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FOR AKO AOTEAROA



Cooperative learning made easy:

A practical guide to
working with tertiary
student groups

How to use this guide

Whether you are an established practitioner of Cooperative Learning (CL) looking for additional ideas and techniques, or a beginner needing practical advice on how best to incorporate group work into your teaching programmes, this guide is for you!

This guide offers numerous suggestions and practical tools for using CL activities successfully in a wide range of tertiary teaching and learning environments. It provides easy access to just-in-time information that you will need when you are designing and implementing CL tasks. The emphasis is on practical suggestions that you can use immediately to introduce CL into your classes.

The guide is structured in two sections to distinguish between informal non-assessed CL activities that you might use in a single class period, and formal assessed CL projects that may last several weeks. The sections are colour-coded so you can identify what you need in the contents page and easily find the detailed information in the text.

We have added helpful hints throughout that are drawn from our extensive practical experience in using CL with tertiary students, together with comments from students and teachers who contributed to our research projects. We have also collated suggestions from the most prominent CL practitioners and researchers and related them to the New Zealand tertiary environment. The appendices provide forms and templates that we have found useful in implementing CL that you can adapt to suit your own programmes. We have not referenced every idea as it is discussed but the reading lists acknowledge the material we have used.

Everyone's teaching situation and style is different. This guide is intended to give you a range of CL tools and techniques that you can use and adapt to fit your particular approach to teaching and learning.

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Cooperative Learning workshop – part of Ako Aotearoa's Professional Development Programme

Jill and Trish have developed a professional development workshop from their research project, to share CL with New Zealand's tertiary sector via Ako Aotearoa's Professional Development (PD) Programme. Titled *Cooperative learning: a teacher's guide to working with groups*, the full-day workshop is designed as a "how to get it right" guide for tertiary lecturers and tutors working with student groups. The interactive session involves essential elements of effective group work with practical exercises, addressing issues of appropriate assessment design, assessment methods and effective monitoring of groups to promote participation, accountability and fairer outcomes for students.

For more information about this PD workshop, go to the Ako Aotearoa website:
www.ako.aotearoa.ac.nz



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Group work is especially useful for students who have difficulties understanding the courses. They can get help from other students.

Student comment

1. Introduction

What is Cooperative Learning?

Johnson, Johnson and Holubec (1993) define CL as *“the instructional use of small groups so that students work together to maximize their own and each other’s learning”* (p.9). Students help each other to complete tasks that are designed to achieve a wide range of academic and social goals. Unlike individual learning, which is usually competitive, students learning cooperatively make use of all members’ resources and skills by asking each other for information and help, evaluating each other’s ideas, and monitoring each other’s contributions.

CL uses active learning principles. Students take part in group learning activities that are aimed at encouraging analysis, synthesis, reflection and thoughtful evaluation of content. Active learning puts students and their learning needs at the centre of a process intended to give them many opportunities to engage actively with new material. Students are no longer passive recipients of information presented by a teacher using traditional lecturing methods. Successful CL can, in fact, help students learn how to learn, an essential factor in current thinking on sustainable assessment.

Cooperative Learning, or learning in groups, is one of the most exciting approaches in education – if not the most exciting approach – developed in the last 50 years. International researchers have produced convincing evidence of the educational, vocational and social benefits of cooperative learning as you can see in the diagram below.



Successful cooperative learning tasks are intellectually demanding, creative and open-ended. They involve higher order thinking skills and lead to lively discussion and active “deep learning”. “Deep learning”, as opposed to surface learning, examines new facts and ideas critically, encourages students to relate ideas to one another, to previous knowledge and to their individual experience, and leads to greater retention of learning. Group work is a powerful way to promote deep learning as students constantly need to express, justify and sometimes change their assumptions and their knowledge as they interact with others.

Working in groups is also an effective method of ensuring that students master the “soft” skills that are increasingly demanded by industry. If CL is implemented well students learn to listen to others and to evaluate alternative points of view. They develop the skills to cooperate, plan and lead, and the ability to share leadership as they work on large and/or complex projects. They begin to understand their own learning, and to evaluate their own work and the work of others, and they learn how to work with students from a range of cultures and backgrounds. These are all transferable skills that prepare students well for transition into the workplace and life beyond study.

Challenges for Cooperative Learning in the New Zealand context

For the last three years we have facilitated Ako Aotearoa professional development workshops on using Cooperative Learning in New Zealand tertiary institutions. We have developed this publication as the next stage for participants at their workshops and for any teachers who are considering introducing CL into their programmes.



Teachers on the workshops identified five main areas that they find challenging:

- finding appropriate informal CL activities to use in class
- using CL in content heavy courses such as accounting, engineering, medicine or law where there is an emphasis on students mastering a large amount of correct information
- forming effective groups for formal CL tasks
- assessing formal CL tasks fairly so that teachers and students believe that the final mark given to an individual reflects his or her own contribution
- monitoring and managing problem students in formal CL groups

These are all challenges that can be met easily and confidently if teachers are aware of the many strategies that are available to them. This publication offers practical guidelines and ideas for implementing effective CL, all based on research and extensive practical classroom experience.

Learning is a social process that occurs through interpersonal interaction within a cooperative context.

Johnson, Johnson & Holubec, 1998, p.1

2. CL basics

Building blocks of effective CL

CL is more than just working in groups. Five building blocks, identified by David and Roger Johnson (2009), are fundamental to successful cooperative learning:

» Promotive Interaction, preferably face-to-face

Promotive (positive) interaction means that groups meet regularly to discuss ideas and to establish group relationships. This prevents the development of “pseudo groups” where group members work as individuals and combine their efforts only at the end of the task. There is an established correlation between interaction and learning (Vygotsky, 1978; Webb, 1995), so a well-designed cooperative learning activity must provide many opportunities for your students to discuss, to question, to support one another and therefore to learn.

» Positive Interdependence

In successful CL your students must feel that they need each other in order to complete the group’s tasks, that is, they “sink or swim together.” We need to design group tasks so that students can see that their success depends on interaction and mutual support within the group. This empowers students who might be overwhelmed in a traditional learning situation where the teacher and the high achieving or more vocal students tend to dominate. It also introduces students to the idea that they need to rely on, and have connections with, others to function successfully at work and in life.

» Individual Accountability

Group members must always feel that they are individually accountable for helping to complete a task and for mastering material. They must understand that a “free-riding” situation (depending on others to do most of the work) will not lead to group success. Tasks need to incorporate both group and individual accountability.

» Interpersonal and Collaborative Skills

Before beginning group work it is important that your students have practised skills for working together effectively as well as for ensuring that group maintenance is carried out efficiently. Your students need to be taught leadership, decision-making, trust-building, communication, intercultural and conflict-management skills. They need to learn and practise ways of giving constructive feedback and to use probing questions as students do not automatically know how to do this.



Cooperative Learning



» Group Processing

Groups need specific times and processes to reflect on how well they are achieving their goals and whether they are maintaining effective working relationships among their members. This needs to be carried out throughout the life of the group, not just at the end, and needs to be practised by your students to ensure that they develop the skill to do it effectively. You, as teachers, also need to monitor the groups and give regular feedback on progress.

Tertiary teachers often feel that they are restricted in the time they have to cover these elements as individual courses may be too content heavy. We recommend that a standard departmental policy is established where all students are trained in collaborative skills at the beginning of their programme. Individual teachers can then simply refresh and build on what their students have learned already.

Our experience has been that most problems in groups occur when the teacher does not structure one or more of these building blocks into the group activity. It is very easy to blame students for group problems that are the result of faulty task design and implementation.

Well designed activities will enable faculty to avoid the dysfunctional aspects of other group learning strategies.

Millis & Cottell, 1998, p.42

Informal and formal CL groups

CL groups can be informal or formal. It is important to understand that each type has different uses and presents different organisational challenges.

Informal cooperative learning groups are temporary, ad hoc groups that last from a few minutes to one class period. They are used to focus students' attention on the material to be learned, set a mood conducive to learning, help organise in advance the material to be covered in a class session, ensure that students cognitively process the material being taught, and provide closure to a class session.

