# Cooperative Learning Strategies Pilot for Northern Territory Classrooms

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## Abstract

Cooperative learning strategies are an important tool in working towards equipping students with the necessary skills to be valuable participants not only within educational settings but also within the community and employment sectors. This paper examines the use of cooperative learning strategies within a primary school setting over a three-month period by four teachers who utilise these strategies within different contexts. The research is based upon the process of Action Research. The findings examine the emerging relationships as a result of the implementation of cooperative learning strategies, social skills requirements necessary for the successful implementation of cooperative learning, and the flexibility inherent with the knowledge associated with utilising cooperative learning strategies.

Students at all levels need to be able to think critically about issues and then to be able to participate in effective decision-making processes. Cooperative learning strategies are an effective method of communicating this process. Not only do these formal cooperative strategies provide the learner with an opportunity to be involved in the planning of their learning experiences but they also provide students with the framework and structure to make decisions and accept their consequences.

> 'The knowledge of the cooperative learning strategies changed the way that I teach. I now feel confident planning my lessons based on students working together because by using the strategies the students became accountable for their contributions to the group. When I had tried to use group work before it didn't always work because sometimes some groups would stay on task but most of the time they would be talking about what happened on the weekend. The main difference for me between using formal cooperative learning strategies and informal group work was that when I used the informal methods it was difficult for me as the teacher to ensure that the outcomes that I had intended were actually achieved by all of the students. The formal cooperative learning strategies provided a clear and defined structure for the students to complete an activity within and provided me with a way to check that desired outcomes were being met, the students were accountable for their work.'
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> Personal communication; participating teacher

## Introduction

The teachers' comment above made by a participant in a study of cooperative learning strategies reflect those within Australian society., James Watson, Nobel Prize winner (co-discoverer of the double helix) makes the point that 'nothing new that is really interesting comes without collaboration' (in Kim-Eng Lee 1999:42). Our society is increasingly demanding that people have the ability to work together in an effective way and within diverse and demanding situations. Participation in education and training is considered vital for a flexible and responsive workforce (OECD 2001) in a Western society characterized by an emphasis on a learning society, a knowledge economy and life long learning (Kearns 1999, OECD 2000) This is reflected every week in the local and national papers employment sections, within employment selection criteria and within Curriculum Framework documents nationwide.

Learning is a social process embedded in relationships that need to be recognised in pedagogy and teachers' professional learning. Wenger (1998:4) described learning as based on the idea that people are social beings, knowledge is generated and interpreted in relation to activities and enterprises and the meaning placed in those activities. Learning and knowing processes are understood as a function of the interconnected elements of social participation. Learning, thinking and knowledge structures are generated by the activity that people engage in and their relationships within the systems of a socially constructed world. Bennett (2004) argued that the process of achieving cooperative and collaborative skills is not being reflected in many traditional education settings where students are expected to compete against one another in an educational system with an individualistic focus.

This paper will initially consider the notion of cooperative learning as it provides background information for the study. Johnson and Johnson (1998:1) note that cooperative learning was virtually unknown 30 years ago but is now a 'standard educational practice in almost every elementary and secondary school and many colleges and universities in the United States, Canada and a variety of other countries'. Cooperative learning exists when student's work together to accomplish shared learning goals (Johnson and Johnson 1999). Formal cooperative learning methods need to be carefully structured by the teacher to achieve the two features of individual accountability and positive interdependence. If this careful structuring does not occur Bennett (2001:141) explains that, 'group work that is not structured thoughtfully is one of the least effective approaches in the teaching and learning process'.

Through a research pilot study, based on the Bennett's work exploring the concept of cooperative learning, teachers explored the relevance of cooperative learning strategies for Northern Territory classrooms. This paper describes the research, the theoretical framework that underpins the use of cooperative learning in more detail and outlines the methodology of action research utilised in this pilot study. This professional learning study offered an opportunity to consider the implications of implementing cooperative learning strategies through critical reflection with teachers. Three themes emerged as a result of this action research process: - the emergence of a number of significant relationships, the need for social skills and the flexibility associated with the use of cooperative learning strategies.

