Overview

When planned and managed well, group work is an important factor in student success in university studies. This is especially so for first year students; group work provides a structure within which they can get to know one another and thus reduce their sense of isolation.

Many academics hesitate to use group and team based learning in their courses, because of issues around validity and reliability in assessment. Group work with a valid purpose, when thoughtfully managed with explicit rubrics and marking guidelines, can provide many benefits to students.

Using self and peer review for assessment, you can address many of the issues around fairness and reliability. These forms of assessment encourages collaboration and cooperation amongst students as they work together for a common purpose.

Group and team based learning can be essential or highly valuable for developing certain graduate attributes.

When to use

When deciding whether to assess using group work tasks, ask yourself the following questions:

- Is the potential value of group work related to the unit's learning outcomes? For example, is effective social interaction a key element of learning in the unit design and a key outcome of learning in the unit assessment?

- Is the assessment task bigger or more complex than individual students can manage? Think about the extent of research required, and the requirements for applying higher order thinking to complex problem solving.

- Does the assessment task lend itself to collaboration? Is there potential for effective sharing of labour?

If the answer to these three questions is yes, group work may be the appropriate form for assessment to take.

Benefits

When used for assessment, group work benefits students and teachers by:

- developing students' graduate attributes and allowing you to assess their generic skills such as the following
(identified in the CSHE assessment resources, 2002):
  o teamwork skills (working within team dynamics, leadership)
  o analytical and cognitive skills (analysing task requirements, questioning, critically interpreting material, evaluating the work of others)
  o collaborative skills (conflict management and resolution, accepting intellectual criticism, flexibility, negotiation and compromise)
  o organisational and time management skills.

- making assessment more authentic. Where group and team work is common practice in work and professional settings, the inclusion of group work tasks in some courses is a necessary part of assessing students' readiness for work.

- making assessment more inclusive. By intentionally framing students' small group work tasks to draw from their diverse backgrounds and perspectives when exploring a topic, you give them a chance to go into greater depth and breadth with their collaborative product.

- supporting multi-disciplinary learning. Students can work in multidisciplinary teams as learning communities, exploring specific themes or issues from the perspective of several disciplines.
  
  For example, students majoring in politics, history, sociology, biology and engineering could come together in multi-disciplinary teams on a task to evaluate or plan a community facility that might have a social and environmental impact.

- making assessment more accountable. Group assessment is more public and accountable for its intentions, execution and judgments than individual assessment.
  
  Instead of only the student and the assessor seeing the efforts and achievements of learning, group work tasks put learning and assessment into a more public domain.

- making assessment more efficient. Group assessment outputs can reduce the assessment workload (interpreting and grading) for staff. But keep in mind that the management and guidance of group work may take more work than marking individual projects or papers.

Challenges

- Students are interested, motivated and committed to undertaking group work to very different degrees. Some are hostile to the concept and see it as a technique for reducing the teacher’s workload rather than a reflection of authentic workplace practices. Unless you present a clear educational rationale for using group work for assessment, students may be unconvinced of its value and therefore resistant to its use.

- Teachers must spend considerable time setting up group work and preparing students for it. Students must also invest time undertaking it, particularly if it is inadequately planned. The over-use of group work in multiple units can eat up a lot of students' scarce time.

- Social and personality differences, or organisational difficulties, can break up groups and teams, thus
disadvantaging them in assessment.

- "Group think"—that is, when the preservation of the group becomes more important than the task at hand or the ideas being generated—can prevent the desired learning. Students, especially new students, may feel reluctant to dissent or challenge the majority view, so that creativity and divergent thinking are constrained.

- Assessment criteria may inappropriately favour group work processes over group work outcomes, or vice versa.

- It can be difficult to grade individual input. Lack of clarity about individual versus group marks can inhibit collaboration and cooperation; students may fear that they are in competition with each other for a share of the group mark.

- International students may find particular difficulties with group work. These are dealt with in the Strategies section of this page, under "Acknowledging and drawing on diversity in group assessment".