They are often organised so that students engage in **focused discussions** before and after a lecture and to intersperse **turn-to-your-partner** discussions throughout a lecture. Informal cooperative learning groups help counter what is claimed as the main problem of lectures: "The information passes from the notes of the professor to the notes of the student without passing through the mind of either one" (Smith, 1995).

Formal groups are groups that are set up for project work that will last a number of weeks and will usually involve work outside the classroom. In a tertiary context the work of these groups is often assessed.

Practical activities and guidelines for these learning groups are featured in the following sections 3 and 4.



When to use informal CL groups

Cooperative learning techniques can be used informally in class to:

- Share ideas and opinions
- Focus attention on the material to be learned
- Process and master course content, particularly relating the content to past experience and what the students already know
- Revise course material
- Break up a lecture and energise a large class. This should occur every 10 – 15 minutes as this is approximately the length of time an adult can concentrate without a break. (There's nothing wrong with using lectures at times but there is a lot wrong with using them without a break!)
- Provide closure to an instructional session

When to use formal CL groups

Cooperative learning can be used with formal groups for longer term assessed work to:

- Produce assessed outputs based on course content
- Provide “real life” assessment that motivates students
- Promote the development of collaborative and project management skills that are required by industry
- Encourage reflection on individual learning of soft skills

The role of the teacher in CL

- Creating a safe cooperative environment where all students are respected and where opinions can be expressed and explored honestly
- Structuring effective groups
- Preparing students to work cooperatively – social skills, trust and team building exercises, group processing
- Helping students understand and define the task
- Ensuring that students have the knowledge, skills and resources to carry out the task
- Observing student interaction, checking progress and intervening to help groups or students having difficulty
- Intervening to support the use of collaborative skills and ensure participation from all group members
- Guiding group processing to ensure effectiveness
- Providing immediate feedback during the life of the group
- Tying ideas together and integrating the learning outcomes from the task into future learning
- Evaluating and giving feedback on how well students completed the task.

Employers place greater importance today on the soft behavioural skills than the hard cognitive skills.

Johnson, Johnson & Holubec, 1998, p.1:9

Useful resources

The Foundation Coalition. (n.d.). *Positive interdependence, individual accountability, promotive interaction: Three pillars of cooperative learning*. Retrieved from https://www.uwstout.edu/soe/profdev/resources/upload/acl_piapi.pdf

This resource examines three of the building blocks of CL and provides concise examples of how each can be incorporated into group activities.

Johnson, D.W., & Johnson, R.T. (n.d.). *Cooperative learning*. Retrieved from <http://www.cooperation.org/pages/cl.html>

This article by David and Roger Johnson, respected proponents of CL, provides a useful overview of the basics of learning in groups.

Ted Panitz's homepage. (n.d.). Retrieved from <http://home.capecod.net/~tpanitz/>

Ted's website includes articles and discussions and a very useful e-book on CL.

Cohen, E.G., & Lotan R, A. (2014). *Designing groupwork strategies for the heterogeneous classroom* (3rd ed.). New York, NY: Teachers College Press.

This book is very useful for all aspects of CL. It includes a range of resources for teachers who are using CL for the first time.

Students are not born knowing how to work in teams, and new assignment or project groups frequently make common mistakes that limit their effectiveness.

Oakley, Felder, Brent & Elhajj, 2004, p.14

The widespread and increasing use of cooperative learning is one of the great success stories of social and educational psychology.

Johnson & Johnson, 2009, p.365



Use the Internet to find helpful ideas for using CL. There are few problems that teachers haven't experienced before you - make use of their experiences and solutions!

Useful starting points:

- <http://www.iasce.net/>
- <https://www.cmu.edu/teaching/designteach/teach/instructionalstrategies/groupprojects/tools/index.html>

3. Informal non-assessed CL classroom activities



There are many ways to use CL informally in class. These are some of the most popular and effective activities that teachers can use:

Express ideas / opinions / break up a lecture

» **Think/Pair/Share**

Each student spends time thinking independently about an assigned topic or question. Questions should not be ones that can be answered superficially or by using rote memorisation. The “think” time is essential as it allows students to retrieve information from their long term memories and gives quieter, more introspective students a space to collect their thoughts and come up with a response. The time might be used to write an individual response to ensure that all students are focussed on an answer.

Students then form pairs to discuss the topic. Each pair can then either join another pair to continue the discussion or students can be called on to share points from their discussion with the whole class.

By this time the level of responses is deeper than if the teacher had posed the question to the whole class and accepted one answer.

In this activity all students in the class are involved in the discussion, all must relate the topic to their own prior experience, and all must examine and justify their own thought processes – essential steps in deep learning.

This is a good technique to use to break up a lecture in a large class where it is difficult for students to move into groups. You may, in some situations, decide to use the first two steps only. It can also be used for more complex tasks where students might be asked to agree on a single solution to a problem.

» **Write/Pair/Share**

The teacher asks students to think about the material that has just been delivered and write three statements about it. Each student then discusses their statements with a partner. This is followed by a whole group discussion to identify the most frequently mentioned ideas.

The teacher’s job begins in earnest when the cooperative learning groups start working. Resist that urge to get a cup of coffee or grab some papers.

Johnson, Johnson & Holubec, 1992, p.2:12

» **Three part interview**

Each student spends time thinking independently about an assigned topic or question. Students then form pairs to interview each other about the topic. Each pair then joins another pair to form a group of four. Each student in the new group reports on what they have learnt from the interview.

This is a useful way of reinforcing material that has been read outside of class.

» **Snowball**

Each student works alone to list ideas and information. They then work in pairs to explain their list to each other and make a combined list. Duplications are eliminated. Two pairs join together and make a combined list without duplications. A whole group discussion follows.

» **Reverse snowball**

Each student works alone to list ideas and information. Students then form pairs to explain their list to each other and identify the three ideas they agree are the best. Two pairs join together and repeat the process to create a final list of the three best ideas. A whole group discussion follows.

» **Roundtable**

The teacher asks a question with many possible answers (“Name all of the items in your home which were not invented 25 years ago”; “What are the ethical problems facing medicine today?”). Using one sheet of paper, students in a group make a list, each person adding one item and then passing the paper to the person on their left. Students should explain their contributions as they write them down to keep everyone focussed and to reduce time wasted reading previous responses. Other members should not slow the process down by questioning or evaluating during the explanation.

» **Four Corners**

The teacher outlines a controversial situation or asks a controversial question (“Does global warming exist?”). Students then go to one of four corners of the room marked Strongly Agree, Agree, Strongly Disagree, Disagree. In each corner the students exchange their opinions or reasoning, and summarise their reasoning for the rest of the class.

» **Numbered Heads Together**

Students are put into groups. Each group member numbers off, so that each member has a number. The teacher asks a question or presents a problem and the students must agree on an answer. The teacher selects a group, and calls a number at random. The student with that number must answer the question, and briefly be able to explain why the group reached that conclusion. If the group has not been able to come up with an agreed answer, they must “pass” until they are called upon again.

Numbered Heads can be especially useful when reviewing large “chunks” of material or in helping students prepare for a test.



Richard Felder,
from North
Carolina State
University, and his
colleagues use CL with
large content heavy
classes. Look up his
website for practical
ideas on how to do this
successfully.

<http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Student-Centered.html>

In QUICK-THINKS:
MAKING LECTURES
MORE INTERACTIVE,
Susan Johnson and
Jim Cooper suggest a
range of informal CL
activities that can be
used with large classes
in a variety of content
areas.

<http://teach.its.uiowa.edu/files/cft.uiowa.edu/files/Quick%20Thinks.pdf>



» **Ask your Neighbour**

Students turn to their neighbours and explain an idea to each other, decide on three important points in the lecture or answer a question about the topic.

This technique is ideal when teaching large numbers of students in a lecture. It means that 50% of the class is talking at one time instead of one student answering a question posed by the teacher.

Master content / solve problems / develop critical thinking

» **Jigsaw**

Course material to be learned is divided into four or five different sections. Students are put into groups and each group is assigned one section of the course material. They read and discuss the material and note the important points.

Students are then assigned to another group where each group member has read a different section of the course material. Each member of this new group explains the important points from his/her material to the rest of the group. When everyone in the group has explained their material the combined information may be used for a group activity such as designing a poster. This reinforces the learning.

