



# A teaching team: More than the sum of its parts

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Team teaching is not a new idea with a history spanning more than 40 years. It is an enduring idea yet its practice would not be the norm in most Australian school settings and across most content areas. This paper discusses the experiences of two educators who were given the opportunity to team teach in the area of mathematics education at a tertiary institution. It explores some of the challenges and joys of working in an educational environment which celebrates discourse, questioning and risk taking while modelling a collaborative approach for students.

Keywords: team teaching, professional practice, pedagogy, tertiary teaching, dialogic teaching

As part of a mathematics specialisation pathway for (predominantly third year) undergraduate pre-service teachers, a unit in primary school statistics, probability and algebra was offered. A total of 29 students were involved in this unit and were split into two tutorial workshops of three hour duration over a 13 week time span. Two mathematics educators were allocated to facilitate one workshop of the unit each and the decision was made to team teach the workshops.

For the purposes of this paper team teaching will be defined as a group of two or more teachers working together to plan, conduct and evaluate the learning for the same group of learners (Deighton, 1971).

Six models of team teaching have been identified by Maroney (1995) and Robinson and Schaible (1995) and team teaching usually involves a combination of these models dependent on the particular teachers and learners. For a description of the features of these models see Table 1.

**Table 1: Models of team teaching**

Model	Features
Traditional team teaching	<ul style="list-style-type: none"> <li>Teachers actively share the instruction of content and skills to all students</li> </ul>
Collaborative teaching	<ul style="list-style-type: none"> <li>Team teachers work together in designing the course and teach the material not by the usual monologue, but rather by exchanging and discussing ideas and theories in front of the learners</li> <li>The course uses group learning techniques for the learners, such as small-group work and student-led discussion</li> </ul>
Complementary team teaching/ Supportive team teaching	<ul style="list-style-type: none"> <li>One teacher is responsible for teaching the content to the students, while the other teacher takes charge of providing follow-up activities on related topics or on study skills</li> </ul>
Parallel instruction	<ul style="list-style-type: none"> <li>Class is divided into two groups and each teacher is responsible for teaching the same material to his/her smaller group</li> </ul>
Differentiated split class	<ul style="list-style-type: none"> <li>Dividing the class into smaller groups according to learning needs</li> <li>Each educator provides the respective group with the instruction required to meet their learning needs</li> </ul>
Monitoring teacher	<ul style="list-style-type: none"> <li>One teacher assumes the responsibility for instructing the entire class, while the other teacher circulates the room and monitors student understanding and behaviour</li> </ul>

The mathematics educators involved in this project made the conscious decision that the elements of the traditional, collaborative and monitoring teaching models would underpin the learning environment.

In order to facilitate this team teaching approach, the authors engaged in a four stage process.

### **Stage 1: Pre-planning**

In the case of this study the mathematics educators (the authors of this paper) knew each other well and had over a period of time had ample opportunity to express their pedagogical beliefs and their attitudes towards teaching and learning. The agreement of outcomes and pedagogy to achieve those outcomes was an extremely important step in the development of a cohesive team teaching approach. The planning, delivery and assessment of the required outcomes had a cohesive quality which meant that there was no 'hint' of a divergence of purpose and that the students received a clear articulation of not only the learning journey they were taking but how that journey would unfold. That is, if two disparate pieces of pedagogy were employed which seemingly undermined the validity of each other it is more than likely that the content would be obfuscated. It was also clear that unless the outcomes were clearly articulated and understood by all members of the team, the capacity to flexibly respond to student needs might be hampered.

Although the situation may not allow for a choice to be made, for example where teachers are put together through a particular need of a work environment, it was advantageous that the members of the team had a respect for each other and have personalities which allow them to work together. This does not mean that disagreements did not happen, and in the planning stage some disagreements are probably both inevitable and also desirable as they facilitate reflection on what is being proposed, but these disagreements needed to remain on a professional level.

### **Stage 2: Planning**

This stage of the team teaching should be one that is as pleasant, challenging and rewarding as the teaching itself. Joint planning was needed, though this did not mean that the distribution of responsibility in each phase of the planning was equal. At certain times one member took the lead in the planning with the other member adding to the richness of the plan through suggestions. The roles were then reversed in a different part of the planning. However the planning was achieved, both voices needed to be heard and an acknowledgement of all points of view were necessarily included. Again, the pre-planning stage had great importance in building a prior agreement in outcomes and pedagogy, as an understanding of the common way forward was paramount. A slightly diverging opinion could be expressed but it could not be allowed to be counter to the general direction of the teaching and learning.

Given that in any one tutorial session there may be, and in this particular circumstance always was, more than one 'part' (i.e. activity, discussion, feedback session, reading etc.) then a broad plan of who would facilitate each part was required. This allowed the opportunity to discuss not only what the content was to be but also how the lesson would flow. Issues such as the order of the activities to best draw out the learning required and the value of keeping the same person delivering for the sake of continuity or bringing a 'fresh' voice to the discussion, needed consideration.