Strategies

Designing assessment by group work tasks

James, McInnis and Devlin, in Assessing Learning in Australian Universities (2002) assert that "the design and assessment is central to the educational effectiveness of groupwork" (p.5). Students benefit from clear guidelines for assessment, and in particular they want to know whether they will be assessed as individuals or groups.

Starting out with group assessment can seem overwhelming, particularly for new academics. James, McInnis and Devlin have some simple, yet effective, suggestions:

- Start somewhere
- Start small
- Start where success is most likely

When starting out with group assessment, they suggest aiming for quality rather than quantity—"starting with a group work component that is a relatively minor proportion of the assessment for a subject means that any issues related to equity of contribution, fairness of grading and student experience of the group assessment that might arise can be resolved relatively easily." This page outlines some common, effective approaches to assessment.

You might like to consider the following questions in your planning:

- Will you be assessing the processes or the product(s) of group work, or both (and what weighting will you give to each)?
- What criteria will you use to assess the processes and products of group work?
- Will you be allocating marks to individuals, groups, or both?
- Will you incorporate peer or self-assessment?

Product and/or processes?
Most commonly, both the product of group work and the processes involved in generating the product are assessed. Assessing the processes encourages students to pay attention to the way their group works—its approach to tasks, methods for resolving issues and improving efficiency. Assessing process is more effective in helping students develop a range of skills that they can apply in different group contexts.

The weightings you give the product(s) and processes will depend on the learning outcomes you have set for your course and the nature of the group task or project. You might decide that product and process are equally important, or that you only want to focus on one or two aspects of process and put most of the emphasis on the final product—say, a group report or presentation. Or the learning outcomes for your course might mean that you give a heavier weighting to group process.

Assessment criteria

Groups are most successful when students are given some input into assessment criteria. You might choose to develop a list of criteria and ask students to add to the list, or you might develop the criteria with students through open discussion. Always use learning outcomes as the starting points for developing assessment criteria. For example, if one of your learning outcomes is that students will be able to conduct effective group meetings, the assessment criteria might include, for example, the development of clear meeting agendas and regular attendance at meetings. You might find it easier to develop assessment criteria for the process and product of group work separately.

Criteria for process might include things like:

- adoption of group roles and responsibilities
- development of negotiation and leadership skills
- demonstration of creative problem solving
- responsiveness to feedback from group members
- evidence of conflict management and resolution
- evidence of reflective listening
- appropriate organisation and time management
- evidence of contributing equally.

The assessment criteria for the products of group work will also depend on the learning outcomes for your course and the nature of the group task (written report, oral presentation, poster presentation, exhibition, portfolio, design, performance).

Planning

Careful planning is important. Complete the following preparations:

1.
Prepare a detailed brief about the group work assessment task(s), setting out:
  ○ the objectives and intended learning outcomes
  ○ the requirements of the task
  ○ the assessment criteria and rubric for marking. This should clarify the proportionate weightings for group processes and outputs, and explain how both group achievements and individual contributions will be assessed.
  ○ how learning activities are designed to provide practice and formative feedback before the summative assessment takes place
  ○ how groups are expected to manage themselves, and identify and resolve issues.

2. Vary the products for assessment from group work. For example, you can ask for groups to produce class oral presentations, poster presentations, group or individual project reports, individual self-assessments by students of their own contributions to group processes.
  ○ Is it better to allow students to establish their own group membership, or should you allocate students to groups according to particular criteria? For example, you might want to ensure an appropriate mix of disciplines, cultural backgrounds or ages. Decide this beforehand.
  ○ Specify the size of groups.
    - Groups of five members have been shown to be generally most effective, as they enable diversity of membership as well as manageable organisation and interaction.
    - Larger groups make it very difficult to coordinate and organise the work, and some members may fade into the background.
    - Groups of fewer than four members may become unviable through lack of different viewpoints, or excessive workload.
  ○ Plan for stimulating interaction within groups. For example, you might contrive their membership to include a mixture of genders, ages, cultures, work backgrounds and so on, and require the group's diverse assets to be featured in their outputs.
  ○ Define the roles to be included in the group's functioning, for example:
    - note taker, recorder, secretary
    - leader, spokesperson, co-ordinator
    - observer (to ensure that all people have a voice and make a contribution)
    - editor (responsible for coherence of the final product).
  ○ Have a contingency plan in place for dealing with problems that the groups themselves are unable to resolve, or assessing students who are not able to participate in specific group work tasks, for example, for religious or cultural reasons, or because of a disability.