This activity is useful for content heavy programmes. When using jigsaw teachers must ensure that the material used is of an appropriate length and complexity for the groups.

» **SUMMER**

- › **Set the mood** – students work in relaxed pairs
- › **Understand** by reading a specified article or section of the textbook silently
- › **Mention** key ideas – one student (the recapper) summarises the main ideas
- › The other student is the **Monitor** who checks the summary and praises the recapper's work
- › Both students **Elaborate** on the ideas in the section *e.g.* connections with other things the students have studied, connections with their own experiences, additional information they are aware of, disagreement/agreement with the text, application of the ideas/questions triggered by the text
- › Both students work together to **Review** and summarise the whole passage.

Roles are reversed for the next section.

This activity is useful for content heavy programmes.

If groups finish early ask a question generalising the task to another situation *e.g.* "Do you think this is true of all...". Keep a list of suitable questions that you can use if you need to.

Cohen & Lotan, 2014, p. 237

» World café

The teacher sets up tables with paper and pens. Students are put into groups of four or five, with each group seated at a table. The groups are given a topic to discuss and are asked to record important ideas, themes and questions on the paper.

After 15 – 20 minutes each member of the group moves to the next table. They may choose to leave one student as the 'table host' for the next round who will welcome the new group and explain what the group discussed and recorded in the previous round. Groups continue to rotate until they have visited all the tables.

A whole class discussion follows where individuals share insights from their discussions. The discussion topics may be progressive as the students move or as each table explores a related aspect of a topic.

» Open market

The teacher chooses a topic that can have a number of different approaches, e.g. different ways of marketing a product. Assign one approach to each group. Each group must research their approach and develop a sales pitch to explain it and to convince the class that theirs is the best possible approach. The rest of the class should be encouraged to question and challenge the presenters.

This is a fun way to cover a lot of content and teaches students to present and justify their argument.

Alone we can do so little;
together we can do so
much.

Helen Keller



WHEN GROUPS FINISH AT DIFFERENT TIMES

- » Ask two groups that have finished early to compare their results with each other.
- » Have an extra extension activity that you can ask these groups to work on.

HOW TO GET STUDENTS' ATTENTION QUICKLY WHEN THEY ARE WORKING IN GROUPS

Use a pre-arranged signal to stop talking and listen to the teacher that all students recognise e.g. raising your hand, using a whistle, bell or a buzzer. If you raise your hand you will find that some students see it immediately and they will then tell others to stop the discussion.

I like CL because it opens your mind to many more possibilities, a lot more than you could think of on your own. It makes finding out answers or coming up with solutions a more thought provoking process.

Student comment

Working in teams is one of the cornerstones of modern workplaces where jobs are redesigned to make greater use of teamworking and job rotation rather than people having individualized and fragmented jobs.

Council of Trade Unions, 2009

» **Constructive controversy**

Teachers identify a controversial topic and either gather material themselves or require students to gather material that supports both sides.

Students work in teams of four with each pair within a team taking one side of the issue. The two pairs alternately present their side of the issue. At this stage the pair that is not presenting may not challenge or question the presenters.

In the third stage the pairs debate the issue and challenge the points made by the other pair.

The fourth stage sees students reversing their positions, with each pair arguing for the opposing viewpoint.

In the fifth and final stage the team works together to produce a final synthesised report on their conclusion or to prepare a presentation for the class.

This technique develops critical thinking skills by encouraging students to examine issues for which there are no “right” answers such as “should America have dropped the second atomic bomb?”

» **Discovery method**

Groups are given initial guidance and an adequate foundation for the topic by the teacher before they are given appropriate materials from which they “discover” quite complex principles. For example, communication students are given examples from a range of disciplines and asked to identify the characteristics of effective writing.

This method results in much higher retention of material by students.

» **Dyadic Essay Confrontation**

Before the class students are required to read and reflect on some assigned material, prepare an essay question on the material, and write a one page response to their question. During class students exchange their prepared essays in pairs, write a one page answer to the question they receive from their partner, read and comment on the answers and follow up with a general whole class discussion.

A benefit of this technique is that if students come to the class unprepared they can complete the assignment in class so others are not held up.

Essays are handed in at the end of class so those who did not do the work at home get only half the marks.

This technique ensures that students read and understand out of class material which then allows them to use classroom time for discussion.

» **Two minute paper**

Students work in pairs to jot down the answers to questions, such as: “what is the main point of today’s class material so far?”, “what is the muddiest point in what we have done so far?” and “what question do you still have about what we covered today?”. The teacher collects the papers and notes the key points to be discussed in class.

» **Draw a picture or diagram**

At the end of a segment of teacher directed instruction, students work in groups to create a graphic summary/diagram/mind map of how they would organise information or reach a conclusion, based on the material provided.

This technique reinforces key ideas and is helpful for visual and kinaesthetic learners.

Revise course content

» **Send-a-Problem**

Each student in a group makes up a question or review problem and writes it down. The author of each problem/question asks the question of his/her group members. If they don’t have consensus on the answer, the group works on the problem until everyone can agree. The group then passes their stack of questions to another group for review.

A fun variation on this is for each group to construct the single most challenging/ controversial question they can think of to pass on to the next group. All questions get passed from group to group till all groups have decided on their answers.

The teacher then leads an all class discussion to collate responses.

» **Inside-Outside Circles**

The teacher organises students into groups of six, with three students standing with their backs touching and facing out, and three students forming a circle around them, facing inward, toward the students in the centre. The teacher directs each pair to exchange information related to previously taught material. Then the teacher asks the students in the centre to rotate until they are facing a new partner, and chooses a different topic for discussion.

CL gives students who are otherwise “quiet” an opportunity to contribute in a safer/smaller less intimidating environment.

Teacher comment



Spencer Kagan,
on his CL
website (<http://www.kaganonline.com/online>) advises teachers new to CL to learn one simple strategy well before attempting a new strategy. He suggests beginning with highly structured cooperative tasks and moving slowly to unstructured longer tasks.

Give each group a card with ‘WORKING’ on one side and ‘FINISHED’ on the other. The group displays the ‘WORKING’ side until they have finished the task and then they display the ‘FINISHED’ side.

This gives the teacher the opportunity to challenge and extend a group which has finished early.



» **Group Test Taking for Practice**

Before a test, student groups are given copies of earlier versions of your test or questions similar to those that will actually be on the test. Group members work together to discuss and to answer the questions. A whole class discussion follows.

Encourage participation

» **Talking counters**

Each student in a group starts with three counters. Each counter is a ticket giving its holder permission to share information, contribute to the discussion or disagree with previous points made. Every time a group member speaks they place one of their counters in the centre of the table. When they have no more counters they can't speak again, except to ask questions, until everyone has used up their counters. After all the counters have been placed in the centre students retrieve their counters and another round begins.

This technique encourages equal participation from all members of a group and builds listening, oral communication and interpersonal skills. It also helps students appreciate the importance of equitable participation in a discussion.

» **Rounds**

Each member of the group takes a turn to express his/her ideas and opinion on a given topic.

This gets students into the habit of contributing and listening to others and overcomes the issue of members dominating the discussion. It is useful to start group discussions with a round as this establishes a participative culture in the group.

GROUP MANAGEMENT TECHNIQUES

Structure is essential to the cooperative learning environment. The more organization is built into classes, through focused structures and through classroom management techniques, the more meaningful active learning becomes. Where structure is lacking or is haphazard, which may have occurred too often in students' previous group work experiences, students wander off task.

Millis & Cottell, 1998, p.70

Group management techniques

There are many practical things that you need to plan for if you are using CL in your classroom. Something that might seem minor (e.g. having too many students in a group or not knowing what to do if students finish at different times) can sabotage your whole activity if you are not prepared for it.

Arranging the room appropriately

Students should sit as close together as possible to allow for face to face interaction.

In the photograph below you will see a group situation where the seating is arranged so that all group members can maintain eye contact easily. This is more likely to promote effective interaction.



When the seating for group work is not appropriately arranged it is easy for students to be excluded from the interaction. The following photographs show Joseph and Isaac wanting to participate but losing interest because they are not physically part of the group.



If students are put into discussion groups that are too large it is difficult to prevent side conversations and exclusion of group members. It is no surprise to see Mary more interested in interacting with her phone than with the group.



