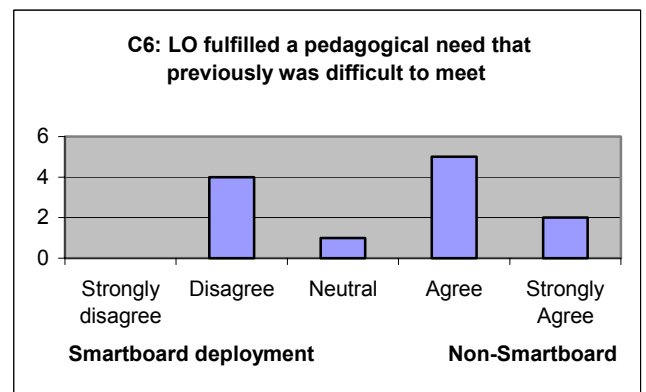
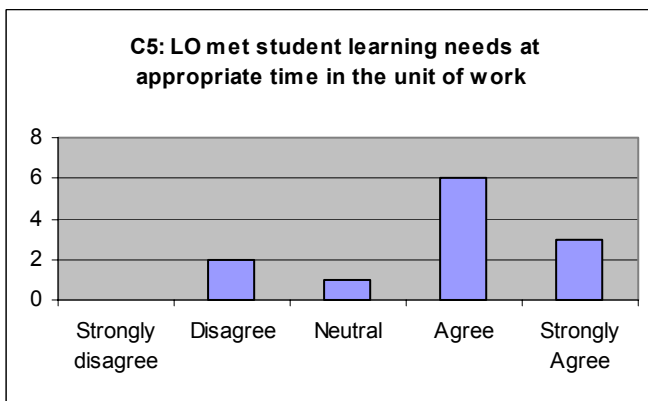
All of the teachers involved in this pedagogical trial have been early adopters of technology in their respective classrooms and consequently were keen to explore other avenues for integrating innovative digital resources like learning objects. Their feedback on their choice of pedagogical model and how seamlessly they could be integrated into their units of work was a valuable insight into the pedagogical possibilities with learning objects. A review of the graphs in Appendix C reveals a very positive response to the pedagogical based questions. Virtually all the teachers either agreed or strongly agreed that it was easy to plan lessons with learning objects and to scaffold activities around them.



Similarly, teachers felt the learning object enhanced their knowledge of how well their students understood a concept or content and that the learning objects could meet a future curriculum need.

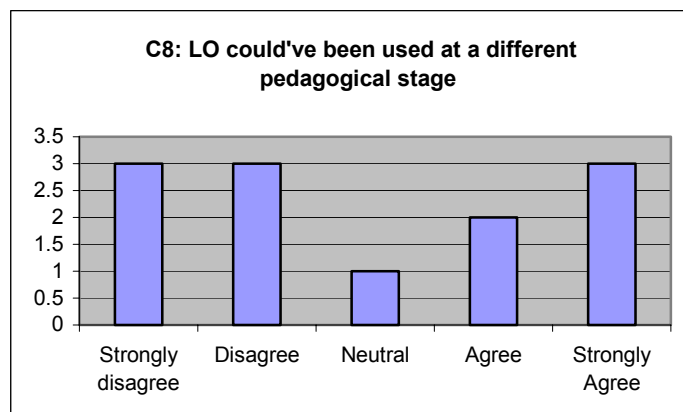
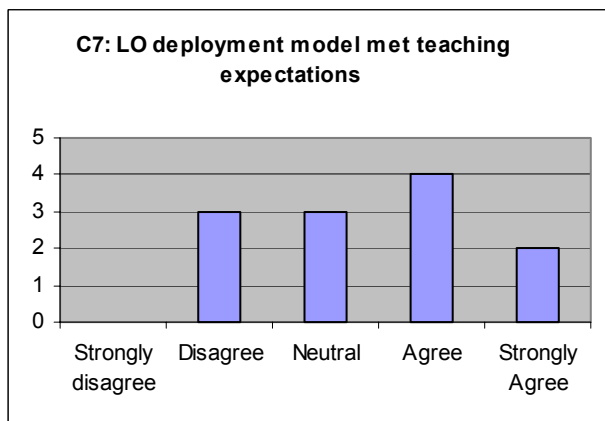


Most teachers also agreed that the learning objects met a student learning need at the most appropriate time in the inquiry or information literacy process and indeed, for at least half the group, the learning object met a pedagogical need that other strategies had not been able to meet. As previously discussed in 3.1, this was particularly the case with the students at the youth detention centre and not so obvious with the students at the primary school whose teachers use the whiteboard technology. Hence the legend on Graph C6 indicates that the neutral and disagree responses came predominantly from the SMARTboard teachers.



The most noticeable differences in teacher responses to pedagogical model questions were in relation to the pedagogical framework or lesson structure they chose for deployment of the learning objects. Graph C7 clearly indicates some teachers' concerns that they had either not planned their lesson with the learning object sufficiently well for students to grasp what was expected of them or they had chosen to use a particular learning object that was not appropriate to their learners' needs. This was also reflected in the corresponding variety of responses to the

question about whether they would have used the learning object at a different stage of the unit of work they had developed.



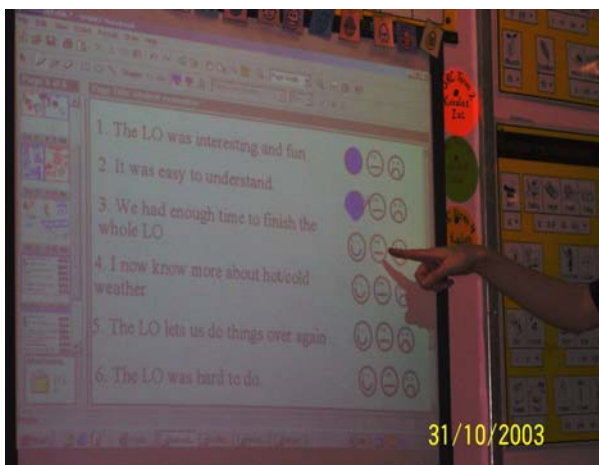
Nevertheless, the majority of teachers would still use the same pedagogical framework for integrating learning objects. Narrative feedback indicated their belief in the learning objects as a powerful motivator and by making it the focus of project based tasks or assignments, it allowed many open ended opportunities for very bright students. However, for students who find certain literacy and numeracy activities very challenging, the following comments from one trial teacher are insightful:

“I re-wrote a graphing assignment (based on ‘Give me a brake’) for Year 9 level 3 students - a group that is not prone to cooperating nor particularly interested in mathematics. The assignment was more specific than the one written for the higher level class but students were still able to choose the variables to investigate. They appreciated the entertainment value of the animation, the practicality of the simulation and the fact that I had made an effort to choose an activity that they would enjoy. Their level of cooperation and the standard of their work improved considerably (this is not to say that I am not always trying to do this!) and their enthusiasm and cooperation extended past into the next unit.”

With the Inquiry Based Integrated curriculum model used by two primary schools, the trial teachers endorsed this model as ideal for scaffolding activities before and after the learning objects. They saw the learning objects as enabling students to either reinforce understandings at the immersion or tuning in stages of an integrated unit or to use as a good springboard for creating contextual learning experiences at the conceptual and analytical level of the knowledge process.



Scaffolding activities around the learning objects was also skilfully done by teachers using the SMARTboard model for integration. The learning objects were introduced seamlessly into a sequence of both teacher and student focused activities so that students were barely aware that they were using a digital resource that was different from anything they'd used before. This is largely in part due to the ICT skills and pedagogical expertise of the trial teachers at structuring interactive, kinaesthetic based activities on the SMARTboard. The sequences also included the whole class assessing the value of the learning object at the end of the lesson, an exercise that once again was done on the interactive whiteboard as indicated below.



Discussing the learning object.



A touch and drag activity before the “Explore the weather” learning object.