Implementation

Not all students have prior experience with group work in an educational setting, so it is important to scaffold for
them the skills and capabilities required for this form of learning. This handout on group work for students may be useful if this is the first time you have used group work in your course.

Spend time up front:

- clarifying why you are using group work
- addressing any student concerns or misapprehensions and
- supporting the setting up of groups.

The following strategies can help:

- Help students to develop skills in group work by setting up appropriate activities in class time. For example, engage them in learning to manage group discussion, generate ideas, encourage open discussion and debate, record group ideas and respond constructively and critically to other people's ideas.

- In class time, allow groups to form and engage with group work tasks. For example, have them:
  - consider how groups should be formed, and what individuals' roles should be
  - organise and manage their project
  - discuss and develop assessment criteria and rubrics
  - reflect on their group's experience and
  - assess their own, their group's, and other groups' effectiveness.

- You can provide templates for processes such as these. The completed templates can be an assessable part of the group work outputs.

- Provide a forum for discussion, debate and information sharing within and between groups.

- Structure the group work so that students must submit several items at milestone points, and require students to identify each student's contribution so that problems can be addressed in a timely way.

- Make public to the group all formative and summative feedback about group processes and products.

- Design the unit so that there is an opportunity for groups to share the final products of the group work with the entire class and invite questions and critique.

Interpreting and grading group work

Group work assessment criteria must make clear to students how marks are balanced:

- between the individual student's effort and the group's effort, and
- between the process of group work and the product.

Group work attributes and behaviours that can be assessed include:

- ability to arrive at consensus
- ability to manage and resolve difficulties
- effectiveness in project management (e.g. timelines and milestones)
- effectiveness in giving and accepting support and advice
- commitment to group processes (e.g. participating, taking responsibility)
- extent of contribution (e.g. gathering and researching information, preparing written reflections)
- quality of contribution (e.g. applying higher order critical evaluation and problem solving skills).

You can apportion marks for group work in many different ways. For example:

- Everyone in the group gets the same mark.
- The group apportions the total assigned mark to group members according to their estimation of each person's contribution.
- The tutor gives the mark for the group effort (for example, eight marks out of 10), then the group allocates a proportion of that mark to each member according to their contribution.
- The tutor conducts individual vivas (viva voce examinations) following the completion of group work, marks from which are used to apportion individual grades.
- Groups identify "social loafers", whose mark for group work contribution can be reduced by 10%, or they can redeem their grade by restoring their contribution level.
- You can also incorporate peer assessment and self-assessment in the marking.

The table below outlines some basic options for distributing the grades between process and product, and between individual and group marks (CTL, University of Newcastle, 2007, 7). More detailed options based on Winchester-Seeto (2002), can be found in the online resource collection at CSHE (2002).

### Options for distributing grades in group work tasks

<table>
<thead>
<tr>
<th>Type of mark</th>
<th>This mark is based on...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing the product(s) of group work</td>
<td></td>
</tr>
<tr>
<td>Shared group mark</td>
<td><strong>...the group product.</strong> The group submits or presents one product (project report, poster presentation, oral presentation etc.) and all group members receive the same mark, regardless of their individual contribution. While this option can encourage collaboration, individual contributions are not necessarily reflected in the marks.</td>
</tr>
<tr>
<td>Group average mark</td>
<td><strong>...an average of marks for individual products by each member of the group.</strong> Students are marked on their individual submissions (e.g. their section of a group report or presentation) and the group receives an average of all individual marks. This option can also promote collaboration, but can also be perceived as disadvantaging stronger students.</td>
</tr>
</tbody>
</table>
Individual mark

...an individual product/report/examination. Students receive an individual mark for a particular task that contributes to the final group project. Alternatively, students complete an individual report based on the group project. These options can motivate and reward individual students and be perceived as fair by students. On the other hand, it does not encourage collaboration, and finding tasks of equal size and complexity to distribute among group members can be difficult.

