

# Metacognition and Assessment for Learning

## Strategies Used:

1. Pair Problem Solving
2. Show me Boards
3. Extra Time to Answer Questions
4. Activating Prior Knowledge

## 1. PAIR PROBLEM SOLVING

Combined strategies from Assessment for Learning and Metacognition

### Situation:

- When: 09/02/10
- Who : First Year Learning Support Maths Group
- No. of students : 4

### Learning Intentions

- To understand factorising
- To be able to factorise the four types of expressions

### Success Criteria

- Work to be legible
- Each step of the problem shown
- Explain the problem clearly step by step to another student
- From the previous class the difficulty seemed to be recognising which type of factorising was needed when presented with *an* expression to factorise.
- I went over the four types of factorising
  - Highest Common Factor
  - Factors by grouping
  - Quadratic Trinomials
  - Difference of two squares

An example of each was worked through.

### Method

- Each pair of students was given a sheet with a problem *on each side*.
- With their partner they had to decide which type of factorising was *needed*.
- *Then* one student had to explain in detail to their partner how they were factorising the problem.
- The sheet was then turned over and the second expression was discussed, type of factorisation needed and then the second student had to explain to the first the method being used.

### Outcome

Only three students were present so I acted as *one* student. Strategies worked well. The students particularly liked the discussion between pairs to decide which type of expression they were dealing with. This collaborative approach worked well as students felt less pressure as they didn't have to come up with the solution on their own. It also helps to encourage a cooperative learning environment. All three students seemed to have a better understanding of the topic at the end of the session.

### **Other Use**

This strategy works well when working in small groups, whether student/student or student/teacher. Understanding how another student approaches a problem can be very helpful.

## **2. USE OF SHOW ME BOARDS**

Use of Assessment for Learning strategies.

### **Situation**

- When: 23/02/10
- Who : First Year Learning Support Maths Group
- No. of students: 4

### **Learning Intentions**

- To be able to solve simultaneous equations.

### **Success Criteria**

- Work to be legible
- Each step of the problem shown

### **Method**

Worked *an* example of each type of simultaneous equation solving they *are* likely to encounter on the board. After each example worked through the students had to solve a problem on their Show me Boards.

### **Outcome and feedback**

This worked very well and the students really enjoyed using the boards. All four students were confidently solving simultaneous equations by the end of the class.

I was able to see very easily if the students were able to complete the problem or to identify easily where they were making errors. Mistakes were quickly picked up and rectified.

### **Other use**

I have also been using the show me boards for one to one teaching situations and have found that students find them useful when repeating a number of similar problems.

## **3. EXTRA TIME TO ANSWER QUESTIONS**

### **Where and When**

All *classes*

Teaching students with SLD such as dyslexia, I would already be aware of giving more time to a student after posing a question in order that he or she has time to process the question. However, I would still sometimes possibly jump in too soon to avoid putting a student '*on the spot*', so I have been leaving longer after asking a question than previously.

I think that students have benefited from this strategy particularly those with dyslexia and also a student with a hearing impairment. If a student cannot *answer* a question they will tell you and do not feel under pressure. I think this probably applies well to mathematics as deciding what method needs to be done may sometimes require quite a lot of thinking.

## **4. ACTIVATING PRIOR KNOWLEDGE**

When starting a new topic in maths, student & teacher reflect on what methods already encountered or skills already learned *are* similar or may be of use in the new topic. This *can help* to make the links between different areas and to make a topic seem less daunting.