4.0 CONCLUSION

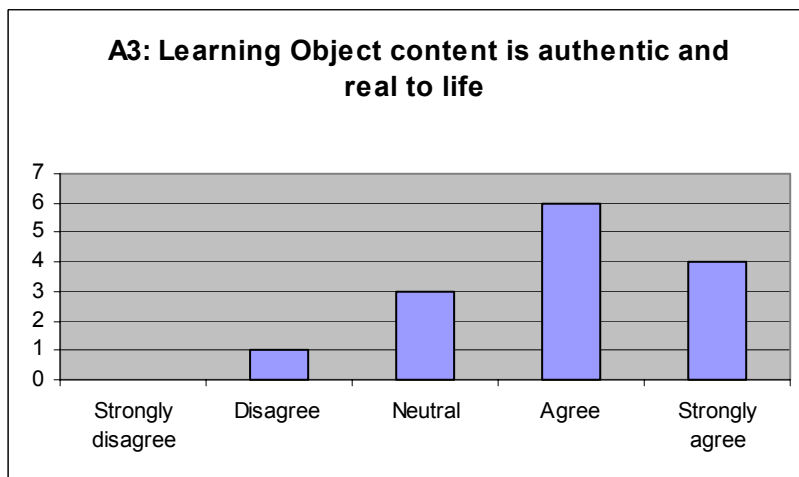
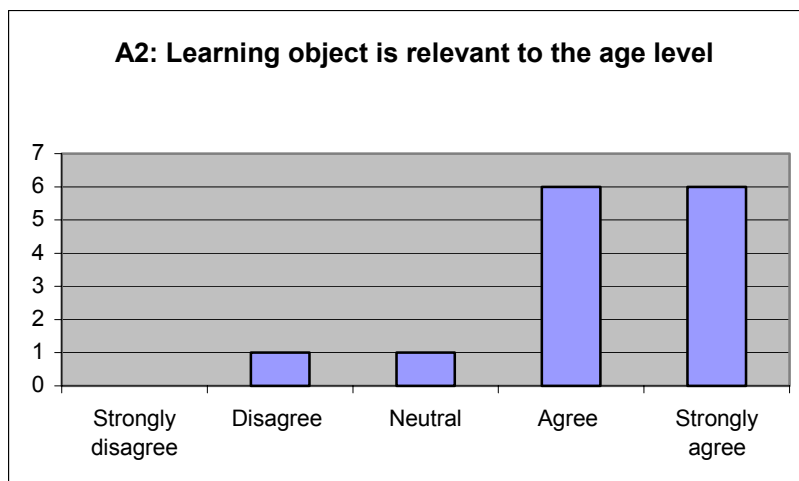
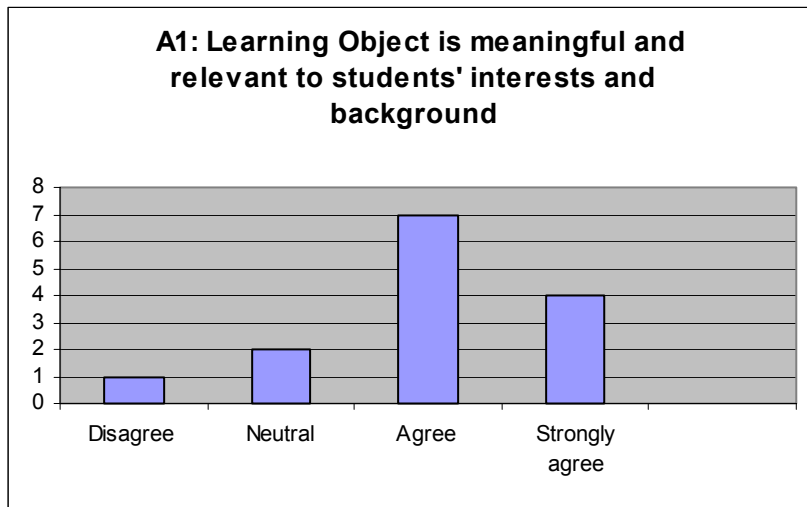
Student and teacher reaction to the learning objects in this trial clearly indicated their enthusiasm and eagerness to integrate learning objects into their classrooms. Learning objects were seen by teachers as a worthwhile ICT tool to add to their pedagogical repertoire. With the different

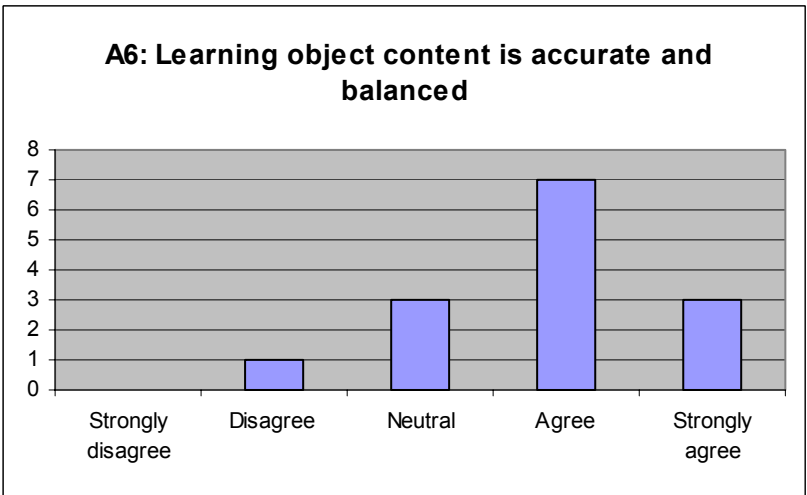
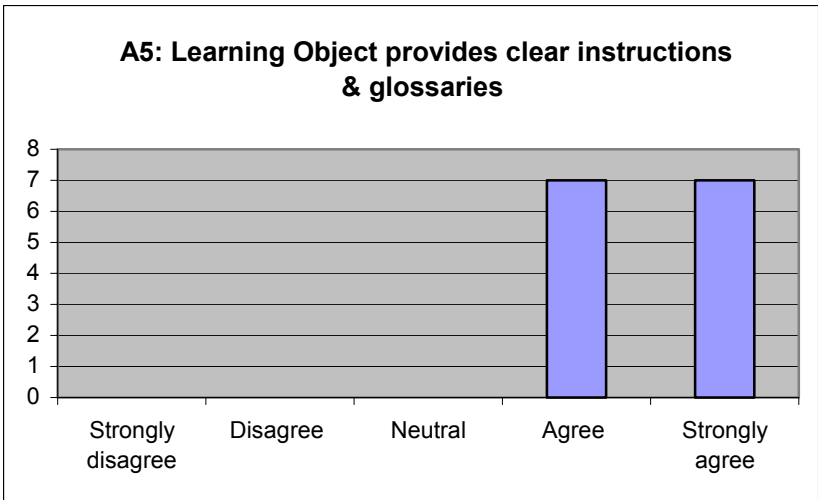
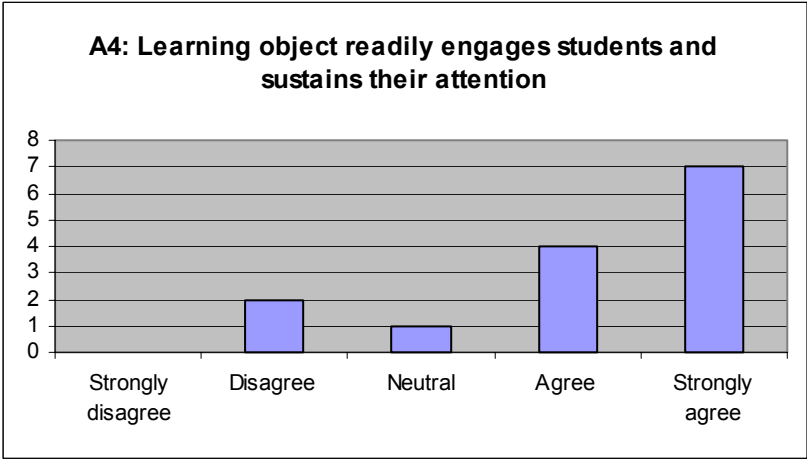
models employed for their integration, it would appear that there is unanimous endorsement of using appropriate learning objects to meet specific curriculum and learning needs of teachers and students. The one premise for their effective use was that there must be technical support for ensuring their full functionality. The following conclusions were drawn from this trial:

