Student and Group Evaluation – SAGE

A tool to support the use of student peer and self assessment.

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Introduction

"Student and Group Evaluation" or "SAGE" is an online tool which is being developed at Griffith University by its Flexible Learning Access Service department in collaboration with a small number of academics. It is designed to help academics to embed student self and peer evaluation (or assessment) into the learning and teaching strategies of their courses – thereby supporting students' learning.

As its name implies it is primarily designed to support evaluation activities where students work in groups or teams. SAGE allows academics to easily set up and manage the process of obtaining, collating, and sharing self and peer feedback among peers and instructors – regardless of numbers. It effectively automates almost all the administration which would otherwise be associated with these processes, rendering the approach very much more accessible to all, and simplifying organisation which can otherwise be fraught with difficulty.

SAGE already has many options which make it powerful and flexible. As such, it can accommodate a wide range of different assessment patterns while still retaining the essential features of self and/or peer evaluation. There are five basic types of assessment which SAGE supports. Each instance of each of these in a course is referred to as a "tool". The five types are:

1. Self-evaluation (Individuals evaluate their own performance)
2. Peer-evaluation (Individuals in groups evaluate the performance of other individuals within their group)
3. Peer and Self-evaluation (Individuals in groups evaluate themselves and other individuals within their group)
4. Evaluate other group (Individuals in groups evaluate one or more other groups as single entities)
5. Evaluate own group (Individuals in groups evaluate their own group as a single entity)

What follows seeks to introduce the core functionality of SAGE and to provide a simple short illustration of its use. The text below is not therefore a detailed account of the full potential of SAGE, nor a description of all the options.

It should be noted that at the time of writing (January 2009) SAGE remains "under development". At the present time, of the five assessment tools listed above, number 3 ‘peer and self-evaluation’ is the only one that is fully operational. Because of this, SAGE has not yet been released for use by all academic staff university-wide. This will only occur once development is concluded. However, this guide is meant to facilitate three important outcomes:

First, this guide supports forward planning of course assessment activities both in respect of the design activity managed by the course convenor which often involves considerable conceptual thought, and in respect of the authorship, approval and publishing of course outlines which have long lead times.

Second, this guide raises awareness of some assessment possibilities and some assessment principles which will stimulate imagination, innovation and enhancement in assessment practice more generally (including where SAGE is not used).

Third, this guide signals that SAGE is now at a stage of development where the team of developers welcomes some selective involvement from enthusiastic (and forgiving) pioneers willing to test-trial the tool (particularly in respect of it’s core, base-level functions).

Basic ideas

Boud (1991; 1995) has defined self-assessment as:

"the involvement of students in identifying standards and/or criteria to apply to their work, and making judgements about the extent to which they have met these criteria and standards. (Boud, 1991, p. 5).

By extension, peer assessment is the same except that students engage with other students (their peers) to determine standards and/or criteria, and/or make judgements about the extent to which the work of their peers have met these criteria and standards.

Thus, at its simplest, student self and peer assessment is where students evaluate some aspect of their own performance and/or the performance of their peers. This can be done either individually or in groups. SAGE supports evaluation processes associated with self and peer assessment in groups, and also individual self-assessment. The focus of this introductory guide will be on peer and self-assessment in groups. These evaluations may or may not contribute directly to the marks students accumulate toward their final grade. Regardless, the primary
benefit associated with self and peer evaluation is an enriched internalised understanding of the criteria and standards against which performance is judged, and commensurate improvements in students' ability to exercise that judgement and to utilise this ability to enhance their own performance and/or the performance of others (either individually or in a team).

Thus, when using SAGE, components of self and/or peer evaluation are:

1. Establishing groups of students
2. Defining the task(s) these groups will undertake and the associated time frame allowed (the "evaluation period").
3. Specifying criteria against which performance of the task(s) will be evaluated
4. Determining the nature of the resulting evaluation: marks, comments or both, and whether this is to be done anonymously.
5. Deciding whether students view each others evaluations during or after the "evaluation period" (The meaning of this term within SAGE is explained later below.)

SAGE facilitates each of these components. Further details follow.

**Establishing groups**

Except when SAGE is used to facilitate individual self-assessment, students must be allocated to groups by the course convenor. Grouping is easily managed via a simple interface. The process starts by extracting the current student data from the university information system "PeopleSoft". Students are then allocated to groups. After this, late enrollers, dropouts, and individual changes to group membership are all dealt with individually, by the academic, in the student management section within SAGE.

Note: Academics involved in developing SAGE decided that random grouping, and student self-grouping was not needed and was therefore discarded. These features could be included in a later stage if there is both demand and funding for them.

**Defining the task**

The academic is responsible for devising an assessable task which students must complete within a certain specified period of time called the "evaluation period". It is essential that the activities undertaken in order to complete this task result in students learning that is directly aligned with the desired learning outcomes for the course. (N.B. This does not negate the desirable possibility that additional learning outcomes may also be mediated by the task, but does mean that tasks which do not relate directly to desired learning outcomes are not eligible for inclusion.) In respect of self and peer evaluation it is best if this task is either one that is developmental in its nature, or one which consists of a specific number of defined – but linked – steps. In this way, students are able to repeatedly evaluate performance with increasing competence or levels of difficulty as they and their peers learn. Self and peer evaluation is an integral part of the process of learning.
For each task that an academic establishes there are several sequential stages. These involve students (repeatedly) evaluating each other's contributions and making constructive comments, finalising their marks and comments, reviewing marks and comments from their team members in conjunction with their own comments and marks until the evaluation period is closed by the convenor on a designated date. This 'evaluation period' is then followed by the "right to respond" (see below) and then final marking is conducted by the tutors. The convenor may choose whether or not this final mark and/or comment from the academic staff is made available for students to view.