In the first theme, through the use of cooperative learning strategies, significant relationships began to develop. Relationships developed between teachers and the students, between the students themselves and between participants in the study group. The second theme noted that the cooperative learning strategies need to be utilised in conjunction with the active and committed communication and modelling of social skills. Finally, and unexpectedly, the third theme to emerge from the study demonstrated the ease with which teachers, when equipped with the knowledge associated with formal cooperative learning strategies, could transfer this knowledge to facilitate effective cooperative learning which reflected their individual teaching styles and diverse and complex leaning environments.

**Cooperative Learning**

The notion of cooperative learning strategies has been popularised in Australia based on the results gained through extensive research conducted particularly in the United States of America and Canada by researchers such as brothers David and Roger Johnson, Spencer Kagan and Barrie Bennett. Cooperative learning is more then simply putting students into groups. Cooperative learning is about 'structuring groups of students to work cooperatively' (Johnson and Johnson 1994:1). Formal cooperative learning methods share two common features; positive interdependence and individual accountability (Kim-Eng Lee 1999:43). Positive interdependence ensures that each student must contribute if the group is to reach its goal. When students know that their performance depends on their team-mates, they make sure their team-mates stay on task. Thus, as research suggested by Johnson, Johnson and Stanne (2000) and by Kagan (1994: 1:3), students are likely to spend more time on academic tasks in cooperative classrooms that they do in traditional classrooms. In this way, the formal

cooperative learning methods differ from informal collaborative groups. The informal groups often do not ensure that the contribution of each member is necessary for success (Kagan 1994: 1:4).

The second feature of formal cooperative learning methods is individual accountability which ensures that every member of the group is held responsible to demonstrate that they have accomplished the learning (Bennett 1991:33). There are other elements of cooperative learning methods that Bennett (1991:33) and Johnson and Johnson (2000) suggest that teachers need to structure for: face to face interaction among group members, actively teaching and motivating students to use social skills, and group processing where groups reflect on their goals and how the group is functioning. The results of such research into the effective use of cooperative learning strategies were used as the basis for a study into their effectiveness within a Northern Territory classroom.

## The Study

### Background

To examine this notion of cooperative learning, a three-month pilot study entitled Cooperative Learning Strategies Pilot for Northern Territory Classrooms was conducted in a typical small primary school setting. The school was typical as it represented a cross section of students from various socio-economic and cultural backgrounds. The school largely reflected the local community, an urban primary school in a multicultural community with a significant proportion of Indigenous community memebrs. The group of participants in the study represented a diverse range of experience, ideas, background and age. The study group of four teachers included a beginning teacher, a special needs educator and two experienced teachers. Teachers' participation was voluntary.

This study investigated the notion that cooperative learning strategies when implemented using the Northern Territory Curriculum Framework Documents (2002) assist teachers in working towards achieving one of the EsseNTial Learnings, the Collaborative Learner. The Collaborative Learner is someone who: -

- Listens attentively and considers the contribution and viewpoints of others when sharing own ideas and opinions.
- Uses constructive strategies to resolve conflicts.

- Fulfils their responsibilities as a group member and actively supports other members.
- Uses appropriate language that is sensitive to audience and culture within a range of contexts.

(NT Curriculum Framework 2002)

The Northern Territory Curriculum Framework documents establish in the EsseNTial Learning and focuses on students' outcomes, in this context students can be collaborative learners as it applies to improved outcomes. For the collaborative learner outcome to be achieved it is necessary that teachers be given the opportunity to explore in an informed way the tools of cooperative learning strategies. This is because not only do these strategies follow the objectives of the Northern Territory Curriculum Framework but cooperative learning strategies are also founded on extensive research (Kagan 1994:31). The consistency of the results and the diversity of the cooperative learning methods provide strong validation for its effectiveness (Johnson and Johnson 1998).