Combination of group average and individual mark

...the group product but adjusted according to individual contribution to it, or based partly on the group product and partly on separate individual work (such as reflections on their own or the group work completed). Each student in the group is awarded a group mark with a mechanism for adjusting individual contributions. This option is often perceived by students to be more equitable than a shared group mark, but it can be difficult to negotiate adjustments.

Assessing the process of group work

Individual mark (adjusted from group average)

...an assessment of how the group worked but adjusted for individual contributions. The contribution of each individual (as defined by predetermined criteria) is assessed according to evidence from group log books, minutes sheets and/or direct observation of process. This option is a good way to proceed if some students have not pulled their weight; it also rewards strong individual contributions. One disadvantage is that reviewing log books can be time consuming, and direct observation might not be seen as a reliable method.

Group average mark

...an assessment of how the group worked. The contribution of each individual is assessed according to criteria, using log books, minutes sheets and direct observation, but the group members receive an average of the individual marks. This can encourage students to focus on group processes; however, it can also be seen as disadvantaging students who have made a greater contribution.

Individual mark

...a paper analysing group processes. Students submit and are marked on an individual paper that analyses the group process (including their own contribution and that of their peers). For more information, see Group Presentations and Report Writing.

Peer and self-assessment

The table below provides a number of options for self and peer assessment of group products and processes. When using any of these approaches, brief your students about the process, and make assessment criteria explicit and clear to them.

Once again, each approach has its advantages and disadvantages. Choosing an approach depends on the nature of the group task and the particular skills and experience you want your students to develop. Students need to be clear about the form peer assessment will take, and the weighting it will be given in the overall assessment.

Individual or group log books can be very useful for keeping track of students' contributions, and can be referred to in the process of peer and self-assessment.

Peer and self-assessment of the product(s) of group work
## Students distribute marks among themselves

Students are given a set number of marks (e.g. 80 out of 100) and the group decides how the marks will be distributed among group members. If the group decides that each member has contributed equally, each member of the group receives a mark of 80. If some group members have contributed more or less than others, their mark is adjusted accordingly.

Students may need support in negotiating marks, and conflict may arise in some cases. Generally, though, this approach is perceived to be fairer than a shared or average group mark.

## Students allocate individual weightings

Students are given a shared group mark, and then this mark is adjusted according to a peer assessment factor. The total mark is the group mark multiplied by the peer assessment factor (e.g. multiplied by 0.5 for "half" contribution; or by 1 for "full" contribution).

## Peer evaluation

Completed assignments are randomly distributed to students, who complete a marking sheet to identify whether their peer has met the assessment criteria and award a mark. These marks are moderated by staff and are returned to the student with the peer marking sheet. This method can encourage a sense of involvement from students and reinforce assessment criteria, and students can give and receive feedback.

## Peer and self assessment of the process of group work

### Peer evaluation

Students in a group individually evaluate each other’s contribution using a predetermined set of criteria. The final mark is an average of all marks awarded by members of the group. There are many advantages to this method (it reinforces assessment criteria, encourages involvement and responsibility, provides feedback and possibly reduces staff workload); however, some students may be concerned about being discriminated against.

### Self evaluation

Students evaluate their own contribution based on predetermined criteria and award themselves a mark. These mark are then moderated by the lecturer/tutor.

Summary adapted from: Griffith Graduate Attributes: Teamwork Skills Toolkit. Griffith University, pp.20–24.

### Ensure fairness

A frequent complaint from students regarding group work is that it is not fair. This is often because groups are assessed only on the outputs of group work, while the critical processes involved in producing the outputs are not valued in the grading.

