

Learning Activity: *Percentages: skill development and developing understanding of concepts*

Learning Behaviours: *Taking Responsibility for their own learning*

Teacher: SNH **DATE:** /9/05 **Class:** 10 General Maths

Aim:

- To review and develop their knowledge, understanding and skills in percentages
- To encourage students to take more responsibility for their learning
- To encourage students to reflect on this learning behaviour

Discussion Tool: Silent Discussion/class discussion/journal writing

Activity: Pre-test, fixing up misconceptions and choosing the amount of work.

The students were required to review their knowledge on percentages so that they could do work on simple interest etc. They were given a pre-test. I went over their results, fixed up misconceptions and got them to work through questions 1 to 8 from EX 8.3 then I selected some application questions. They were asked to select the type of skills that they had to practice and the amount of work that they did. All students worked very well for the two lessons. They asked good questions when they didn't understand a skill.

They were to take responsibility for how many and what type of questions they were to do for a particular skill.

Silent Discussion

This discussion followed the student activity where they were given a Pre-test on Percentages, fixed up misconceptions and then worked on textbook exercises that they had selected.

I followed up the lesson with the beginnings of a silent discussion where the students were given questions on 'taking responsibility for their own work'. I had six questions typed up and each student in a table group was given a different question to respond to and then they passed this question onto the next person in their group to respond to and so on. Everyone had a chance to respond to each question. I took up the questions and responses and compiled them into one sheet (see responses to the questions below). A couple lessons later I gave each member of the class a copy of this sheet. I asked different students to read out the responses to the questions to the rest of the class. Then I asked the class to respond to these statements. Then I asked the class to respond to the same silent discussion questions in their journal.

The Questions are listed below:

Choosing how many questions and what type of questions to do.

1. Did you use the pre-test to select what type of skill to practice?
2. How did you decide how much work to do on a particular skill?
3. How can you tell you have done enough practice on a particular skill?
4. Did you take responsibility for your own learning? How?
5. How does taking responsibility for your own learning make you feel?
6. How do you know that you know it? How can you show that you know it?

The responses to these questions:

1. Did you use the pre-test to select what type of skill to practice?

Yes (12 responses)
No (4 responses)
I did for some of it.

2. How did you decide how much work to do on a particular skill?

I worked until I got bored or distracted.
By how much I knew.
I did more questions on the work I was not sure of.
I worked until I didn't understand.
I worked on a particular skill until I knew how to do it.
Teacher.
Don't know.
Whether I found it hard or not.
With great difficulty.
If it was too hard.

3. How can you tell you have done enough practice on a particular skill?

When you get bored that is enough.
Teacher.
When you understand.
Just be comfortable.
When you are good at it.
I can't.
Make sure you can do all types of a particular skill.

4. Did you take responsibility for your own learning? How?

Yes because I finished my work and checked the answers.
No because _____ annoyed/distracted me.
Sort of did./Maybe
Yes I believed I did/ concentrated when I wanted to.
Yes because I get my mum to help me,
Yeh I learnt what I wanted.

5. How does taking responsibility for your own learning make you feel?

Kool, Good. Fine. Great. Confident. Perfect. Pretty good.
Okay, well
Strange.
Good I don't have to do more work on skills I know how to do.

6. How do you know that you know it? How can you show that you know it?

When I get the answer right.
If ya understanding ya know it and if ya write it ya can show it.
When I can show someone else how to do the questions.
Show work.

Journals and Class Discussion

After giving out the sheet and "discussing" the student responses I asked the students to respond to the same questions in their journals.

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Their journals indicated a range of responses to "taking responsibility". Most students enjoyed taking responsibility as it gave them control and made them feel better about themselves. A couple mentioned that getting their friends and family to test them on the work would be a way to show that they know it. A few thought that showing that they could do it would show that they knew it. A couple of students didn't use the pre test to select questions. And one girl had no thought to which skill or how many questions to do.

Student Comments

These in general were more considered and there were a range of responses to “taking responsibility” for your own learning.

It was interesting to note that students that took responsibility for their own learning felt more positive about the work.

The following shows the range of responses.

Rhiannon wrote:

No, I didn't use the pre test at all

Didn't I only did as much as the teacher told me to.

I don't know I just do

Mary wrote:

1. Yes I use the pre-test to select what type of skill to practice?
2. I worked until I understand how to do the questions for myself without any help.
3. When you know how to do them.
4. Yes I took responsibility for my own learning?
5. Very confident
6. When I understand and I know it. And when I can show it to others.

Only a few students didn't take responsibility for there own learning. Most did.

Teacher Journal

What is my intention? What do I want to achieve?

I wanted students to take more of the responsibility for their own learning. I wanted them to realise which skill that they needed to work on and for them to find out how much practice that they needed to do. I also wanted them to reflect on this learning behaviour too.

What happened?

In the main students did take on the responsibility and they made good choices to the amount and type of exercises that they needed to do. There was a range of responses in their journal entries and these indicated different abilities for students to reflect on their own learning. It was noticeable that in general it tended to be girls who reflected more deeply. Student journals indicated that students were more positive towards their learning. There was more engagement in student learning during the two lessons but in subsequent lessons this fell away.

What was my role?

I set the Pre-test. Went over there papers, providing feedback. Set the Exercises and instructed them to choose how much practise they needed of each skill. With the “Silent Discussion” I wrote up the questions and facilitated the discussion and provided the opportunity for students to discuss further and reflect in their journals.

What feelings and senses surround the event?

Some students felt more positive towards their work when they were given the responsibility to choose the amount of practice they needed. The pre-test indicated to the students what they needed to practice.

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What was I thinking? What was I feeling?

I was delighted with how the silent discussion went. I felt that everyone got the chance to think about the questions and contribute to the discussion. Also being from a non-English teaching background I found it an easier way of holding a discussion. I of course realise that it is in every teacher's interest to become proficient at running class discussions; not just about their subject area but also about student learning.

What might I change next time around?

Post-test sooner! Pre-testing and then skill work needs to be followed up with post-testing, and this needed to be done just after they had done their skills practice so that the connection between the amount work done and skill improvement can be easily seen. The students needed immediate feedback about their skill improvement so that they could assess whether they had done enough work. Although I tested the students at the end of the unit the opportunity for students to make connection between the amount of work they had done in these lessons and their skill level was lost.

I do think that I should have left the application questions to after the skills and understanding was firmly imbedded. To apply the mathematics to real situations requires a deeper level of thinking based on a sound understanding and application of skills.