## Methodology

This project utilised an action research methodology enabling participants to be essentially involved in the learning process and investigate the needs of teachers to implement and evaluate the use of cooperative learning strategies in the classroom. Action research can be described as 'a form of self-reflective inquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or education practices, their understanding of these practices and the situation in which the practices are carried out' (Kemmis cited in Wals 1996:302). 'Action research is a flexible spiral process which allows action (change, improvement) and research (understanding, knowledge) to be achieved at the same time' (Dick 2002:2). 'The understanding (that is associated with action research) allows more informed change and at the same time is informed by that change' (Dick 2002:2). The responsiveness and engaged nature of action research allowed it to be used within this study to develop notions from the data as the process evolved over a relatively short period. This responsiveness of action research also generates both action and research outcomes.

In the case of this pilot study both outcomes were regarded as being important, namely, action taken on behalf of the participants to facilitate effective cooperative learning within their classrooms and research into how this action can be achieved across a broad spectrum of

teachers within the context of Northern Territory classrooms. This definition of action research is based on the methodology outlined by Checkland (1981) and also encompasses the critical action research approach taken by Carr and Kemmis (1986). 'Within all of these definitions there are four basic themes: empowerment of participants; collaboration through participation; acquisition of knowledge; and social change' (Masters 1995:3). The process of action research could and should be ongoing but even within this short pilot study a range of valuable outcomes were noted which could be used as the basis for a bigger project.

This action research process was initiated with the study group through a workshop conducted by an action research consultant. The process was developed by facilitating a series of workshops based on using specific cooperative learning strategies in the classroom. After the initial workshops outlining the action research process and a brief introduction to cooperative learning strategies and the underlying theories, the group then chose to trial the same strategy every two-week period over one term and meet to reflect on their implementation and the outcomes.

The study group met periodically throughout the 10 week study period to reflect on experiences during the previous research cycle and to discuss and select the next course of action. Kemmis (1988) outlines this cyclic nature as follows, plan – act – observe – reflect and then repeat the process. This allows the researchers to involve the participants directly in the research process. Through this cyclic process the effectiveness of cooperative learning strategies in achieving specific learning outcomes as outlined in the Northern Territory Curriculum Framework was then evaluated and critically reflected upon.

Data collection was conducted using three sources. The initial source involved data being collected from the fortnightly meeting via the use of digitally recording the conversations that took place. These recordings were then analysed by the primary researcher. The teachers involved were also asked to keep journals outlining their reflections and processes involved to be able to successfully implement and evaluate the use of these cooperative learning strategies in Northern Territory classrooms. The participants would use these journal entries and other material, such as examples of work conducted in their classes to participate in the fortnightly discussions. In this way, the project, while brief in time, documented emerging trends, which are discussed below. The research team also collected their own reflections on the process and outcomes

## Results

Through the use of action research the end result began to emerge from the data being collected and some limited conclusions could begin to be drawn. A number of themes emerged as a result of this action research process. These were:

- Emerging relationships
- Social skills
- Flexibility

One of the unexpected areas of interest that was demonstrated through the emergence of these themes related to the ease with which the participants were able to adapt the strategies and ideas to effectively reflect their own personal teaching styles and teaching environment.

### Emerging Relationships

The following vignette demonstrates a number of points surrounding the issue of emerging relationships. This example illustrates effectively the development of both conflict resolution skills and the ability to value and involve everyone's opinion as a result of utilising cooperative learning strategies.

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*'The discussion after (using a cooperative learning strategy) was just brilliant, easily a 40 minute discussion after it, they had a great time with it, everyone had fun and everyone was involved and nobody took control, easily a 45 minute lesson, I am going to use it again for sure.'*

'What about the bossy students who you were having trouble with?' – researcher

*'No, no they were really good, I said everyone had to have a pen and they could all go for it'*

'Any negatives, (associated with using the cooperative learning strategies)?' – researcher

*'I don't think so, everyone was involved, and the only negative was that I had to explain it a couple of times.'*

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These reflections were made at the end of the study. The teacher had recently used a particular cooperative learning strategy for the first time within their classroom. At the beginning of the investigation this participant had encountered problems when trying to implement cooperative

learning strategies due to some dominant class member personalities. The teacher experienced success in achieving effective cooperative learning within the classroom within a relatively short period of time and was very positive about continuing the process of facilitating cooperative learning across educational settings and about sharing with others the successes that had been achieved.