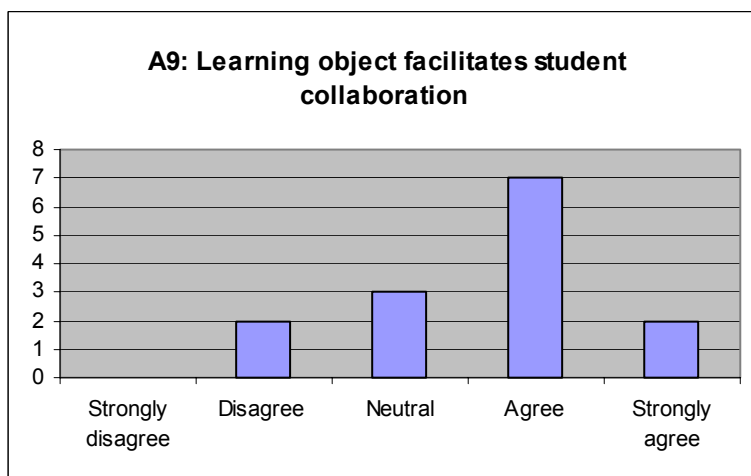
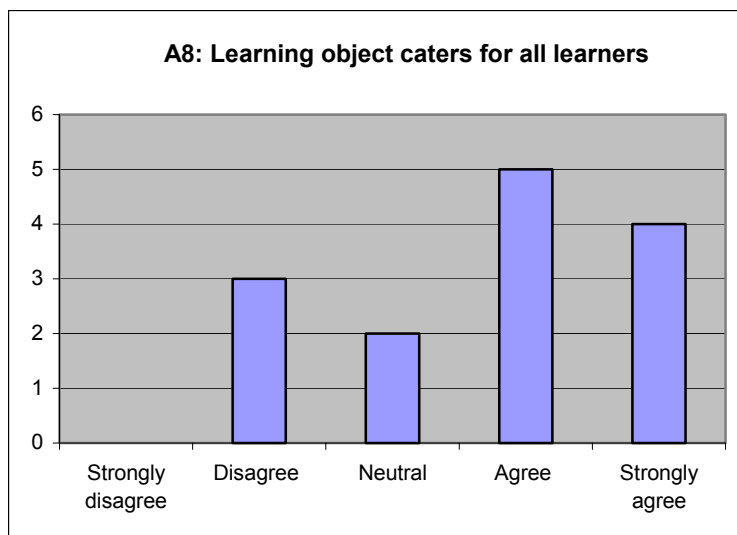
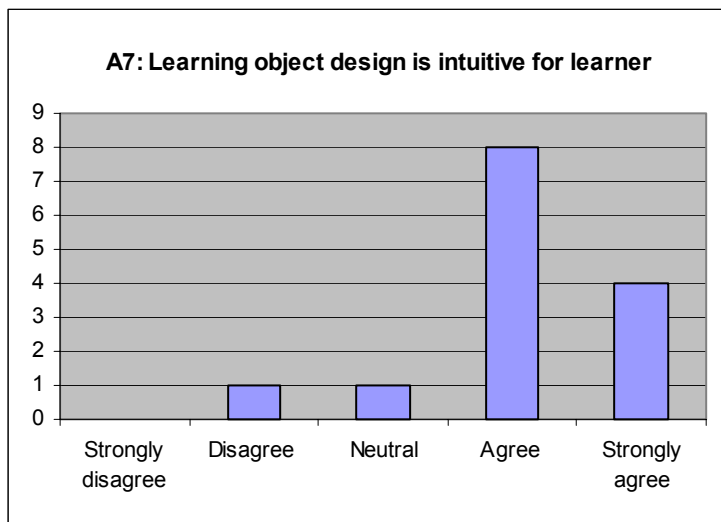
- Teachers were keen to use any learning objects that are relevant to the units of work being taught.
- Learning objects cannot be used in isolation. They must have clearly articulated scaffolded activities constructed prior to and post usage to enhance their full capabilities.
- Teachers will deconstruct and modify their use of learning objects just like any other digital or analogue resource to suit their specific students' and classroom needs.
- Even if some early learning objects are seen by educators as somewhat rudimentary and simplistic in their development of students' knowledge processes, there will still be a particular clientele for those learning objects in specific learning scenarios.
- Learning objects could become a preferred mode of delivery and exploration of content and concepts over textbooks where non-digital resources are not always ideal.
- Learning objects lend themselves ideally to project based tasks in classrooms where computers are randomly placed on desks or in pods rather than in a computer laboratory. They promote collaborative learning and cooperative group tasks.
- The full functionality and capacity of learning objects cannot be achieved without appropriate technical support at all schools for all network operating environments.
- Professional learning opportunities such as hands-on workshops and forums must be provided for teachers to ensure they are able to develop pedagogical strategies to integrate learning objects effectively into their classroom practice and to collaborate and share ideas about their use. This could largely be met through the 'Embedding Learning Technologies' modules on pedagogy and learning objects.