- Remember, rich and positive learning can result from the experience of working in groups, even though the actual produced output might not be successful.

- Ask yourself: Are the "soft skills" of working effectively in groups important learning outcomes in their own right? If so, explicitly include them in the assessment criteria and reward their development in the grading.

Students also see as unfair the fact that individual differences in the extent and quality of contributions and performance may be masked by an overall group mark. To provide a mechanism for rating individual contribution, you might, for instance:
• Use peer assessment to allow students to rate each others’ contributions, and factor this into the final grade.

• Include individual reflection on the group work as another component of the task and assess it separately.

• Conduct a follow-up oral assessment with each student, perhaps about an aspect of the task.

Sometimes students feel alienated from group work because of cultural or other differences. Provide a clear structure, explicit expectations and well-defined assessment criteria. This can help ensure that students all engage in the collaborative work of the group.

Sometimes students cannot participate in group work tasks because of a disability, or for cultural or religious reasons. Devise alternative assessment tasks for these students.

Acknowledging and drawing on diversity in group assessment

International students who are left to their own devices to fit into a group “may have difficulty negotiating the subtleties in approaching and integrating into a group” (James, McInnis & Devlin (2002), p.56). International students who find themselves in groups with all local students may feel that being unfamiliar with processes that local students take for granted excludes them from the group. On the other hand, groups consisting of only International students can find it difficult to work out how to approach group processes and assessment. It is generally accepted that students benefit from working in groups with students from different backgrounds.

Issues for International students also arise in group report writing and oral presentations. Students can benefit greatly if you provide examples of good, grammatical writing that highlight typical report structures and referencing styles. To help them prepare for oral presentations, provide additional resources such as:

• guidelines for giving an effective presentation

• guidelines on using visual aids

• tips for speaking to an audience

• opportunities and encouragement to rehearse

• clearly stated learning outcomes and assessment criteria.

Discuss assessment criteria in class to check students’ understanding of what is required. Portfolio assessment (see also ePortfolios) can be an effective way to monitor the development of skills, particularly for International students.

Use technology

Integrate technologies into group work:

• to facilitate communication

• to enhance collaboration

• to give students a platform where they can demonstrate their work

• to help teachers grade and moderate
for early identification and remediation of non-participants.

You can use a Learning Management Systems (LMS) such as Moodle in group work. For example:

- Online submissions and grading can simplify grading and help teachers provide timely feedback to students.
- Conduct group activities within an online course. The system will record them, so that teachers can monitor progress and identify problematic groups at an early stage. Remember, though, that students can communicate with each other outside the LMS, so tracking their activity in the LMS may only provide a partial picture.

Other freely available technologies can be used to help students develop digital literacy skills. For instance:

- Students might use social networks (e.g. Facebook, Twitter, MySpace and hi5) and other popular communication applications (e.g. Skype and MSN) within their groups to supplement or replace face-to-face meetings.
  
  These are widely available, easy to use and, most importantly, familiar to many students.

- Wikis and file sharing applications (e.g. Google Docs) can help with collaboration, make it easy for the group to develop written reports and other texts, enhance peer review processes and allow individual students to record their contributions.

- Depending on how you want the group to format their presentation to share with other groups, or to showcase their achievements in an e-portfolio, you might permit them to use blogs, websites, Flickr, YouTube (UNSWTV) and wiki sites.

Case studies

**Video series - Assessing group work with team quizzes**

Additional information

External resources
• Helping Students Reflect on Group Work

• Facilitating and Monitoring Group Work

• Create a group activity in Moodle

• Create a group selection activity in Moodle

• Learning & Teaching Unit UNSW, Student guide to learning in groups

• University of Sydney, Group work guide for staff and students

• Centre for the Study of Higher Education: Assessing Group Work

**Further readings**


**Acknowledgments**

The contributions of staff who engaged with the preparation of this topic are gratefully acknowledged, in particular Alan Crosky in the School of Materials Science and Engineering.

This topic was inspired by a resource developed for the Macquarie University Assessment Toolkit.