As a result of employing cooperative learning strategies and analysing the outcomes of the action learning project, a number of significant relationships emerged. These relationships were evidenced in the following three areas.

1. Between students
2. Between teachers and students
3. Between participants in the study group.

*Between teachers*

The three teachers in the study group consistently reported that, as a result of using the cooperative learning strategies, students were being equipped with strategies to deal with conflict and that the students began to appreciate and value the opinions of all members of the group. *'The use of the (*cooperative learning*) strategies relaxed me, I felt that I didn't have to solve all of the problems all of the time.'* This accords with Bennett's (2001) observation that that formal cooperative learning strategies allow for teachers to no longer be the sole source of information and students are no longer passive recipients.

Teachers reported that as part of the implementation of cooperative learning strategies it was important to actively teach, based on student input, effective and appropriate ways to deal with conflict when working with others. This had a flow-on effect into other areas. As a teacher reported, '*one of the things I found really helpful as we worked through things, whenever a dispute came up with something, I could say you go and work it out yourselves and they were much better and everyone could. Very quickly they could come up with a solution. A lot had to do with all of the talking we did before when we started with cooperative learning strategies.*'

*Between students*

Another teacher reflected on an incident during lunch between a number of students who were asking her assistance to deal with a dispute. '*I reminded them about their strategies from their cooperative learning activities in class and they then were able to settle the dispute without my help. Dealing with these*

*conflicts every day can be really time consuming and frustrating especially when I think of everything else that I need to be doing'*. Conflict resolution is a very valuable skill for students to acquire to facilitate effective working with others throughout their lives both in professional and personal arenas.

*Between participants in the study group.*

The third area of interest, in terms of relationship development, involved the participants in the study group themselves. *'We ask a lot of the kids, we want them to work together cooperatively but how many of us do and we can only begin to imagine the homes that some of these kids come from. It is hard because cooperation is not reflected in the way we often live and work'.* The process of action research contributed to the emergence of significant and meaningful relationships within the study group. They themselves became more cooperative and collaborative as a working team. The processes associated with action research enabled communication channels to be opened and strengthened between the participant group. At the end of the study there was a strong sense of the positives associated with working cooperatively and further desire to involve other members of the school community.

**Social Skills**

Through the study the emergence of strong relationships between the students demonstrated the strong connection between working cooperatively and the need to actively teach the social skills required for this collaboration to occur.

> *'I needed to go over the strategies that the class had come up with concerning listening and taking turn. When I don't, they forget and I have found that I need to reinforce certain social skills needed for the groups to work well. The strategies are good but they don't work by themselves. As the teacher I need to know the strategies but I also need to teach social skills regularly.'*
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> *'I feel the more we do cooperative groups the better children are learning to work together and respect each others ideas and opinions. The strategies also give me a chance to observe children and to note any skills, particularly social skills that need improving.'*
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> *'Once we went through them (conflict resolution strategies) the students began using them and this helped, there was less arguing.'*
> *'I should have gone through the rules about listening and taking turns.'*

The participants reported that cooperative learning strategies in isolation are not enough to achieve the outcomes of developing a collaborative learner who is able to listen and consider the viewpoints of others, possesses conflict resolution skills, participates as a group member and is able to use appropriate language (NT Curriculum Framework 2002). Students need to be actively and explicitly taught often and in a variety of ways, to cater for all types of learners, the particular social skills needed to be able to work with others. Assumption of these skills was very significant in the failure of the strategies. One final point in relation to the establishment of the cooperative learning strategies and the associated social skills is worth noting; that they do take time to establish but, as one participant pointed out '*they take time to establish and then they are a time saver.*'

The social implications involved in engaging the strategies in the classroom link directly to the EsseNTial Learnings as outlined in the Curriculum Framework documents (2002). For students, across the age spectrum of year 2 to year 7, to be able to work cooperatively they need to be actively taught and modelled the social skills and strategies required to be able to effectively participate in group situations. The assumption that students were able to utilise these social skills and strategies, and the subsequent evidence that these skills were not always at the necessary standard to effectively participate in cooperative learning activities, was a recurring theme experienced by participants in the study group.