APPENDICES

APPENDIX A: Evaluation Form A - Teacher evaluation of learning objects







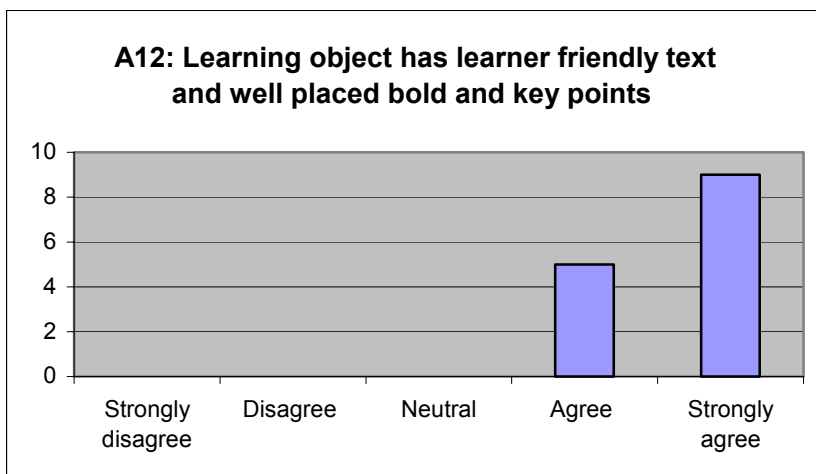
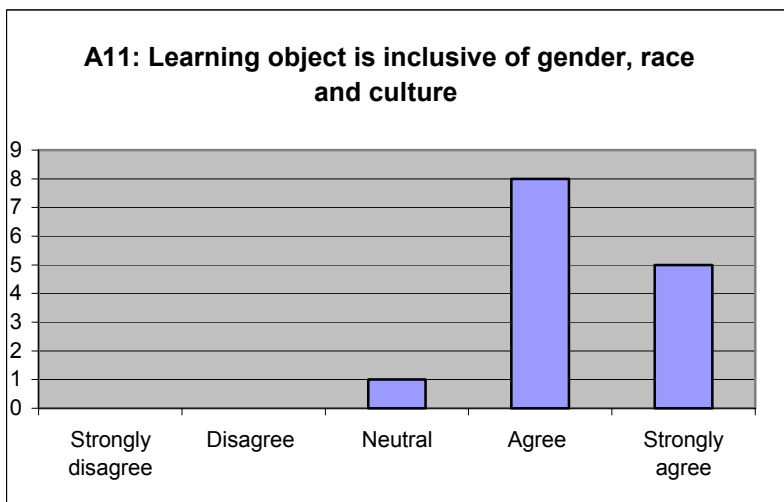
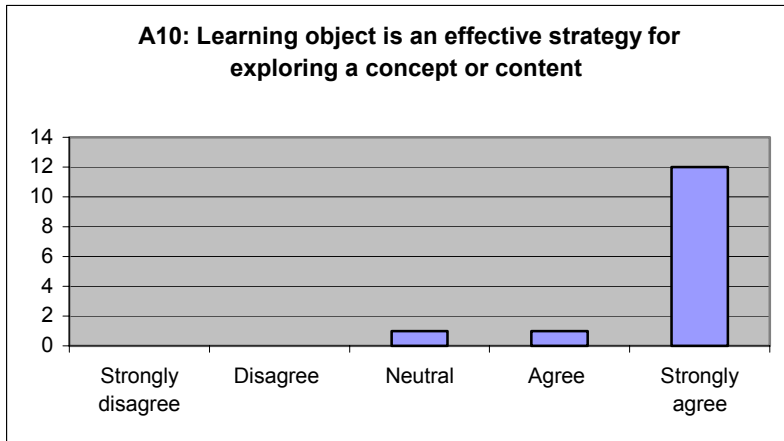
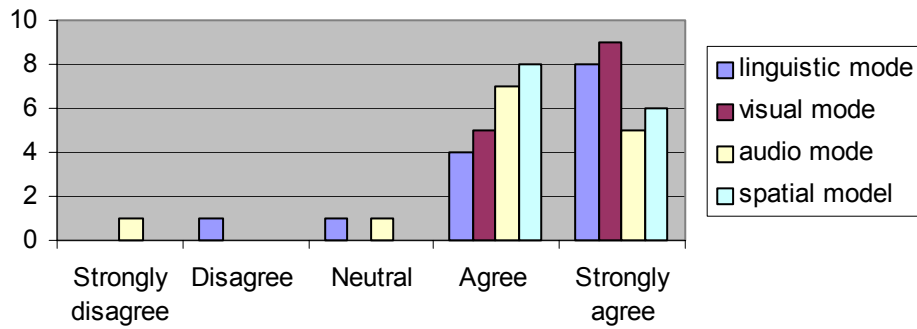
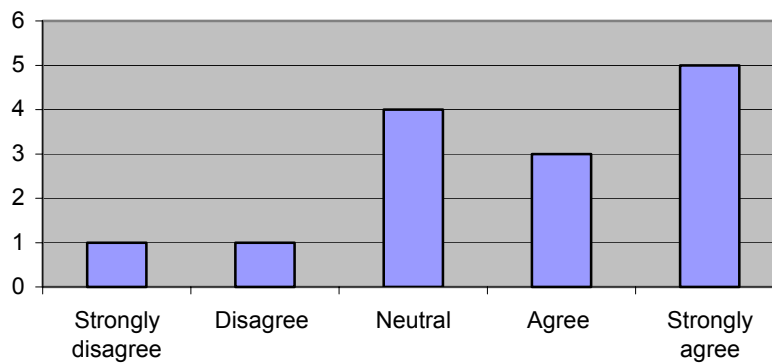


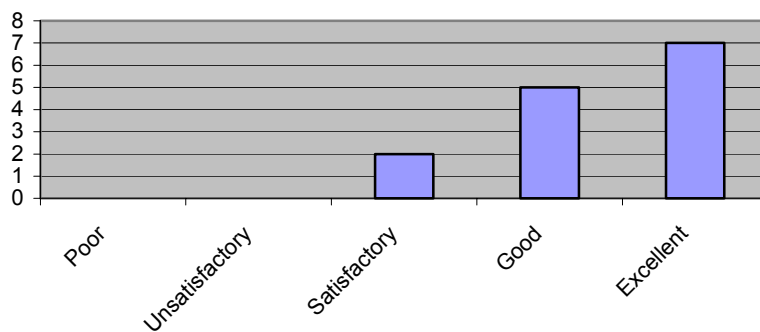
Table A13: Learning object is an effective multiliteracy strategy (providing different modes of meaning) for students



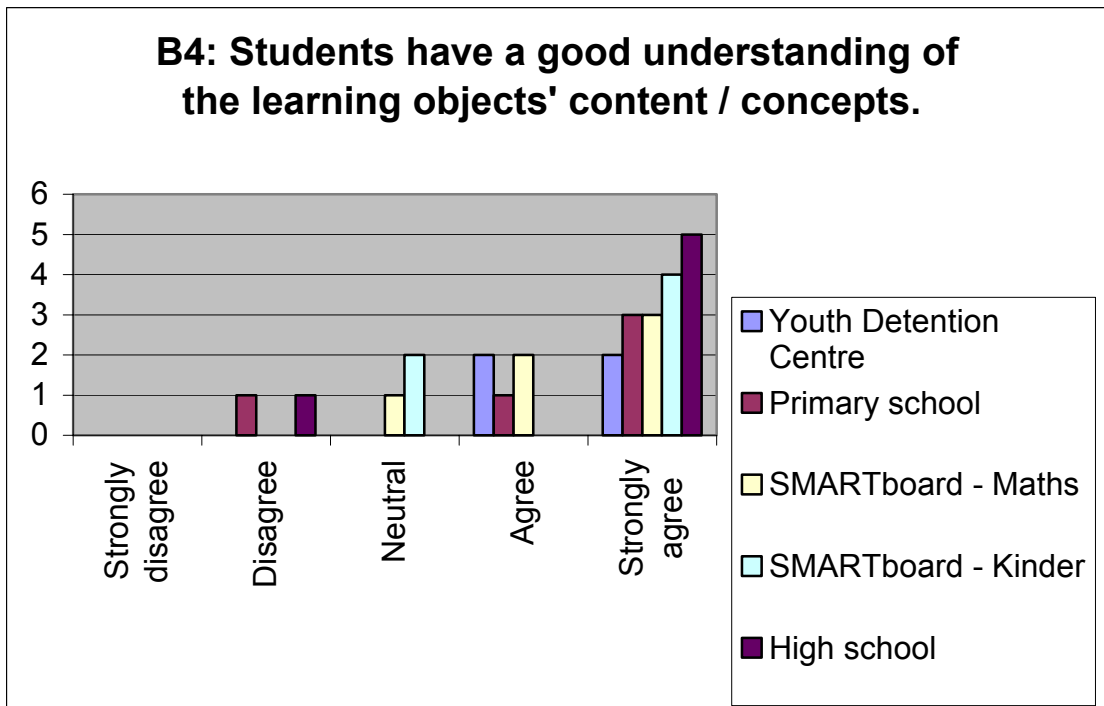
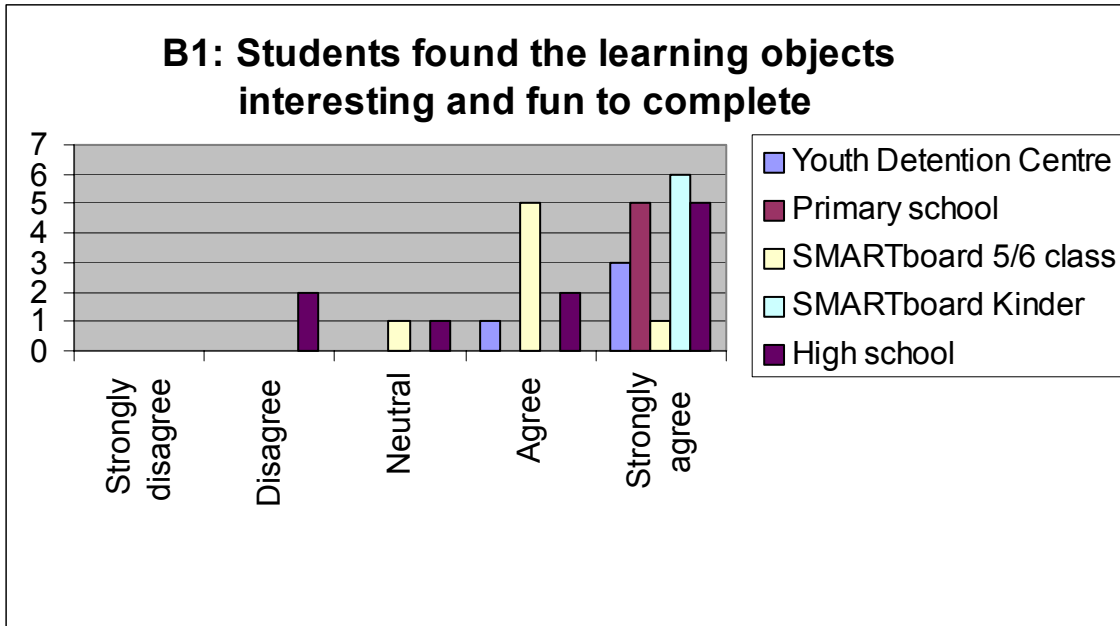
A14: Learning object design enables learners to manage their own learning