Make sure that the seating arrangement doesn't put anyone "on the outer". Students often have to have the importance of seating explained to them, perhaps by showing a video of a student being excluded by the seating arrangement or by pointing out an inappropriate arrangement in the class.



Deciding on the formation of the groups

- The best size for informal groups is three to five members as this allows for a range of opinions and makes it more likely that all members will be included in the discussion.
- Try to vary the composition of groups so that students are not always working with the same group members.

If groups reach a quick superficial consensus

- At the start of the activity give groups clear criteria and standards that you will be using to judge their answers.
- Emphasise that you want diverse answers and everyone's views.
- Question a group that has reached a quick decision; ask them to describe how they considered other options. Challenge them to go deeper.

If one student dominates the group

- Use Talking Counters, Rounds, or similar techniques until the group gets used to the idea of equal participation.
- Make sure all members of a group have a role. Give the more talkative members roles early in the activity that mean that they have to listen (*e.g.* recorder).
- Teach the collaborative skill of taking turns and encouraging everyone to participate.
- Structure the task so that members know that they have to listen to each other to complete the task.

If you see that students are giving each other the wrong information

- You will pick this up as you monitor the groups so you can intervene at that point.
- If you realise that most students have misunderstood a concept you will need to stop the group activity and do a short session of whole class teaching.
- Hold a whole class discussion (or activity such as a poster presentation) at the end of the task and clarify anything that might be incorrect.

If the class is large

- Don't think that you can't use CL in large classes!
- Use Think/Pair or Write/Pair activities where students don't need to move from their seats.
- Make sure that your group instructions are very clear and specific; give them orally and in writing. Write the instructions on the whiteboard or smartboard so that you are not running round constantly repeating them. Allow time for clarifying questions.
- Make sure that each group has a facilitator with responsibility for monitoring the group; you can then liaise with the facilitator.
- Explore the use of clickers: an interactive technology that allows students in a large class to respond to a multi-choice question, to view the collective results and to discuss their choice with neighbouring students. If your budget doesn't run to this you can use a similar technique with flashcards.

In the workplace graduates will be working in teams therefore anything we can do to train them in this has to be a bonus.

Teacher comment

- Have a clear signal, such as raising your arm, to attract the attention of the class. Make sure all students are familiar with the signal.

If groups drift off the task

- Where appropriate give groups a time for a task, such as “You have three minutes to ...”. Don’t give too much time for a task – keep the pace moving – and use a timer to make sure that you keep to time yourself.
- Ask the group for a brief update of their progress.
- Ask each group to assign a monitor whose job it is to keep the group on task.

Encouraging equal participation

- Ensure that your programme incorporates training in group communication skills so that students know what is expected of them. Openly discuss the problem of unequal participation in groups.
- Tell students that you will randomly select the reporters at the end of the activity (“All number ones...”). This is the Numbered Heads Together technique.
- Use Talking Counters (or similar) until group members are participating evenly.
- Use Think/Pair/Square type activities to accustom students to expressing their own views in a non-threatening environment.
- Give less talkative members a role that means that they have to speak (e.g. facilitator) early in the exercise.
- Ask groups to assign a monitor to encourage quiet members to participate. Introduce the monitor to strategies such as drawing out non-participants by asking them questions, or interrupting dominant speakers tactfully.
- Encourage groups to begin and end with a round where every member speaks.
- Suggest that groups give members a set amount of time to share their ideas with the group.

Elizabeth Cohen and Rachel Lotan (2014) recommend varying the way reporting back after group activities is handled in order to keep that part of the process interesting and engaging.

Today’s business organisations demand well rounded, multi skilled, flexible and adaptable graduates.

Hodges & Burchell, 2003, p.20



CHANGE THE COMPOSITION OF INFORMAL GROUPS REGULARLY AND ROTATE ROLES FOR THE STUDENTS.

Possible roles for informal group work are:

Facilitator who controls the discussion /keeps everyone on track

Secretary/Notetaker who records the group’s decisions

Reporter who reports back for the group

Monitor who keeps time/ ensures everyone is included

Encourager who supports and encourages team members to work together effectively.



Reporting back

Reporting back is important as it ensures closure for the activity. This involves students thinking back about what was learned as well as thinking forward to how the learning can be applied.

Reporting back can take the following forms:

- Groups reporting back on the outcomes of their discussions
- Whole class discussion
- Visual representations of the group discussion such as posters. The posters can be presented from the front of the class or, alternatively, one member of the group can stay with the poster to explain it and the class can walk around and look at the posters.
- It is important that the session ends with the teacher summarising what has been learned and how it relates to the overall objectives of the course. Students (particularly international students who are used to more traditional teaching and learning methods) then realise that CL is a serious pedagogical technique.

Useful resources

Jacobs, G.M., Power, M.A., & Inn, L.W. (2002). *The teacher's sourcebook for cooperative learning: Practical techniques, basic principles, and frequently asked questions*. Thousand Oaks, CA: Corwin Press.

Jacobs, G.M., Gan, S. L., & Ball, J. (1997). *Learning cooperative learning via cooperative learning: A sourcebook of lesson plans for teacher education*. San Clemente, CA : Kagan Cooperative Learning.

These two books provide a wealth of information on CL and a wide variety of group activities. The sections on Frequently Asked Questions about CL are particularly helpful.

Aronson, E. (2014). *The jigsaw classroom*. Retrieved from <http://www.jigsaw.org/>

This is a comprehensive site by the creator of the jigsaw technique with detailed information on its use and implementation.

If you have good group members, whether they are capable or less capable, we can pool all our strengths.

Student comment

4. Formal assessed CL – group projects lasting a number of weeks

Although there is a concern today that many graduates are not well prepared for today's workplace, appropriately managed and assessed long term student group projects can provide an effective means for students to develop the transferable "soft" skills and attributes required by industry.

Deciding on assessment methods

Appropriate group tasks

The most important thing to remember is that group tasks are very different from individual tasks. If you take an assignment which has been designed as an individual task one year and use it as a group task the following year don't be surprised if you have major problems!

Individual tasks have their place in tertiary teaching and learning of course, as an individual assessment task will ensure that students have mastered essential individual skills and abilities such as accounting methods, legal argument, writing and individual reflection. It is important that students master both individual and group skills before they enter the workplace. It must always be remembered, however, that assessment tasks to be completed by individuals are not interchangeable with tasks to be completed by groups. Getting the balance between individual and group assessment is important; as a general rule group assessment should not exceed 30% of the course mark. Your organisation may have a departmental policy on this.

How is a group task different from an individual task? An appropriate group assessment task is one that will encourage collaborative skills and reduce the likelihood of "free-riding". It is important that your students see the task as significant and relevant, one that captures their interest so that they are all motivated to complete it. The task needs to be complex and to require a range of higher cognitive skills and understanding, so that students can see that it is easier for a group to complete rather than an individual. Lotan (2003) uses the term groupworthy tasks for appropriate group tasks which are structured so that students **must** interact by sharing their experiences and justifying their opinions. Groupworthy tasks **must** require students to use the higher order skills of analysing, synthesising, hypothesising and evaluating. They should involve applying theory or using course concepts to solve a problem or make a choice.



WHAT DO YOU DO WHEN A GROUP ON THE VERGE OF FISTFIGHTING COMES INTO YOUR OFFICE?

Richard Felder and Rebecca Brent (2001) recommend active listening.

Have one side make its case, and then have someone on the other side repeat the case without trying to refute it.

Then the second side makes its case, and the first side has to repeat it without refuting it.

Finally, both sides try to work out an agreement that addresses everyone's issues and feelings.

In Felder and Brent's extensive experience, once each side can understand the other side's case, the group is well on its way to solving the conflict.



Groupworthy tasks are “fuzzy” to encourage extensive discussion on how to proceed, although the instructions and expected outcomes must be explicit. They are structured to encourage interdependence so that students can’t divide the work up and give the separate parts to group members: they must meet and interact regularly. You, as the task designer have to make it difficult or impossible for them to complete the task without interacting! Regular monitoring by the group and feedback from the teacher are built into an effective group assessment task; this way, you and the group can identify any issues that might arise.

