
Practitioner Inquiry

ASMS style!



BACKGROUND

The ASMS is a public senior secondary school with a special focus on science and mathematics education. The school exists in partnership with Flinders University to engage in development and research to transform science and mathematics education in South Australia, nationally and internationally.

Team teaching provided an opportunity to explore adaptive pedagogies within a stage 2 Mathematics context, placing student engagement and achievement as the motivating factor to drive changes in teaching and assessment.

This study examined the effects of adapting and implementing a team teaching approach in Stage 2 Mathematical Studies with two classes taught as a single cohort by two teachers.

THE 10 COMMANDMENTS OF TEAM TEACHING

1. Thou shalt plan everything together.
2. Thou shalt model discourse with thy partner.
3. Thou shalt encourage student voice and collaboration.
4. Thou shalt model open, inquiry based questions.
5. Thou shalt model engagement and questioning in thy partner's session.
6. Thou shalt respect each other's ideas.
7. Thou shalt moderate each other's standards.
8. Thou shalt always attend each session.
9. Thou shalt attend all thy team meetings.
10. Thou shalt expect the unexpected

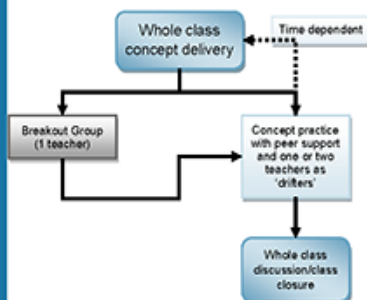
Adapted from Team Teaching: Benefits and Challenges, Stanford University.

RESEARCH QUESTIONS

How can we use team teaching to enhance learning outcomes for all students?

- ⇒ What team teaching strategies are effective?
- ⇒ How can we use team teaching to support student learning?
- ⇒ What extra opportunities does team teaching provide?
- ⇒ What will we learn as teachers from the team teaching experience?
- ⇒ What do dynamic and effective models of team teaching look like?
- ⇒ What tools can we use to support team teaching effectively?

Musketier Model



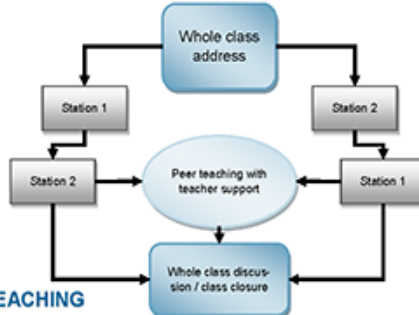
APPROACHES TO TEAM TEACHING

The ten commandments provided a clear set of 'rules' to follow in the development and implementation of team teaching pedagogies. General models of team teaching such as lead & support and parallel teaching³ were analysed and incorporated into domain specific models to suit the facilities used and the conceptual understanding required.

Specific behaviours, questioning techniques, discourse, and collaboration were modelled to improve student engagement in class. Team teaching strategies were implemented and discarded as appropriate throughout the course; student feedback was used as a deciding factor.

Student feedback was collected through multiple online surveys (mapped against the TIFEL framework), focus group discussions, informal discussions, and anecdotally.

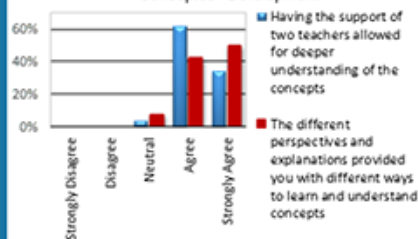
Musical Chairs Model



"Faculty must make the shift from being experts to being expert learners, for in the collaborative classroom, teachers and students join in a shared process of intellectual discovery"



Conceptual Development



RESULTS

What overall effect do you feel team teaching has had on your learning in the Mathematical Studies course?



Student preference for a teacher



DISCUSSION

Measures of student engagement indicated strong preferences for team teaching compared to single teacher approaches. Students valued the alternative explanations provided and felt conceptual development was enhanced. Although class size was effectively doubled and initially flagged as an issue, accessibility to teacher support was felt to have increased in the team taught classes. Effectiveness of the teachers' pedagogy was also highlighted as having adapted to, and improved because of, the team teaching approaches.

Even though a proportion of students felt no real difference in their learning due to team teaching, 100% of student survey responses indicated a preference for team teaching instead of the single teacher approach. The two wordle images show the emphasis of student comments from pre to post team teaching (above right and below left) having changed from one of 'difference' to a focus on 'teaching'.

Unique benefits were felt across all elements involved in the team teaching:

- ◆ Student engagement and motivation improved (absence rates were halved in team taught classes compared to single teacher classes).
- ◆ Improvement in staff enthusiasm for teaching and learning.
- ◆ Development of a community of learners through increased peer collaboration.

- ◆ Ongoing professional development within the classroom on a daily basis.
- ◆ Development of self-directed learning skills through articulated student choices.

CONCLUSION

Team teaching provided an opportunity to develop and implement innovative pedagogical approaches to improve student engagement and achievement in Mathematics. Although achievement was not significantly improved throughout the course of the study, student engagement and motivation benefitted strongly from the arrangement. Teacher reflective practice improved alongside the development of explicit pedagogical approaches.

Analysis of results suggest refinements to pedagogy and assessment methodologies could support increases in student achievement using the demonstrated levels of improved engagement and resilience in students. Further research into effective assessment practices in team teaching environments would be required.

Bibliography
1. Lavee, Y. (2007) Team Teaching: Benefits and Challenges. *Journal of Management Education*, 41(1), 1-15.
2. Kohn, M. (2001) *The Power of Teamwork*. New York: HarperCollins.
3. Kohn, M. (2001) *The Power of Teamwork*. New York: HarperCollins.
4. Kohn, M. (2001) *The Power of Teamwork*. New York: HarperCollins.
5. Kohn, M. (2001) *The Power of Teamwork*. New York: HarperCollins.