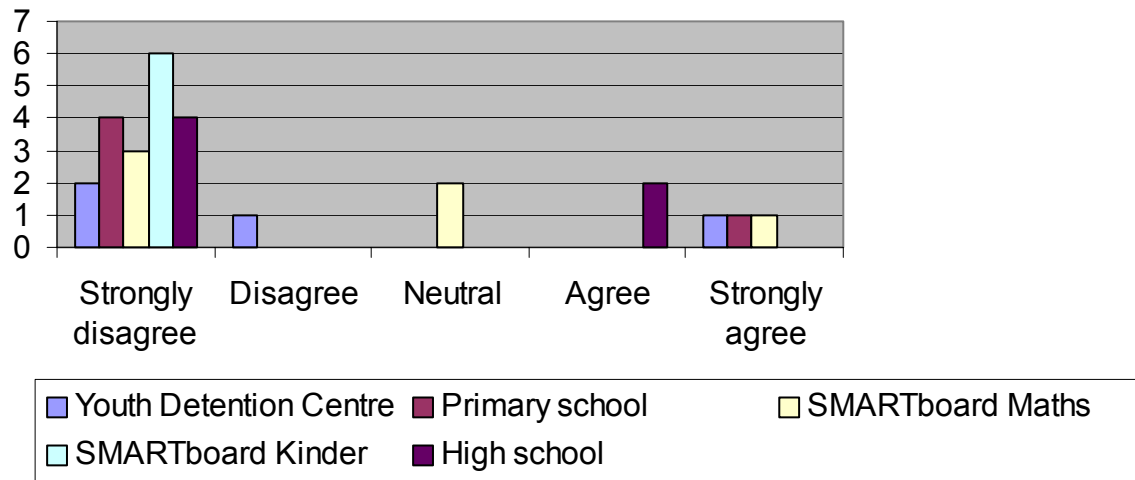
A16: Learning objects rated as a relevant and valuable learning tool



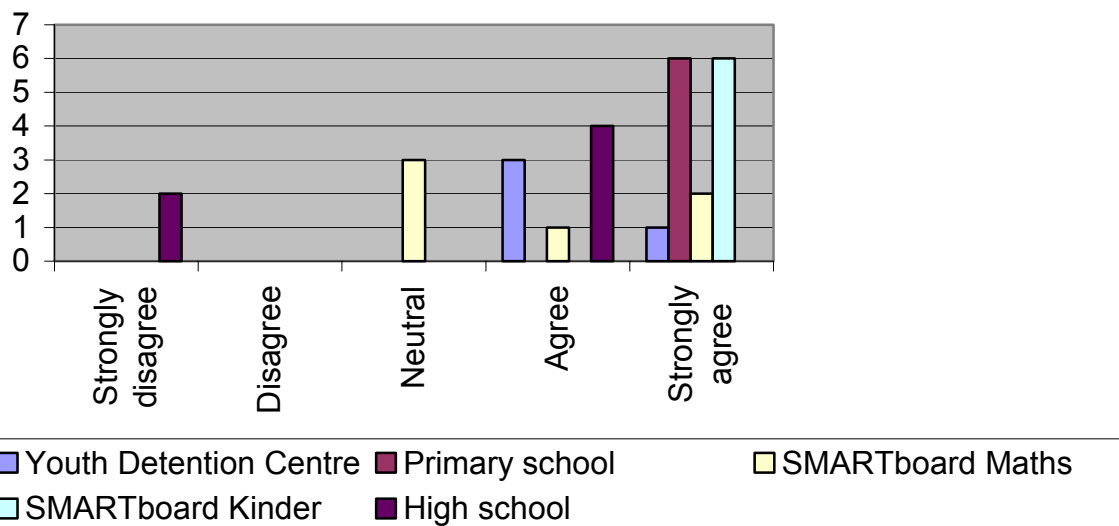
APPENDIX B: Evaluation Form B – Student evaluation of learning objects



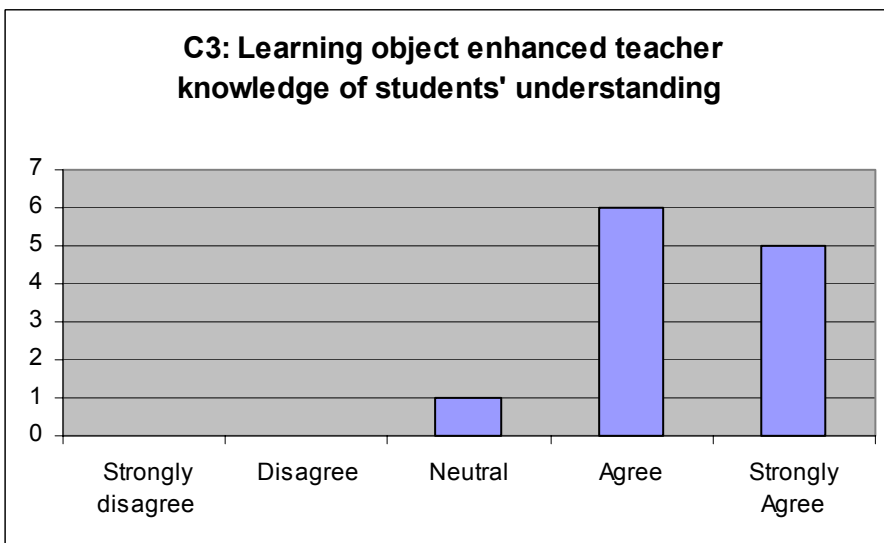
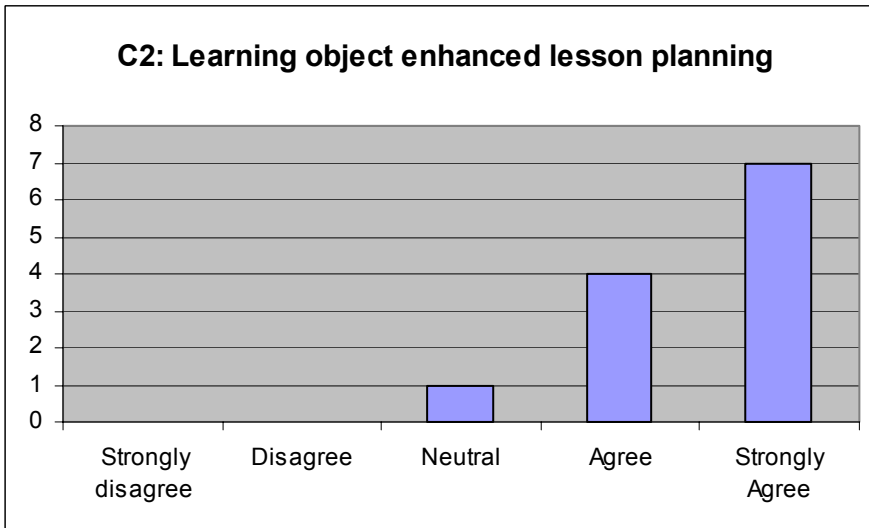
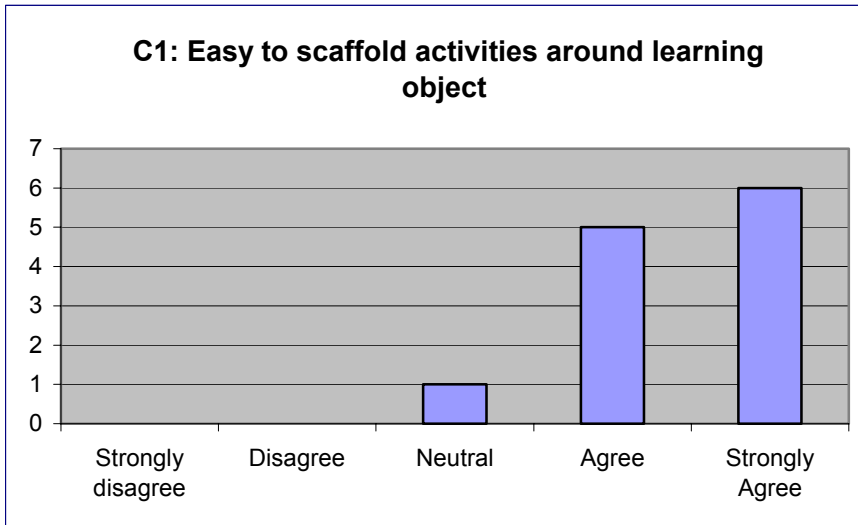
B10: Students prefer to learn the content from an analogue resource