» See the handy hints section on pages 21 and 23 for examples of groupworthy tasks across different teaching contexts.

Checklist for designing a group task



A complex task

Open-ended

Covers a range of higher cognitive skills

Easier for a group to complete than an individual

Requires students to interact

Gives explicit instructions on expected outcomes

Includes regular monitoring

The nature of the assignments largely determine the effectiveness of learning groups in any setting (p.12).

Team tasks need to point students consistently toward decisions, not simply rehashing information (p.7).

Davidson, Major & Michaelsen, 2014

Assessment options

There are a number of important decisions that you must make when you are designing your group assessment task.

Will you assess the product(s) or the process of group work or both?

Assessing the product (group outputs) only and giving the same mark to everyone in the group is the traditional way of assessing group work. When students are put into groups for assessment, however, they are generally expected to learn skills such as group management, task, time and conflict management as well as collaboration. If marks are not assigned to the process of group work students may not consider it to be as important as the product; what is assessed sends clear messages to the students about what is important and what they are expected to learn. If the process is not assessed pseudo groups can develop, where groups meet to divide up tasks and then work individually with little interaction.

If you are concerned with assessing the product(s) of group work only, you can do this in much the same way that you would assess an individual task. Devising valid measurements for assessing the process is more difficult but can be achieved through the use of meeting minutes, status reports and work logs, all of which reflect the management of the group processes, and through individual student reflective work such as journals and reflective accounts. The aspects of group process that will be assessed should be specific and transparent for students.

How will you address fairness and acknowledge individual effort?

A collective group mark may lead to a perception of unfair assessment for your students as it gives no opportunity to recognise individual levels of participation, contribution and achievement. It may also discourage effective collaboration as it places no assessed value on individual accountability or promotive interaction (remember the building blocks!), and may be seen by students as rewarding “free riding”. If you want to recognise individual effort and contribution, peer and self-assessment can be effective methods.

Peer assessment

In peer assessment, students assess the performance and contributions of the other group members against clearly defined and understood criteria. By learning to do this students not only generally feel more positive about their own and others’ marks, but they develop skills that will be of direct use to them in the workplace. Although students can sometimes be apprehensive about peer assessment, research suggests that they become more positive when they have input and control over the process themselves (Boud, 1991; Race, 2001). Encourage your students to participate in the development of the criteria by which to evaluate their group members.

WHAT DO GROUPWORTHY TASKS LOOK LIKE?

Individual task:

Write an essay discussing the positive and negative consequences of globalisation.

Groupworthy tasks:

Develop a group presentation reviewing globalisation from a range of perspectives. Critically assess arguments made about the causes and consequences of globalisation. Analyse its impact on different levels of society: individuals, industries, countries, and the world political economy.

Use your knowledge of the principles of nutrition to develop a menu for a vegetarian restaurant.

Analyse a set of data to develop an advertising strategy for an organisation.



It is useful to have your students complete peer assessments every two or three weeks throughout the project as this not only provides practice opportunities but also alerts you to any significant issues that might have arisen in the group. You can then address and solve these issues before they escalate. Only the final peer assessment, which covers the whole group experience, should be used for assessment purposes.

Teachers are often concerned that students are influenced by personal likes and dislikes of fellow group members and worry that this might distort results. Experience and research (Falchikov, 1995; Race, 2001) show, however, that when peer assessment is carried out using professional guidelines and appropriate documentation the results are as reliable and valid as traditional assessment methods. They will also stand up to the scrutiny of a moderator or an Appeals Board. The process, however, must be explained fully in course and assessment outlines, the documentation must be meticulous, and students must be given guided opportunities to practise using peer assessment during the course.

» See Appendix 3 for an example

Self-assessment

In self-assessment all students assess their own performance and contributions to the group work against specific guidelines. This allows students to develop self-analysis skills that are of direct use to them in the workplace and, as with peer assessment, is as reliable and valid as other methods if implemented using clear objective criteria, opportunities for practice, and comprehensive documentation.

Assessment methods

The assessment methods that you choose can also help to reward both group achievement and individual effort and contribution. The chart in Appendix 4 summarises the advantages and disadvantages of a variety of assessment methods appropriate for use with groups. You can choose one or any combination of these options depending on the task and on what you have decided to assess.

» See Appendix 4

Forming the groups

Deciding on group composition

- Teachers are often tempted to form groups by putting students of similar background and/or ability together, and students very often want this too. Research, however, overwhelmingly supports the conclusion that the most effective groups are formed with a range of skills, abilities, language levels, age, ethnic backgrounds and gender (Felder & Brent, 2001; Cohen & Lotan, 2014).
- Students in mixed groups are more likely to have their own assumptions and ideas challenged and will be exposed to varied approaches to problem solving. A diverse group usually leads to more complex thinking and a greater acceptance of others' perceptions. This in turn results in increased understanding of students with different ethnic backgrounds. Learning to work with people unlike themselves is an important workplace skill for students.

You want to pose questions for students that will stimulate them to discuss, to experiment, to use trial and error and to find solutions for themselves.

Cohen & Lotan, 2014, p.95

- In mixed ability groups effective learning is modeled for weaker students and stronger students benefit from teaching others. Research shows that students who explain work to other students achieve more themselves and are not held back in their own learning (Webb, 1989). This often needs to be made clear to your students.
- Try to avoid isolating minority students or creating groups composed of only minority students.

Who chooses the group members?

» Self-selection

- If students select their own group they will usually want to work with others from similar educational, economic or ethnic backgrounds but this undermines the creative problem solving promoted by diversity. Usually strong students want to work together and the weak students are then left to form groups but this doesn't benefit strong or weak students.
- Students often want to work with people they know already. This, however, may result in cliques developing within the main group and may inhibit the development of overall group cohesiveness.

» Random selection

- Students are grouped according to a criterion randomly determined by the teacher. This does not always ensure a good balance of group members but may be seen by students as a fair method of selection.

» Teacher selection

- If teachers select the groups based on their knowledge of the students and their abilities they can ensure that each group has sufficient resources and skills to complete the task.
- The groups may also be selected by asking students to fill in questionnaires about preferred working style, language ability, skills, study habits, times that they are available for meetings etc.
- This system is generally considered to be preferable because teachers can decide on the best combinations. Students who complain can be told that they won't be choosing their teammates in the workplace!

Elizabeth Cohen and Rachel Lotan (2014) make the valid point that if you allow friends to work together they will see it as play not work - it should be the other way around!

Davidson, Major & Michaelsen, 2014



ANOTHER GROUPWORTHY TASK:

Develop a group presentation that evaluates the total impact that manufacturing and installing wind generators and solar panel systems has on the environment, as compared to conventional energy sources (coal, gas and nuclear). You will need to develop a measure of the environmental cost per kilowatt-hour of energy produced.

THE GAMES TRAINERS PLAY series has many useful team building activities suitable for student groups.



What is the most effective group size?

» Under three members can lead to:

- Less diversity
- Less variety of ideas and skills
- The possibility of one dominant member

» Over five members can lead to:

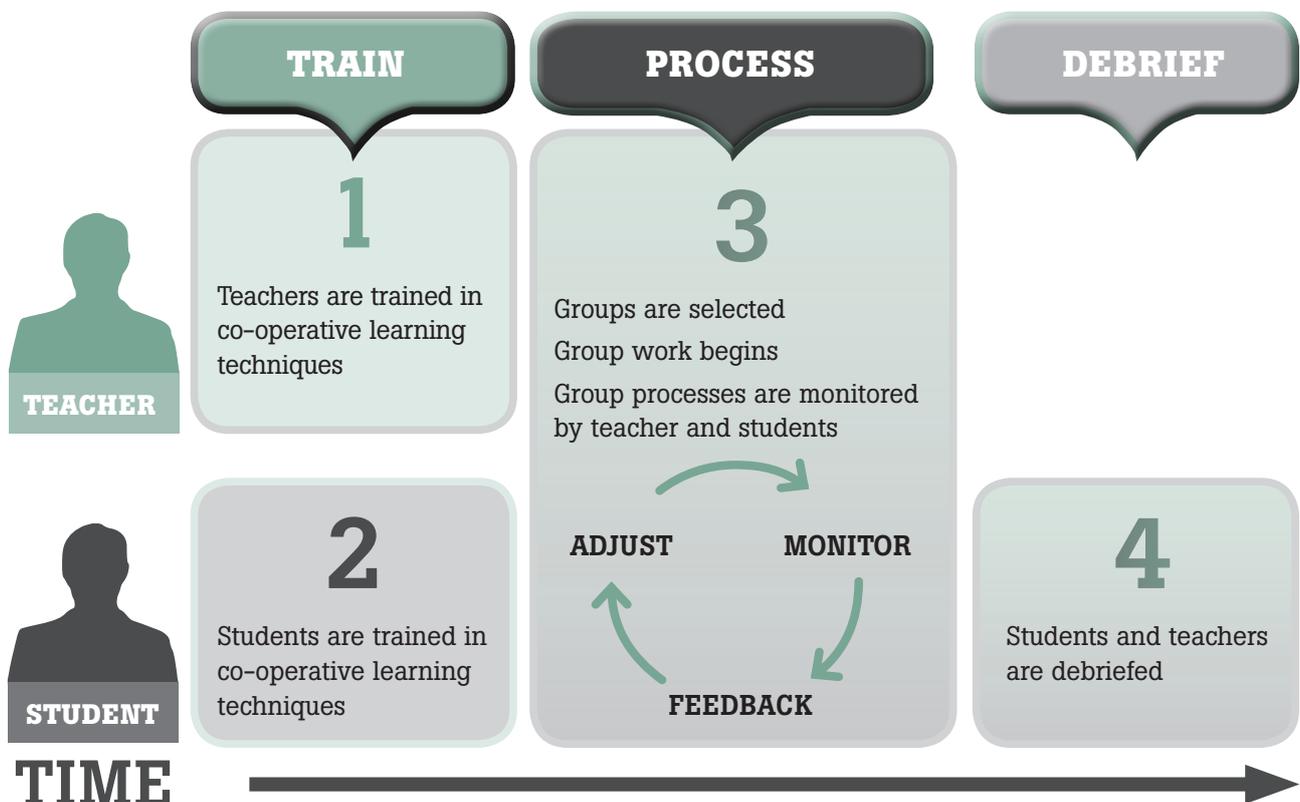
- Likelihood of “free-riders”
- The possibility that some members will be passive and will be left out of interactions.
- Difficulty for students in managing logistics

» General consensus:

- Three to five members is generally considered ideal as this number allows for a range of perspectives and skills and means that it is easier to ensure participation and contribution by all members. There is less chance of group fragmentation with this number and the group can still function smoothly even if members are occasionally absent. Management of meeting times and venues is easier than in larger groups.
- Odd numbers are preferable as this makes decision making easier.

Cooperative Learning Model

The model outlines the stages that you should follow to ensure student group work is effective.



A Co-operative Learning model for use with student groups (Baker & Clark, 2010, p. 266)

Managing the group work

Explaining CL to students

- Because CL is very different from traditional teaching, ensure that you give your students a clear written explanation about the nature and purpose of cooperative learning and why you are using it in your course. If you do not convince your students of the value of working in groups they will put up barriers to learning this way. It could be useful to have a standard approach used by all teachers in the faculty, explained and justified in the faculty handbook. Competitive courses need to address this directly and explain clearly how group work is not going to interfere with individual achievement.
- Discuss reasons for group work with the class at the beginning of the course. Explain how it fits in with course objectives/importance in the workplace/pedagogical rationale/how it fits in with other teaching methods/skills students will learn from working in groups. Promote a positive attitude to teamwork as a learning technique. Students need time to digest and to question a teaching and learning method that might be new to them.
- Develop a shared understanding of effective group work with the class.
- Discuss your students' previous group experiences with the class including potential problems at both individual level and group level. Introduce the article *Coping with hitchhikers and couch potatoes on teams* (Oakley *et al.*, 2003), which outlines issues and offers strategies to deal with problem group members.
- Discuss cultural differences and stereotypes with an emphasis on integration (not an assumption that minority students must do all the changing). Encourage a culture of valuing diversity.
- Talk about cultural attitudes with the class (*e.g.* participation, silences, stating opinions, respect for authority and received knowledge, critical thinking).
- Explain group dynamics and group processes.
- Provide clear written instructions which make the group process and expected outcomes explicit. Address student concerns about fairness of marking and consider involving students in the development of a marking system.

If teachers want more productive and higher level discourse the students will need to learn significant skills for discussion and for working with each other. These are not automatic consequences of cooperative learning.

Cohen & Lotan, 2014, p.42



Taking time to decide what you want to assess and how you are going to assess it will make group work easier for both you and your students. What you assign marks to sends a clear message to students about what you expect them to learn from group work.

Should problems arise in the groups, run whole-class ten minute "crisis clinics" to discuss possible solutions.

Direct quotations from discipline specific sources and from job advertisements, or perhaps a guest speaker from industry, can promote a positive attitude towards group work.



Training the students for CL

- Carry out preparatory group (“pre-teamwork”) exercises in groups *e.g.* pair work, jigsaw exercises.
- Provide practice in interpersonal skills (*e.g.* conflict solving, giving feedback). Some teachers prefer to give a bit of guidance initially and then deal with the problems in detail once they start to appear.
- Provide practice in intrapersonal skills (especially reflection).
- Have groups participate in team building and “getting to know you” activities within their groups. Encourage commitment to the group. Help students to become familiar with each other’s skills, learning styles, knowledge and capabilities. A group name often helps develop cohesiveness.
- Require groups to develop written group objectives and ground rules by creating and signing a group contract (see Appendix 1 for an example) and appointing a coordinator to act as guardian of the processes. Groups should formulate a common set of expectations for group functioning (*e.g.* the leadership system they want, expectations for participation, procedures for dealing with “free riders”, specific conflict solving procedures, formal mechanisms for critique and evaluation such as devil’s advocate). This unifies the group and also means that the group can refer back to it if there are problems. Assure groups that they will be supported in carrying out these processes.
- Have groups set up a regular written schedule for meetings and group tasks. Emphasise the importance of effective time management. Groups should decide on an appropriate meeting place. Explain agenda and action minutes and issue templates to the groups. Provide guidance on running effective meetings.
- Encourage groups to allocate roles for formal group work such as:
 - › leader (responsible for keeping group discussions on track, making sure that everyone participates in discussions, keeping the group on task, ensuring that everyone does their allocated work)
 - › group recorder (responsible for keeping track of the group’s documents, keeping records such as attendance, minutes of meetings)
 - › timekeeper (responsible for keeping the group aware of time constraints in meetings and for deadlines).
- Roles may be rotated to discourage domination by one person.
- For a major project, have groups take part in a practice exercise to receive formative feedback on their group and individual performance and to identify any issues with group dynamics before undertaking the assessed project.

By assigning open ended tasks teachers delegate intellectual responsibility to their students and this makes their students’ life experiences, opinions and points of view legitimate components of the content to be learned.

Cohen & Lotan, 2014, p.86

» See Appendix 1

Working with diverse groups

Diverse groups may vary in terms of age, gender, skills, abilities, experience, language levels and ethnic backgrounds. New Zealand tertiary classrooms reflect this diversity, particularly in terms of language levels and ethnic backgrounds.

The learning preferences of Māori and Pacific Island students reflect the cultural values of cooperation and peer support which are integral to effective CL. International students, however, may have had little or no experience of working in formal groups in an educational setting.

It is important to:

- Construct tasks that require a variety of skills and abilities, and where diversity would be an advantage to the group.
- Encourage students to develop their own inclusive group culture that respects and values their individual cultures.
- Discuss cultural differences with groups and discuss misunderstandings which might arise as a result of cultural and linguistic differences.
- Expect diverse groups to take longer to perform than homogeneous groups.
- Assign roles in the group and make sure that they are rotated.
- Encourage groups to develop group contracts as effective group functioning is crucial in diverse groups.
- Ensure that assessment expectations are clearly outlined in writing.
- Build in regular group processing by the group and with the teacher. Diverse groups require even more group processing than homogeneous groups (and they need lots!).
- Emphasise to groups that the more interdependent the world becomes, the more important it is to be able to work effectively with diverse co-workers. Point out (frequently!) that employers these days are looking for cross cultural communication competence.