It was this model of one person leading and the other supporting that the authors decided to adopt. In planning for the delivery of the learning, one person would take the role of the leader for a particular part of the lesson and be charged with preparing the materials, planning the delivery and having a clearly defined set of outcomes. This was then brought forward for discussion and any fine tuning took place. It was also at this time that any possible 'value adding' from the second teacher might be discussed. The 'value adding' might be where an area of expertise or experience might be brought to bear to add authenticity or clarity to the situation.

It should be noted that the construct of the leader and supporter roles to facilitate planning and delivery is not the only manner in which to team teach. There may be compelling reasons to share the planning and delivery in a manner where both teachers are equally sharing the delivery of the very same materials. The authors of this paper did not feel that this was a model with which they would be comfortable as it could lead to some dislocation of message. It is also a model which seemed to lend itself to the need for a much tighter 'script' and this did not suit the preferred style of delivery of the authors as it may have detracted from the degree of spontaneity.

At this stage it was also important to determine the assessment tools which would be employed in the course. There needed to be a consensus not only on what was to be assessed, but the method of assessment, the rubric used to grade the assessment and who would design the assessment. Agreeing on these matters at this stage eased much of the possible consternation down the track and sharpened the focus all parties had regarding the intended outcomes.

### **Stage 3: Implementing**

If the presence of a second person in the classroom did not alter the manner in which the teaching and learning environment operated then questions need to be raised as to the efficacy of having the second person present. Having an extra 'body' sitting passively in the back of the classroom would maintain the common paradigm of the teacher/student relationship but would not exploit the possible advantages of the second person.

#### **Dialogic possibilities**

One of the advantages of having more than one teacher in the classroom was that the "position of the knowing teacher/teachers is diffused" (Game & Metcalfe, 2009, p. 46). This situated the teachers as learners and thinkers who did not necessarily have complete knowledge and highlighted the learning process itself. Having the teachers ask questions, bounce ideas, raise hypotheses and make new connections created a learning space which encouraged the students to engage and gave 'permission' for them to do the same.

There was also the prospect of getting into what Anderson and Speck (1998) call a 'respectful debate'. That is a debate which is professional, collegial and expert. This was a powerful demonstration to the students that disagreements can be had, and can be discussed without rancour and that different perspectives can be brought to bear on the same situation.

The teachers had to be careful that the sessions did not become a dialogue just between them, no matter how fascinating they found the topic under discussion, at the centre of that discussion had to be the learning of the students. Therefore the students needed to be included in, and perhaps take over the debate as quickly as possible and feel an integral part of the intellectual discourse.

#### **Questioning**

There is abundant research that indicates good questioning to be a vital component in the teaching and learning environment. In the busy classroom situation where there are competing draws on the teacher (answering questions, delivering the required content, monitoring the available time, organising the distribution of materials etc.), even experienced teachers could miss the opportunity to ask probing questions. The second person in the classroom had the time to first of all recognise the need for the question through observation of uncertainty amongst some of the students or perhaps an overheard remark or through seeing a note that had been taken that had misinterpreted what had been said, and then the time to construct an appropriate question.

In a classroom with dialogic possibilities, the phrasing of this question by the support teacher could then be enhanced, explained or explored by the leading teacher. Fundamentally there was a greater chance that the question would in the first place be asked and that the quality of the question would be

enhanced. Game and Metcalfe (2009) suggested that team teaching assists in opening the questioning process.

Open questions can be quite challenging for some teachers, allowing a situation to exist where the answer may not immediately be known may be uncomfortable. The situation of having a second teacher in the classroom alleviated this discomfort somewhat in that the clarification or answering of the question could be taken on by the second person. Again, the capacity to sit back and reflect on the question could be an enormous advantage, as was having two knowledge sets to draw upon. Also, the capacity to admit a lack of knowledge about something reinforced the teacher as a co-learner with the students, a co-learner who was willing to admit areas of uncertainty and pursue understanding.

### **Modelling**

Team teaching provides an opportunity for teachers to model learning for students. Team members continue to learn from each other about content and pedagogy throughout the team teaching experience (Shibley, 2006). The students in this unit believed that the modelling of exemplary pedagogy was one of the most valuable aspects of the unit. The modelling of mutual respect and a genuine concern for the learning process, where teachers and students were engaged in an intellectual exchange, encouraged motivation and deep learning (Hanusch, Obijiofor & Volcic, 2009). Furthermore, the modelling of a collegial approach was an important element for students to appreciate. The benefits of working collaboratively were essential learning for students to take with them into schools.

### **Developing ideas**

Just as even an experienced teacher may miss the opportunity to ask a probing question, they also may not always fully exploit an idea to fully realise its potential. Again the opportunity to take a 'back seat' in the teaching allowed for a second person to reflect on what was being offered and 'value add' to the situation by offering a question, an anecdote or perhaps even introducing an activity. This allowed connections of knowledge to form from the joint dialogue prompting teachers to begin from new starting points that arose in the class (Game & Metcalfe, 2009). The potential here was for immediate further development of the idea, but this did not always have to be the case. It resulted sometimes in some notes being taken to plan for future learning to take place.