**Flexibility**

The final vignette details one of the unexpected findings of this study, which related to the ease with which the participants were able to adapt the strategies to effectively reflect their own personal teaching styles and teaching environment.

> '*Once I knew the strategies I could use them in situations that I would never have thought would work as a cooperative learning activity. It just takes practice, confidence and a willingness to think outside of the way that we might normally do things. When it goes right the students end up needing me less, they become responsible for their own behaviour and learning, it doesn't happen all the time but when it does, it makes me remember why I became a teacher in the first place.*'

All of the teachers took the strategies into very different teaching environments and were able to all achieve success in working towards achieving the collaborative learner outcomes as established in the Northern Territory Curriculum Framework (2002). '*Not once was there an*

*argument, if there was I said look at the strategies and work it out yourselves.'* All participants responded that they would definitely use the strategies in the future and that they would encourage others to try them – *'next year I am going to introduce them (cooperative learning strategies) at the beginning of the year and then I could write my programs for the year because I could see the dynamics of the students very early on.'*

The teachers were provided with four cooperative learning strategies and a brief discussion on the theories that underlie the strategies. Armed with this knowledge they were able to adapt the strategies to take into account physical restrictions such as limited space and difficult to move desk arrangements, broad ranges of abilities, cultural sensitivities, limited numbers of students and significant differences in teaching experience and teaching philosophies. *'I could modify stuff not made for cooperative learning strategies once I knew the strategies.'* This reflects Johnson and Johnson (1998:24) who made the point that 'cooperative learning can be used with some confidence at every grade level, in every subject area, and with any task'.

## Implications

The three elements of relationship development, need for social skills, and flexibility that emerged quickly during this pilot study provide strong clues for the broader implications of the study. Many classrooms today do reflect opportunities for students to work with others via group work but have difficulty in achieving cooperative learning where students are able to utilise the social skills necessary for everyone to be involved and where every contribution is valued. During this study it was clear that three important implications emerged for teachers. Firstly, that the use of cooperative learning strategies does assist in developing collaborative learner outcomes as outlined in the NT Curriculum Frameworks Documents (2002). Secondly, that cooperative learning strategies can be adapted to a variety of educational settings. Finally, that cooperative learning strategies provide a structured framework for both teachers and students to work through the process of cooperative learning.

In the first instance, data gathered from this study strongly reflected the ability of formal cooperative learning strategies to facilitate the outcome of the collaborative learner as outlined in the NT Curriculum Frameworks Documents (2002). This is because the common theory underlying cooperative learning strategies as established by Bennett (2001), Johnson and Johnson (2004), and Kagan (1994) suggest that group processes be carefully designed to promote positive interdependence and individual accountability which is reflected in the desired qualities of the

collaborative learner. The generation of positive interdependence is achieved when all members of a group feel connected to each other in the accomplishment of a common goal and individual accountability is accomplished by being able to hold every member of the group responsible to demonstrate the desired learning outcomes. (which Wenger 1998 describes as a learning community) *'For a change, during group work, I could see who was doing what and I had time to walk around and observe all of the groups. This helped me to be able to determine and reflect upon desired outcomes for all students in the class '.*

The evidence from the data collected in this study suggests that the use of cooperative learning strategies does assist teachers significantly in achieving the outcomes associated with the collaborative learner. Evidence associated with the emergence of relationships as a result of using cooperative learning strategies between students and between students and teachers clearly supports collaborative learner outcomes. Participants frequently reported students having an increased ability to use conflict resolution strategies in an increasing and varied array of situation, not just when participating in cooperative learning activities. Participants in the study frequently reported that, as a result of utilising the strategies, the ease with which they could involve all students in a class was much greater then otherwise. A further positive associated with the study was the flexibility that knowledge of the cooperative learning strategies provided teachers with in programming to achieve the specific collaborative learner outcomes.