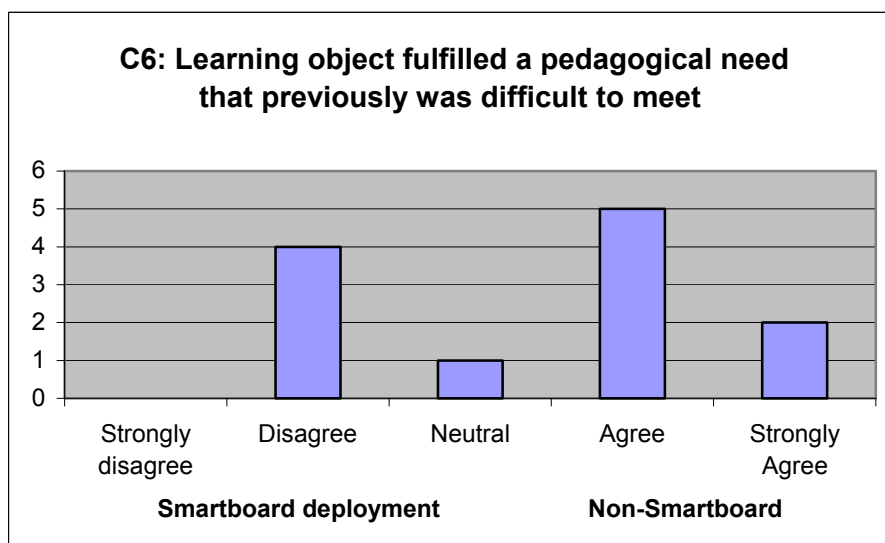
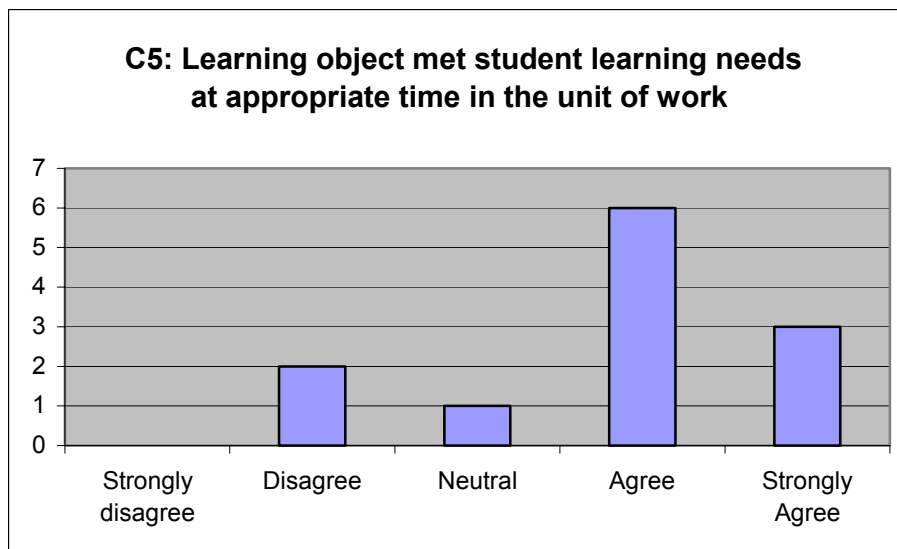
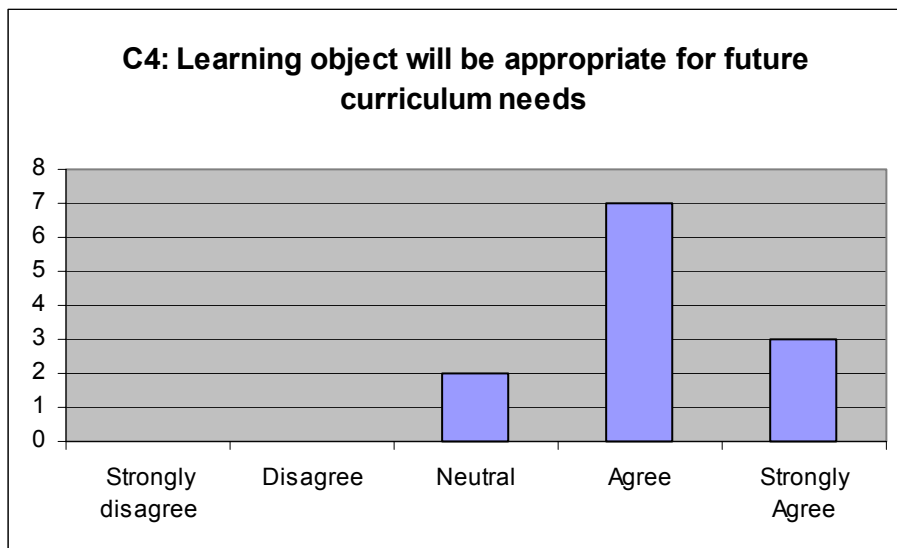


