

Cooperative Learning in the Maths Classroom



Mark O'Brien

My background

- Maths teacher for over 20 years
- Author/Developer of Living Maths Series and Integrated Maths Modules
- Up to 2003 teaching at Eastern Hills SHS in Maths and Middle School
- Currently doing PD in schools, Relief Teaching and writing new Post Compulsory course
- Interested in 'the transformation of education'

Why use cooperative learning?



Curriculum Framework: Learning & Teaching Principles

1. Opportunity to learn - Learning experiences should enable students to observe and practise the actual processes, products, skills and values which are expected of them.
2. Connection and challenge - Learning experiences should connect with students' existing knowledge, skills and values while extending and challenging their current ways of thinking and acting.
3. Action and Reflection - Learning experiences should be meaningful and encourage both action and reflection on the part of the learner.



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4.	<u>Motivation and purpose</u> - Learning experiences should be motivating and their purpose clear to the student.
5.	<u>Inclusivity and difference</u> - Learning experiences should respect and accommodate differences between learners.
6.	<u>Independence and collaboration</u> - Learning experiences should encourage students to learn both independently and from and with others.
7.	<u>Supportive environment</u> - The school and classroom setting should be safe and conducive to learning.

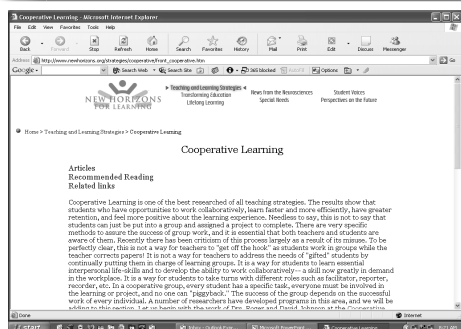


National Statement

- *"Mathematics learning is likely to be enhanced by using and developing appropriate language"*
- *"Students should develop their capacity to use mathematics in solving problems individually and collaboratively"*

■ Quotes taken from "A National Statement on Mathematics for Australian Schools - AEC, Curriculum Corp. - Dec 1990."

Research



New Horizons for Learning

- Cooperative Learning is one of the best researched of all teaching strategies. The results show that students who have opportunities to work collaboratively, learn faster and more efficiently, have greater retention, and feel more positive about the learning experience. Needless to say, this is not to say that students can just be put into a group and assigned a project to complete. There are very specific methods to assure the success of group work, and it is essential that both teachers and students are aware of them.

What is cooperative learning?



Alice F Artzt Claire M. Newman

- *"Cooperative learning involves small groups of learners who work together as a team to solve a problem, complete a task, or accomplish a common goal"*

Learn more

- [Good Reading](#)
- [Websites](#)

How to make cooperative learning work in the classroom



5 Basic Elements

- Positive interdependence
- Individual accountability
- Face to face interaction
- Social skills
- Processing

From "Where Heart Meets Mind", based on work originally from Johnson & Johnson

What do these mean?

- Activity A:
 - 1. Read the page on the 5 elements
 - 2. Complete the activity

My experiences 1

- Group Social Skills



Group Social Skills

- Activity B:
 - Look at the group social skills sheet and select three you think would be important for your maths classroom
 - Each member contribute one to a group listing of important skills

My experiences 2

- Forming Groups
 - Groups of 3 or 4
 - Changed every 5 weeks
 - Teacher chosen ► Activity C

My experiences 3

- Conducive learning environment
 - Suitability to students
 - What it looks like
 - Space in the room

Conclusion

- Comments
- Questions
- Discussion

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You can find out more about this topic and the resources written to support this style of teaching at www.otrnet.com.au.

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