Technology Integration Model

PHASE 1-

Determine the relative advantage.

Understanding the problem-
Our school is concentrating on the teaching of numeracy across all learning areas. To assist in this we have used National Partnerships funding to employ a Head Teacher Numeracy. Her role is to assist all teachers to identify and develop opportunities to teach numeracy skills.

The subject in which she is working with me is Year 7 ICT. While I have taught numeracy skills in a number of applications already, I saw this as an opportunity to develop an innovative way of using applications to address an area of need, that can be modelled in my class before being used to inspire other teachers to be more creative (as most of our staff use computers as word processors only), and use different applications in their teaching practice.

I would also like to assess the impact of this project on students' learning.

The advantages are:

1. Address an identified area of learning need in the Year 7 students,
2. Address an identified school target (improving numeracy skills),
3. Inspire other staff to seek innovative ways to use the available software and
4. Train staff (Head Teacher Numeracy) to use a range of applications.
5. Assess impact of the creative engagement of students in a learning task.

PHASE 2-

Decide on objectives and assessments.

The learning objectives for the students were identified after an interview with the Head Teacher Numeracy, in which she referred to the difficulty students have addressing fractions and skills related to the addition, subtraction and multiplication of fractions in the NALPAN tests.

I decided to pre-test the students to establish those that struggled to identify basic concepts, such as that 2/4 is the same as ½ or those that struggled with addition, subtraction and multiplication of fractions with different denominators. The students would then be grouped, with each group being given a specific thing to learn which reflects their individual learning need.

The task is to be called "PIZZA FUN" and will involve the creation of small animated sequences demonstrating the students identified area of learning need. All students will be given a mathematical concept to animate. They will then design an animation to illustrate this concept. The students will then animate this concept in Adobe Flash Cs4.

The students will again be tested, with the results assessed to see if each student has addressed their identified learning need.

The final products will be gathered into a teaching resource and presented to the maths department as a teaching resource. The results of the process, including student learning, student engagement on the task and the actual products created by the students will then be presented to the whole staff at a staff meeting by the Head teacher Numeracy to promote innovative teaching integrating IT. This will be accompanied by an offer to train staff to use Flash CS4.

PHASE 3-

Design Integration strategies.

Teaching & learning methods
The students will be introduced to the application, Adobe Flash Cs4 before the maths task is given to them.

1. They need to be given simple learning tasks that introduce the concept of animation using time lines, keyframes and tweens. This will be done through giving them a simple task to do that requires the creation of a shape that is moved to another location.

2. They then need to understand layers. This will be achieved through asking them to animate a second shape. I will demonstrate this on a Smartboard, allowing them to see that shapes on one layer can not be moved independently, so we need more layers. They will then experiment with this using text rather than shapes.

Grouping
The tasks given to students will be determined by their pre-test results. They will be allowed the option of working in pairs, as long as they are working with someone who has the same learning need as themselves.

Technology
The technology and application needed is available in only one of our computer rooms. Sufficient computers exist in this room for all students.

PHASE 4-

Prepare the instructional environment

Hardware, software and media
Th access to the hardware and software needed is not an issue. Should there be computers not working I can call on the TSO (Technology Support Officer) for assistance, and send students to the computer block in the library. I also have the option of arranging for the students to borrow spare Lenovo laptops from the TSO, but would rather not do this as they have a very small workspace which makes it difficult to work with Flash.

An additional problem that must be considered is the loss of student data due to computers crashing, Students will be encouraged to develop the good work practise of saving data as they go.

Time must be spent by the teacher using the applications prior to the students beginning the task. This is best done by working through introductory tasks and designing modelled and scaffolded experiences for the students.

I must also allow time to teach the Head Teacher Numeracy how to use the application. this will be done by demonstrating the task, showing the modelled task, and teaching her how to do it.

Special needs of the students must also be considered. The target group contains a diverse range of skills. It is important that structures are in place to provide support for those with poor skills. This will be achieved as the HT will team teach with me.

PHASE 5-

Evaluate and revise integration strategies.

Achievement data
The evaluation of student achievement is to be determined using the comparison of the pre-test data and the test done after the task.

I will also consider the additional aims of the task successful if the maths staff are excited by the process, and if they and other staff members request training to use the application.

Attitude data
This will be assessed through observation of the students' engagement with tasks.