Secondly, the study has provided evidence through the relationships that emerged that the use of cooperative learning strategies can indeed contribute to the development of effective cooperative learning within a variety of educational contexts. Participants in the study reflected the view that cooperative learning means so much more then allocating students into groups, and then deciding upon roles such as leader, recorder, reporter and participant. The common complaint from students and teachers alike, based on such an organization, is that it is very difficult for everyone to be involved (Bennett 1991). The same people tend to dominate certain roles and the same people tend to always be carried along in the 'free-rider effect' inherent in such group work situation (Bennett 1991). This information combined with knowledge of the cooperative learning strategies resulted in the participants in this study being able to experience success in achieving collaborative learner outcomes in a variety of educational settings.

Thirdly, some broader educational implications began to emerge as a result of the findings during this study. The formal cooperative learning strategies provide both students and teachers with a

structured and accountable framework to complete activities within and that cooperative learning is a social process. The cooperative learning strategies provide both teachers and students with a framework to work within to experience the different social processes that occur as a result of being involved in cooperative learning. This study found that working cooperatively involved more then the implementation of the formal cooperative strategies. These strategies provided the necessary flexible structured framework for both the students and the teachers to work within but the success of the framework depended upon the level of social skills that the participants were able to utilise. The social processes involved in cooperative work played a significant role in the success in achieving the outcomes of cooperative learning strategies of positive interdependence and individual accountability.

## Conclusion

The purpose of this investigation was as a pilot study for a larger project to examine, through the use of action research, whether or not cooperative learning strategies when implemented using the Northern Territory Curriculum Framework Documents (2002) assist teachers in working towards achieving one of the EsseNTial Learnings, the Collaborative Learner. Through the course of this study three issues concerning the use of cooperative learning strategies and how their effectiveness in terms of achieving the outcomes outlined in the Northern Territory Curriculum Framework became very clear. These issues related to the:

- Emergence of relationships
- Need for social skills
- Flexibility inherent in the strategies

From the data that emerged from this three-month pilot study into the use of cooperative learning strategies some broader educational implications began to appear. For example, that formal cooperative learning strategies provide both students and teachers with a structured and accountable framework to complete activities within and that 'cooperative learning is process-driven, that is, those involved engage in a social process and have to pay attention to that process in order for them to achieve their desired end point' (McConnell 1994:15). This is in line with much of the theory of social interdependence which is said to exist when 'individuals share common goals and each individuals' outcomes are affected by the actions of the others'

(Johnson and Johnson 1998:2), and understands the role of the students' community participation (Wenger 1998:4) in learning engagement.

This study illustrated that formal cooperative learning methods have the ability to provide teachers and students with the flexible structured frameworks to facilitate effective group work. This framework allows for social processes to be experienced and for the process to be successful in achieving collaborative learner outcomes then participants need to be equipped with appropriate social skills. Through the use of cooperative learning strategies teachers are able to build the capacity of students to be able to work with others and to value every contribution, to think for themselves critically about different issues and to use appropriate social skills. Recognising the importance of managing and understanding relationships in education underpins the use of effective learning strategies within this project and implies understanding relationships need to be central rather than incidental to education and learning.

All of these skills and processes are necessary to enable and empower students to be able to develop and move effectively through pathways from school to training to skilled jobs. The implications based on these findings that became apparent within the relatively short period of the pilot study are significant for educators. Therefore, this project justifies the need for further study into this area. Such a study would be conducted over a longer period of time and across a broader range of educational settings. This broader range of educational settings, representative and inclusive of educational contexts within the Northern Territory would ensure a set of sound principles of practice in terms of cooperative learning strategies.

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