Monitoring the groups

The role of the teacher

- To timetable regular group processing sessions (with specific tasks) with the teacher. For major projects discuss documents such as status reports and work logs at each session. Give constructive immediate feedback to the group throughout its life.
- To provide regular tutorial time to discuss problems and to give students time to work on their group projects. This signals the teacher's interest in the process and reduces the likelihood of students meeting just long enough to divide up the work.
- To work with groups to encourage nonparticipating members to contribute and to understand the importance of their involvement. The discussion should revolve around why the student is not participating and what is best for the group. Where the situation can't be resolved through discussion it is the teacher's responsibility to take action.
- To avoid giving too much guidance and intervene only when absolutely necessary. Students should be asking each other for guidance. It is also a crucial element of intrinsic motivation that we need to take ownership of what we are doing; if students rely too much on the teacher that element is missing.

Communication was the key to the success of our group. We were from socially diverse backgrounds and yet we got along really well... we were like the United Nations, however if the United Nations had our team work the world would be a better place.

Student comment



A useful classroom rule is that, before asking the teacher for help, students must consult three other sources. Spencer Kagan calls this guideline "Three before me". Alternatively, accept questions from the group only; individuals must ask all other members of their group first.



- To remember that traditional direct instruction has its place in CL; you are not giving total responsibility to the group. “*Successful [cooperative learning] models always include plain old good instruction; the cooperative learning activities supplement, but do not replace, direct instruction*” (Slavin, 1990, p. 22).

The role of the group

- To have regular team meetings which include evaluation of processes, performance and progress.
- » **See Appendix 2 for a sample Group Processing Form**
- To produce group management documentation such as progress reports, work logs, meeting minutes for each meeting for major projects.
- To ensure that all group members contribute.
- To ensure that group resources are always used before asking the teacher for help.

» **See Appendix 2**

Debriefing the groups

- Give students an opportunity to reflect on and/or discuss their group experience (e.g. reflective account, class discussion).
- Ask students to give feedback on teacher management of the group project.
- Reflect on the effectiveness of the group work from your perspective as the teacher.

Useful resources

Millis, B. (Ed). (2010). *Cooperative learning in higher education: Across the disciplines, across the academy (New pedagogies and practices for teaching in higher education)*. Sterling, VA: Stylus Publishing.

This book consists of a series of chapters about the use of CL written by subject specialists and would be useful for teachers wanting to implement CL in disciplines such as Accounting, Engineering, Economics and Chemistry.

Millis, B. J., & Cottell, P.G. Jnr. (1997). *Cooperative learning for higher education faculty*. Phoenix, AZ: Oryx Press.

This is a comprehensive manual on implementing CL for tertiary classes.

Oakley, B., Felder, R.M., Brent, R., & Elhadj, I. (2004). Turning student groups into effective teams. *Journal of Student Centered Learning*, 2(1), 9-34.

This article is an excellent practical guide to the effective design and management of group assignments at tertiary level. Topics discussed include forming teams, helping them become effective, and using peer and self-assessment. It provides techniques for managing issues in student groups including “Coping With Hitchhikers and Couch Potatoes on Teams” and offers a range of templates for group management including a group contract, peer and self-assessment forms.

Conclusion

Cooperative Learning is a proven technique for engaging students, promoting deep learning and developing the soft skills that are demanded by twenty-first century employers. To be successful, however, teachers must plan carefully, construct tasks effectively and actively monitor the process.

This guide provides practical advice on the successful implementation of CL in the New Zealand tertiary classroom. We hope it will be used not only by individual teachers but also by tertiary institutions wishing to promote and support the use of CL as a teaching and learning tool. It will be of value to those wanting to develop organisational policies to ensure it is set up and used effectively across the curriculum and not just within an individual course.

If CL is implemented successfully it will improve student engagement in the classroom and provide students with sustainable, transferable skills that prepare them well for transition into the workplace and life beyond study. For institutions this represents a significant return on investment.

Further assistance

We have set up a CL community on the Ako Aotearoa website at: www.akoatearoa.ac.nz/cooperative-learning-made-easy where we will regularly post updates, ideas and information on CL to share with practitioners. We welcome your comments, questions and feedback on this publication, and invite you to share your experiences through this community. We look forward to hearing from you!



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Appendix 1 – Group contract

- **Choose a group leader and decide what the leader's responsibilities will be.** Allocate other group roles.
- **Have a group discussion** about positive and negative previous experiences of group work. What are your group members' attitudes towards working in groups?
- **Decide on a group goal.**
- **Set meeting times that suit all group members.** You should have face-to-face meetings as well as computer mediated meetings (Moodle, Internet etc).
- **Discuss how the group will operate.** How will you allocate tasks within the group and what will you do if the tasks are not completed or deadlines are missed? What will happen if team members have different work habits or different opinions on the quality of the work produced? How will the group deal with poor participation or attendance by a group member? How will you ensure that one member doesn't dominate the group process and what will you do if it happens? What will you do if you feel you are doing more than your fair share of the work? How will the group make decisions?
- **Discuss how you will maintain relationships in the group and what you will do if there is conflict.**
- **Write a policy for dealing with non-cooperative group members and have it approved by your teacher.**

List the rules and expectations you agree as a group to adopt. You can include any or all of the points above. Each group member should sign indicating acceptance of the contract.

Based on a document by Felder, R.M., & Brent, R. (2000). *Effective teaching*. North Carolina State University.

Appendix 2 – Group processing form

Group:

Date:

Discuss how your group performed at this meeting and answer the following questions.

1. We started on time, we kept to time during the meeting, and we finished on time. YES/NO
2. We encouraged one another and cooperated with one another. YES/NO
3. We all participated in the discussion. YES/NO
4. We listened to one another's ideas and responded appropriately. YES/NO
5. We made sure that the work is being shared. YES/NO
6. We developed a clear action plan at the end of the meeting. YES/NO
7. At this meeting we did particularly well at:

.....
.....
.....

8. Next time we could improve at:

.....
.....
.....

Appendix 3 – Peer assessment form

Student being assessed: Student name:

Assessed by: Student name:

| Rating | Meaning | Explanation |
|--------|--------------------|---|
| 20 | Outstanding | Far exceeded expectations, contribution was exceptional |
| 17.5 | Excellent | Performance beyond expectations, extremely good |
| 15 | Good | Did everything that was expected |
| 10 | Satisfactory | Generally complied, with some minor lapses |
| 7.5 | Below Expectations | Met the criteria some of the time but effort was not consistent |
| 5 | Very Poor | Unsatisfactory, did not meet the criteria. |
| 0 | Nil | No contribution in this area |

| Area of Performance | Rating (from above) | Justification for Rating |
|---|------------------------|--------------------------|
| Participation Attends meetings on time and contributes positively to the discussions. Takes part in group activities. | | |
| Commitment Willingly gives time and effort to make the work a success. Performs team roles effectively. | | |
| Communication Communicates ideas effectively. Listens to others and responds appropriately. Makes constructive comments. Maintains regular communication with group members. | | |
| Performance Completes all agreed tasks on time to the required standard. Helps others when appropriate. | | |
| General Comments | | |