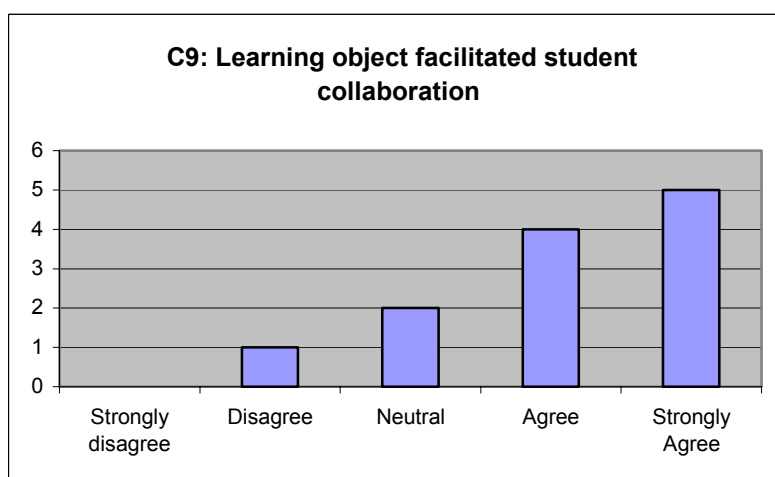
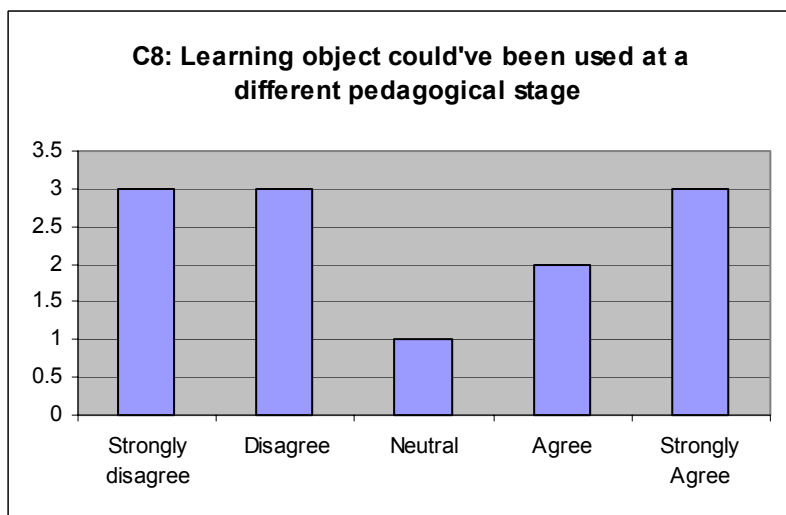
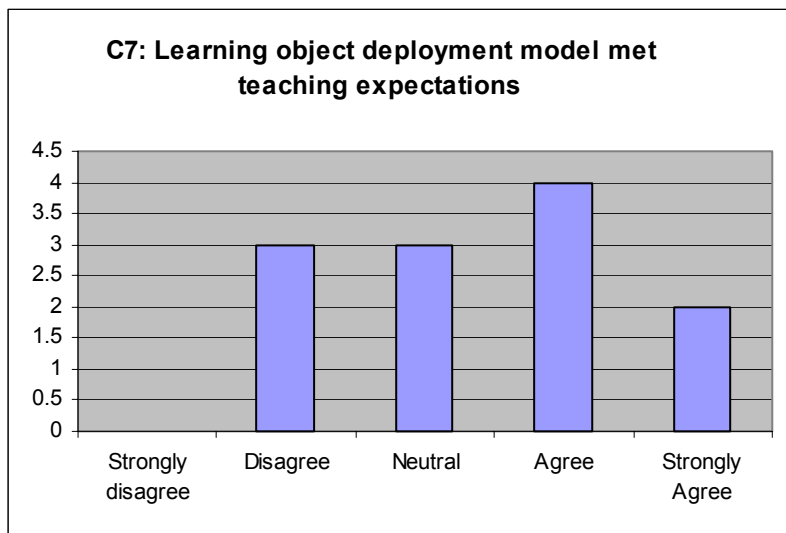
B12: Students happy to learn more from learning objects

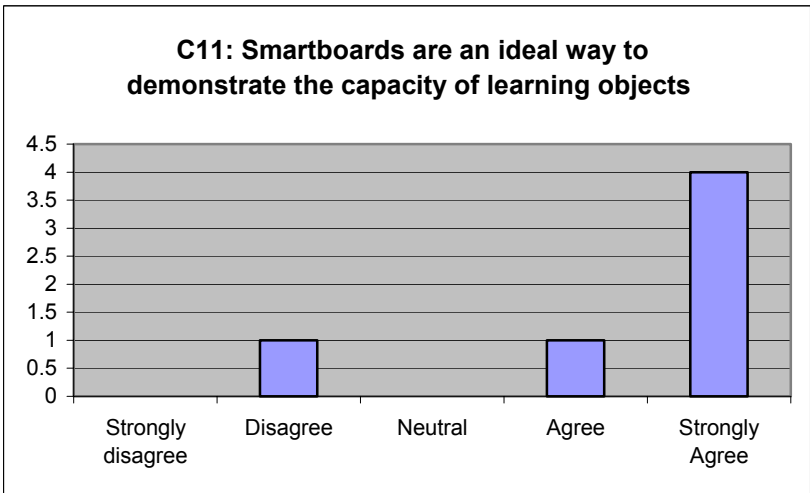
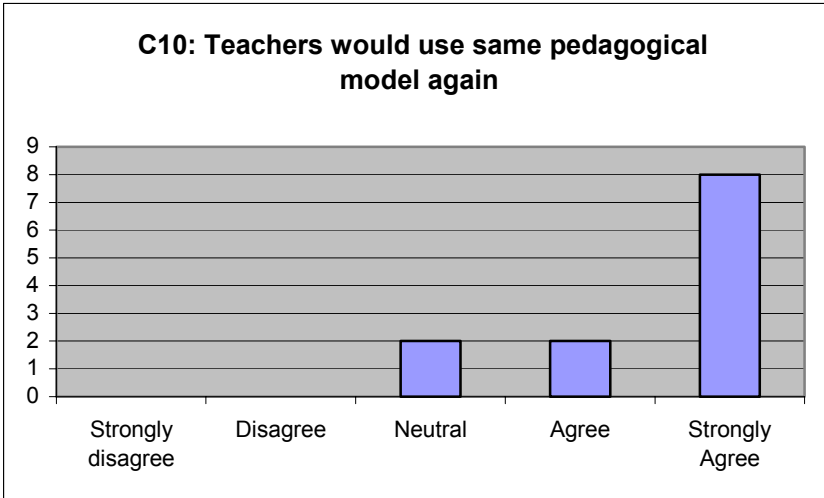


APPENDIX C: Evaluation Form C – Teacher evaluation of pedagogical model









APPENDIX D: Trial documentation distributed to trial teachers
(See attached)

Memorandum of Understanding

Evaluation of the Trial Workshop

Evaluation Form A – Teacher Evaluation of Learning Objects

Evaluation Form B - Student Evaluation of Learning Objects

Evaluation Form C – Teacher Evaluation of pedagogical Model for deployment of Learning Objects

MEMORANDUM OF UNDERSTANDING

Agreement between	The Centre for Teaching and Learning Technologies	and	
Name:	Phillip Arthur) <i>(name of Principal)</i>
Title:	Manager		Principal
Signed			
Date:			

Responsibilities of Parties

Each party accepts responsibility for those issues that are allocated to them as part of this Memorandum of Understanding and will use their best endeavours to meet their obligations to the fullest extent possible.

Scope of Trial

The trial is a small-scale pilot pedagogical trial of units of work integrating digital learning objects via CD ROM. This trial is to evaluate the effectiveness of the respective learning objects used by each school as a means of students achieving learning outcomes more easily and efficiently than other pedagogical strategies.

Centre for Teaching and Learning Technologies

The Centre for Teaching and Learning Technologies agrees to:

- Undertake project coordination
- Provide professional development and support for teachers involved in the trial
- Observe and collate feedback from one or more class

School Responsibilities

The school agrees to:

- Appoint a school coordinator
- Enable the teacher involved to attend meetings as required and negotiated
- Comply with the terms of use of TLF content as outlined in Appendix 1. **In particular schools agree not to make learning objects available on their or any web sites.**

Teacher Responsibilities

Nominated teachers agree to:

- Observe and collate feedback from one class (but preferably across several);

- Complete an online evaluation form (at the initial stages of the trial and conclusion);
- Be available for an interview at the conclusion of the trial
- Attend meetings as required and negotiated;
- Provide written and oral feedback on at least two specific TLF learning objects.

Information Management Responsibilities

Information Management agrees to:

- Provide technical support to enable the objects to operate on the school network
- Support will be provided on a best effort basis, recognising that IMB has limited staff and essential services to be supported.

For more information contact

Lea Chapuis
Learning Objects Project Officer
Centre for Teaching and Learning Technologies
Phone: 02 62058214
Email: lea.chapuis@act.gov.au

If you agree to the terms of this letter, please sign each copy and return to the Project Officer, Lea Chapuis at the CTLT .One copy will be returned to you for your records.