### **Working to strengths**

As mentioned previously, having a second person in the classroom allowed the students to view the teachers as co-learners. It also afforded the opportunity to draw on any particular strength that each of the teachers may have. In the case of the authors, one of the authors came from a background of predominantly teaching in secondary classrooms and the other from a predominantly primary school background. This meant for instance, that illustrations of good practice could be authentically drawn from either or both of these environments. Similarly there could be an instance where one of the teachers had a better knowledge and understanding of the content of a course and the other a stronger understanding of pedagogical issues. This sharing of perspectives and experiences assisted in creating a learning environment rich in knowledge (Carpenter, Crawford & Walden, 2007). The synthesis of these two strengths could only be of benefit to the students by providing a creative learning environment.

### **Communicating with students**

Just as children sometimes play their parents off against each other, there is the potential for students to play their teachers off against each other in a team teaching environment. It was vital that any student communications outside the classroom were discussed and agreed upon by members of the team. This ensured a consistent approach so that students knew exactly where they stood and they could see that all team members were 'copied in'. This was especially important when members of the team were providing advice and feedback on assessment items.

## Assessing student work

After determining what was to be assessed and how that would be accomplished at the pre-planning stage, the discussion of who would complete what assessment was entered into. Yet another positive of the team teaching approach was that just as teachers could draw on each other's strengths in the delivery of the materials they could also draw on each other's strengths in the realm of assessment.

In the case of the authors, it was decided that there would be three assessment pieces required of the students in completing the course. Due to University policy one of these was an examination and two were in the form of assignments. Although both teachers were involved in creating the topics and questions for the assignments and the ensuing marking rubric by which the marks would be allocated, one teacher took the duty of marking one assignment and the second assignment was marked by the other teacher. This allowed firstly for a uniformity in the expectations for the assessments and a consistency in the manner in which marks were awarded. Equally important was that on more than one occasion the advice of the supporting teacher was asked in order to clarify a student's response to a question. This was seen as a way of moderating the response that the lead teacher might supply, or equally add strength to the reasons behind perhaps not accepting a student's thesis and perhaps delivering a low mark.

## Stage 4: Reflecting

After each session a short amount of time was set aside for the purpose of reflecting upon the lesson just completed. Research regarding reflective practice is clear in that it is a major contributor to becoming an 'effective' teacher. However, when being the single teacher in a class, the demands of the classroom sometimes means that reflection *in* practice is not feasible and reflection *on* practice becomes problematic. Clearly a second reflective practitioner can remind a teacher of instances of engagement (or lack of it) and incidences, both positive and negative, which may have escaped their attention, due to dealing with other demands of teaching. This is what Anderson and Landy (2006, cited in Leavitt, 2006) descriptively called "testing the pulse of the course" (p. 3).

This reflection was essential in that it could help steer the content, pedagogy and discussions that would form the subsequent sessions, it also brought focus to the quality of interactions between the teachers involved, as well as the teachers and the students. There was a natural sense of addressing the question of "Is this working?" and an opportunity to make adjustments, small or large, as required.

## Conclusion

The feedback received from students throughout and at the conclusion of the unit was positive. They appreciated the dual perspectives, the modelling of collegial pedagogy and the flexibility of approach that the team teaching allowed. Having two voices in the room heightened their engagement, especially as the workshops were three hours in duration. The students saw that although the pedagogical approaches were similar, that each member of the team brought their own personality and range of experiences to the class. Having two people in the class allowed students to seek clarification from the other teacher if they had not understood a concept presented by the lead teacher. It also provided the students with an opportunity to see true collaboration in action.

Circumstances do not always offer the opportunity for team teaching to be possible. Sometimes this is through a lack of resources in a work environment, sometimes a lack of will and sometimes a lack of understanding about the process and the rewards it can bring. There is no doubt that at first view the preparation required to make team teaching work effectively can seem quite daunting but the rewards from a personal and professional viewpoint more than mitigate this.

Although the experience described in this paper was situated in a mathematics education setting, the modelling of collaborative pedagogy and the flexibility of approach enabled by the team teaching environment, could lend itself to any learning area. The feedback from students, coupled with the reflection of the authors, see the benefits of this approach as generic rather than subject specific.

From the perspective of both of the authors of this paper, the opportunity to engage in a team teaching environment has been one of the more rewarding educational experiences in careers as teachers spanning more than 30 years. The opportunity to model for students the kind of educational environment which celebrates discourse, questioning and risk taking has been liberating. The chance to work with another person who shares a passion for not only a learning area but learning itself has been validating. The prospect of enhancing both content and pedagogy, and ultimately strengthening pedagogical content knowledge through listening, observing and entering into discussions with a knowledgeable colleague has been a marvellous learning opportunity.

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