Appendix 4 – Group assessment methods

Assessment methods for group work

| ASSESSMENT OPTION | DESCRIPTION | ADVANTAGES | DISADVANTAGES | SCOPE |
|--|--|---|--|---------------------|
| 1. Assessment of product only | The same mark for everyone in the group. | <ul style="list-style-type: none"> • Encourages collaboration and positive interdependence as groups sink or swim together. • Straightforward method, easily understood. • Cuts down marking. | <ul style="list-style-type: none"> • Individual contributions are not reflected in the marks. • No recognition of individual excellence or poor individual performance. • Stronger students may be unfairly disadvantaged by weaker students. • May not motivate all students; can encourage social loafing. • Method most often perceived as unfair by students and lecturers. | Product |
| 2. Assessment of product with lecturer adjustment | <p>Assessment of product. The same mark for everyone in the group. Direct evaluation by lecturer to modify the group mark for individual group members.</p> <ul style="list-style-type: none"> • oral interviews • meeting minutes • observation • group reports | <ul style="list-style-type: none"> • Oral interviews and observation can be an effective way of getting information on individual participation. • Enables the lecturer to give each student specific feedback. • Encourages students to reflect on their own performance. | <ul style="list-style-type: none"> • Very time consuming. • Class size might make it infeasible. • Information obtained may be subjective or inaccurate. • Reliability and validity cannot be guaranteed. • May be perceived as biased by students (and appeals committees). | Product and process |
| 3. Group average mark | Individual submissions (allocated tasks or individual reports) are marked individually. The group members each receive the average of the individual marks. | <ul style="list-style-type: none"> • May provide motivation for students to focus on both individual and group work. | <ul style="list-style-type: none"> • May be perceived as unfair by students. • Stronger students may be unfairly disadvantaged by weaker students. | Product |

| ASSESSMENT OPTION | DESCRIPTION | ADVANTAGES | DISADVANTAGES | SCOPE |
|---|---|--|--|---------|
| 4. Individual marks for allocated project tasks | Project tasks are divided up and allocated to individuals; the parts are marked separately. | <ul style="list-style-type: none"> • Ensures individual motivation and participation. • Rewards good performance and penalises poor performance. • May be perceived as fairer than a shared mark. | <ul style="list-style-type: none"> • Difficult to find tasks that are exactly equal in size/complexity. • Does not encourage the group process or collaboration. • Dependencies between tasks may slow progress of some students. | Product |
| 5. Individual marks for individual reports | Each student writes and submits an individual report based on the group's work. | <ul style="list-style-type: none"> • Ensures individual effort. • Perceived as fair by students. | <ul style="list-style-type: none"> • Precise manner in which individual reports should differ often very unclear to students. • Likelihood of plagiarism increased. | Product |
| 6. Individual marks based on a subsequent examination/test | Individual marks based on an examination/ test held after group project is finished. The mark is added to the group mark. | <ul style="list-style-type: none"> • May increase motivation to learn from the group project and to learn from other members of the group. • May encourage the group process and collaboration. • May be perceived as fairer than a shared mark. • Identifies slackers. • Allows deserving students the opportunity to shine. | <ul style="list-style-type: none"> • May diminish the importance of group work. • Gives additional work to lecturers. • May unduly reward students who are good at written examinations and tests but may have underperformed in their group. | Product |

| ASSESSMENT OPTION | DESCRIPTION | ADVANTAGES | DISADVANTAGES | SCOPE |
|---|--|--|---|----------------------------|
| <p>7. Group mark for product differentiated by group peer assessment</p> | <p>One mark for the group outputs. Subsequent adjustment to acknowledge individual contribution based on peer assessment:</p> <ul style="list-style-type: none"> Students redistribute a pool of marks; the group has to explain its decisions. Team members score their relative contribution out of 100. If all worked equally hard they are all allocated 100% of the mark for the assessment. If one team member contributes only half as much, that team member is given 50% of the marks. | <ul style="list-style-type: none"> Shares the assessment responsibility; group members are usually in a better position to judge relative contribution to the group. Easy to implement. May motivate students to contribute more. Transferable negotiation and appraisal skills are developed. Has the potential to reward good performance and penalise poor performance. May be perceived as fairer than a shared mark. Helps reduce social loafing. Puts value on individual contributions. Gives ownership of decisions to the group. | <ul style="list-style-type: none"> Subjective evaluation may occur. May lead to conflict that students are unable to manage. Students may not have the required negotiation and conflict solving skills. Can be intimidating to some students. Requires training and practice for students. Can result in everyone just agreeing to have the same mark to avoid unpleasantness. Must be monitored carefully by the lecturer. May allow the group to discriminate against individuals. Resistance by some students. Public peer assessment has been shown to be less effective than anonymous peer assessment. | <p>Product and process</p> |

| ASSESSMENT OPTION | DESCRIPTION | ADVANTAGES | DISADVANTAGES | SCOPE |
|---|--|---|--|---------------------|
| 8. Group mark for product differentiated by individual peer assessments | <p>One mark for the group outputs. Subsequent adjustment to acknowledge individual contribution based on peer assessment:</p> <ul style="list-style-type: none"> A peer assessment form is filled in by all students and the lecturer adjusts the marks accordingly. Can be done anonymously. | <ul style="list-style-type: none"> Encourages a sense of involvement, responsibility and accountability. Helps students develop appraisal skills. Group members are usually in a good position to judge relative contribution to the group. Has the potential to reward good performance and penalise poor performance. Easy to implement. Can motivate students to contribute more. May be perceived as fairer than a shared mark. Reduces social loafing. Puts value on individual contributions. Gives ownership of decisions to individuals in the group. | <ul style="list-style-type: none"> Students need training and practice to carry out the process effectively. Lecturer moderation is time consuming. Open to subjective evaluations; can be perceived as unfair and based on students' popularity or unpopularity. Some students are reluctant to mark down peers. Group members may agree on an equal mark to avoid conflict. Can be seen as inhibiting cooperation. Has to be monitored carefully. Some students don't want this responsibility. May be difficult to translate into marks. | Product and process |
| 9. Group mark for product plus individual contribution mark allocated by group | <p>Contribution marks are added to the final product mark.</p> <p>A mark is given by the lecturer for the product and group members are asked to peer assess an additional mark for contribution for each group member.</p> | <ul style="list-style-type: none"> May be perceived as fair. Gives the message that process is important. Doesn't put complete responsibility on the group members. Final mark can weight group performance more heavily to encourage collective effort. Helps students develop appraisal skills. | <ul style="list-style-type: none"> Students need training and practice to carry out the process effectively. Some students are reluctant to mark down peers. Group may agree on the same mark for all to avoid conflict. Some students don't want this responsibility. Some students perceive peer assessment as being too subjective. (This concern is not backed up by research.) | Product and process |

| ASSESSMENT OPTION | DESCRIPTION | ADVANTAGES | DISADVANTAGES | SCOPE |
|--|---|--|---|---------------------|
| 10. Group mark for product plus self assessment | Self-assessment: One mark for the group outputs. Students assess their own contribution to the work of the group and the lecturer adjusts the marks accordingly. Usually carried out in conjunction with peer assessment. | <ul style="list-style-type: none"> • Encourages personal responsibility and self appraisal. • May develop self-awareness. • May develop better understanding of learning outcomes. | <ul style="list-style-type: none"> • Students need training and practice to carry out the process effectively. • Students can tend to make judgements based on what they meant to do rather than what they actually achieved. • It may be difficult to define common standards for students to use for evaluation. • Some lecturers and students believe it is not reliable or valid (though research does not back this up.) | Product and process |
| 11. Addition of assessed reflective work | Reflective work to identify individual learning outcomes: The addition of assessed reflective work (such as essays, journals, diaries, portfolios) to other assessment methods. | <ul style="list-style-type: none"> • Encourages individual appraisal of personal development of required knowledge and skills. • Recognition of transferable skills. • Encourages personal responsibility. • May develop self-awareness. • May develop better understanding of learning outcomes. | <ul style="list-style-type: none"> • Students need training and practice to carry out the process. • Assessing and grading portfolios can be very time consuming. | Process |

Adapted from:

Carnegie Mellon. (n.d.). *Grading methods for group work*. Retrieved from <http://www.cmu.edu/teaching/assessment/howto/assesslearning/groupWorkGradingMethods.html>

Winchester-Seeto, T. (April, 2002). *Assessment of collaborative work - collaboration versus assessment*. Invited paper presented at the Annual Uniserve Science Symposium, The University of Sydney, 5th April.



About the authors

Jill Clark and Trish Baker, Research Associates at the Wellington Institute of Technology, began researching cooperative learning (CL) from a New Zealand perspective in 2005, basing their research on their extensive experience with student groups in the tertiary environment. Their involvement with the International Association for the Study of Cooperation in Education (IASCE) has led to them presenting and publishing their work internationally and collaborating with established CL researchers and practitioners worldwide. Jill is currently on the Executive Board of the IASCE.

Jill and Trish have a particular interest in the implications of CL for staff development. They have facilitated national and international workshops on the effective implementation of group learning and in 2010 were commissioned by Ako Aotearoa to design a teacher training programme in CL which is available at www.ako.aotearoa.ac.nz.



CL Guide authors – Trish Baker (left) and Jill Clark.



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