PEDAGOGICAL TRIAL OF **LEARNING OBJECTS**

Evaluation Form A

Teacher evaluation of specific **LEARNING OBJECTS**
to be completed by Friday, 14th November

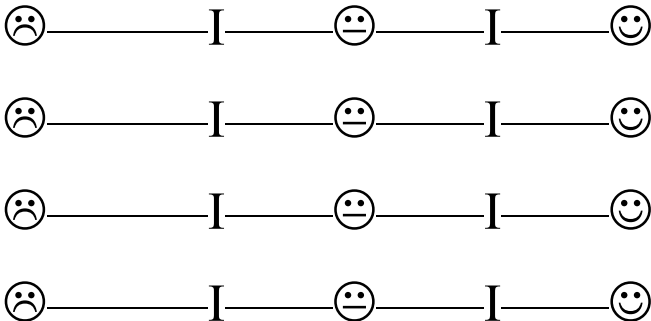
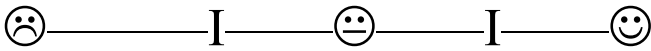
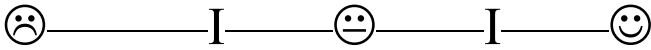
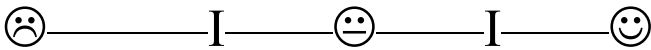
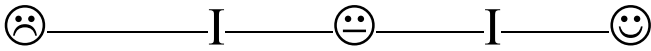
School: _____ Class: _____

Teacher: _____

Learning objects deployed: _____

Pedagogical model: _____

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The learning object is meaningful and relevant to students' interests and background.	☹		☺		☺
2. The learning object is relevant to the age level.	☹		☺		☺
3. The learning object content is authentic (believable) and real to life.	☹		☺		☺
4. The learning object readily engages the students and sustains their attention.	☹		☺		☺
5. The learning object provides clear instructions, glossaries and controls.	☹		☺		☺
6. The learning object content is accurate and balanced (ie. fairly represents controversial issues).	☹		☺		☺
7. The learning object design is intuitive for the learner – ie. easily navigable.	☹		☺		☺
8. The learning object caters for all learners.	☹		☺		☺
9. The learning object facilitates student collaboration.	☹		☺		☺
10. The learning object is an effective way of explaining particular content or concepts.	☹		☺		☺
11. The learning object is inclusive of gender, race and culture.	☹		☺		☺
12. The learning object has learner friendly text with well placed bold and key points.	☹		☺		☺

<p>13. The learning object effectively provides different modes of meaning (multiliteracies) to students.</p> <ul style="list-style-type: none"> • linguistic • visual • audio • spatial 	
<p>14. The learning object design enables learners to manage their own learning and to make choices and decisions.</p>	
<p>15. The learning object design is an effective way of delivering content and concepts.</p>	
<p>16. The learning object encourages students to collaborate and ‘scrum’ around the computer.</p>	
<p>17. I would use this learning object again to explain content and/ or concepts.</p>	
<p>18. Rating: On a scale of 1 to 5, how would you rate this learning object in terms of relevance, useability and value as a learning tool? (5 being the best)</p>	<p>1 — 2 — 3 — 4 — 5</p>
<p>Comments: Please make some general comments about your use of the learning object:- why you chose this particular LO; advantages of using it – what needs did it meet; any difficulties you experienced in using it</p>	

PEDAGOGICAL TRIAL OF **LEARNING OBJECTS**


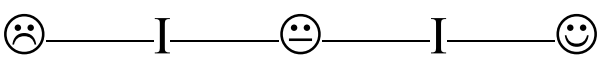
Student Evaluation Form B

Student evaluation of specific learning objects
 To be completed by Friday, 14th November

Specific learning object: _____

School: _____ Class: _____

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The learning object was interesting and fun to complete.	☹️		😊		☺️
2. The learning object was easy to read and understand.	☹️		😊		☺️
3. I had enough time to complete all aspects of the learning object.	☹️		😊		☺️
4. I now feel I have a good understanding of the content and concepts of the learning object.	☹️		😊		☺️
5. The learning object allowed me to repeat steps when I wanted to.	☹️		😊		☺️
6. The learning object was very challenging.	☹️		😊		☺️
7. The learning object was too easy.	☹️		😊		☺️
8. I felt like talking about the learning object and what I was doing with it with my friends.	☹️		😊		☺️
9. I needed a lot of help from my teacher to do the learning object.	☹️		😊		☺️
10. I would have preferred to learn this content from a text book or another way and NOT from a learning object.	☹️		😊		☺️
11. I liked the activities the teacher prepared for us before and after doing the learning object.	☹️		😊		☺️

<p>12. I would be happy to learn more from learning objects.</p>	
<p>13. I'd like to make my own learning object to explain what I've learnt.</p>	
<p>14. Describe the concept or content that you learnt from the learning object ie. what did you learn as a result of using this learning object?</p>	

PEDAGOGICAL TRIAL OF **LEARNING OBJECTS**
Evaluation Form C

Teacher evaluation of **pedagogical model** for
deployment of **LEARNING OBJECTS**
to be completed by Friday, 14th November

School: _____ Class: _____

Teacher: _____

Learning objects deployed: _____

Pedagogical model: _____

1. It was easy to scaffold activities around the learning object before and after using it.	Strongly Disagree Disagree Neutral Agree Strongly Agree ☹ ————— I ————— ☺ ————— I ————— ☺
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2. Using the learning object enhanced lesson planning and creation.	☹ ——— I ——— ☺ ——— I ——— ☺
3. The learning object enabled me to be more certain about my students' comprehension and skill levels.	☹ ——— I ——— ☺ ——— I ——— ☺
4. The learning object/s will be appropriate for future curriculum needs and those of my current school.	☹ ——— I ——— ☺ ——— I ——— ☺
5. The learning object met the learning needs of my students at the appropriate time in the unit of work.	☹ ——— I ——— ☺ ——— I ——— ☺
6. The learning object fulfilled a pedagogical need that previously was difficult to meet.	☹ ——— I ——— ☺ ——— I ——— ☺
7. My selected model for deployment of the learning object met my teaching expectations.	☹ ——— I ——— ☺ ——— I ——— ☺
8. I felt that the learning object should have been used at a different stage of the pedagogical model than the one I originally planned.	☹ ——— I ——— ☺ ——— I ——— ☺
9. The learning object facilitated student collaboration. 10. I would use this model of implementation again.	☹ ——— I ——— ☺ ——— I ——— ☺ ☹ ——— I ——— ☺ ——— I ——— ☺
11. Smartboards are an ideal way to demonstrate the power of learning objects.	☹ ——— I ——— ☺ ——— I ——— ☺

General comments:	
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APPENDIX E: Narrative teacher feedback

“The learning objects we selected were appropriate to the student needs and interest levels. They were good to use after creating our own gardens - provided a focal point for discussions.”
(Year 2 teacher on Soil learning objects)

“Teachers definitely need a lot of lead up to using the learning objects - they definitely can’t be a fill-in lesson.” (High school teacher on the Year 9-10 science learning objects)

“This is not a need that could be met before the introduction of the learning object! The student was completely engaged in the learning object and easily recalled information back when asked questions about the content of the learning object the next day.” (Youth Centre teacher on Treasure Puzzle)

“The children expect a lot from IT based lessons. I felt that the learning object was good but a little **over** complex. I would have liked to have taken individual aspects out of the objects. The students tended to refer to other skills to solve the questions, not the method shown in this model. I would loved to have had it at the beginning of the year!”
(Year 5/6 teacher on fractions learning objects)

“Worksheets developed by the original group of teachers are not entirely applicable. Other teachers couldn’t be sure of what outcomes were intended.”

“Students didn’t like to read the info first on the LO - they wanted to jump in and try the variables straight away and then were asking: “what do we do?”

“A lot of teacher direction is necessary otherwise the LOs just don’t work well! A teacher must have been through the LO themselves, as they are not entirely self-explanatory!” (Science teacher on ‘Give me a brake’)

“It was a great help that the process could be repeated until I was confident that the students’ understanding was complete.”
(Youth Centre teacher on Shape Fractions learning object)

“It was fantastic as part of the students’ language lessons; they were completely engaged in the learning object.” Youth Centre teacher on Finders Keepers A

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