In any one course the academic can create repeat cycles of peer and self evaluation by asking students to repeatedly edit the mark and comments they provide to their peers (and themselves), and/or by setting up multiple 'tools' in SAGE so that students can move from one to the next through the semester.

Specifying criteria

SAGE requires the academic to enter the criteria which students will use to judge their performances and/or the performances of others. How these criteria are derived is not significant to the way SAGE works as a tool. However, where students themselves can be involved in the development of evaluation criteria subsequent engagement with and internalisation of such criteria is enhanced. This is for several reasons. The first is that the criteria are expressed in words which, even if not the students own, are derived from students' discussions. Second, is because the act of generating criteria through collaborative discussion inevitably involves some critique of the meaning of the criteria, and the ways different criteria can be distinguished. Third, is that the process of engaging many students in discussion about performance criteria almost inevitably elicits many more points of view regarding what is relevant than any one individual would produce by themselves, particularly when the cohort consists of a diverse group of people – as is almost always the case.

Determining the nature of the evaluations

Academics may set up each tool to accept marks only, comments only, or marks and comments together. Academics can also specify whether the evaluations are to be anonymous. Each student is then asked to assign marks and/or comments against the designated evaluation criteria, to each of their group members. Where the process is anonymous students will not know which of their team members has provided which comment or mark. They will however know that it was one of their team members, and so use of the anonymous feature is not meaningful if group sizes are very small, and less worthwhile if group membership is determined by the students themselves.

Making comments is straightforward, and are used for formative purposes. Scoring however requires some explanation.

Scoring

One way to explain scoring is to think of a group being awarded a sum of money for
its activities. The diagram below shows a group of three people being paid a total of $15 between them. The diagram does not show how the money is distributed among the three people.

There are two different ways to distribute this money.

First, when each member of the group has contributed equally to earning the money, each can reasonably expect that their fair share will be equal in size to all other members of the group. In such cases, the total is divided equally by the number of group members. The diagram below shows a group of three people receiving equal money ($5 each) from a total pool of $15.

The second way to distribute the money recognises that some people may have contributed more than others to earning it. That is, the group's output as a whole may not have been equally attributable to each member. The value of the group's product and thus the total amount of money available to pay the group does not change, so if one person is paid more, someone else will have to receive less. The diagram below shows a situation in which one member contributed an above average amount to the group's total output, while another person contributed a below average amount.

Using SAGE, the group has a fixed number of points or marks to be distributed (decided by the academic). In assigning points or marks, students are required to do so within maximum and minimum limits which are also set by the academic. Thus, for example, the academic may decide that it is not permissible for a person to score zero, nor for a person to score all the marks – every group member is required to contribute something to the group's output and therefore this will be recognised in the distribution of points or marks.

**Completing marks and comments**

Throughout the evaluation period students have time to revise and amend the distribution of points and to edit the formative comments hey have provided to each criterion. Before the evaluation period ends, students can check to see if they
have completed all the evaluations required of them (by clicking a button). Once the evaluation period ends SAGE prevents students from making further edits to their marks and/or comments.

**Collation of marks and comments**

SAGE continuously collates the marks and comments from all team members into individual reports for each team member. That is, as soon as any team member provides a mark and/or comment on any student's performance, this is reflected in that student's collated report. Each of these reports can also be viewed by teaching staff at anytime.

Students are always able to view the marks and/or comments they have assigned to themselves and to others, however, depending on what ‘visibility’ setting has been chosen during set up of the tool by the academic, the marks and/or comments assigned to each student by others is either (a) permanently visible, or (b) is only visible to students after the evaluation period (the academic releases the comments and or marks for viewing).

Thus:

Option (a) allows students to view the comments and/or marks, assigned to them by their team members, continuously throughout the ‘evaluation period’, inviting ongoing critical reflection and re-evaluation

Option (b) has been added to allow moderation, by teaching staff, prior to the release of marks and/or comments for student view. In this case repeat cycles of evaluation, reflection and re-evaluation can be encouraged by the use of repeat iterations of the tool during the semester.

Without SAGE the tracking and co-ordination of these processes would be labour intensive. This is particularly so for larger group sizes and when the total number of groups is also larger.

**Right to respond**

Once the ‘evaluation period’ has ended the academic begins the ‘right to respond’ period. Students review their own report consisting of the marks and comments given to them by other students in their group, as well as their own comments. Students read these and now have the option to respond to the comments they have received from their peers (This phase is not relevant when the tool is used for marks only).

Once the ‘Right to respond’ period ends students are able to view ratings and responses given to them by their peers in response to their comments to the peers’ original scores and comments. (Essentially peer-comments on peer-comments.)
Final stage

The final stage involves the academic reviewing each student's self and peer awarded marks and comments in order to determine the final mark and the academic's feedback to the student. This final mark and/or comment from the teaching staff may or may not be made available to the students via the tool.

The interface

SAGE is entirely on-line. It is therefore accessible 24 hours a day.

Students always use a 'My Tools' button in a menu at the top of the screen, to access a comprehensive list of all SAGE tools they are participating in – any one of which may be set up differently by the academic concerned.

When students are ready to begin using a tool they simply select it from the My Tools list. They are presented with the first page of that tool. Each screen contains instructions.

When students return to SAGE later, they also see the different stage each tool is at.

There is a 'Help' menu if students need more detailed explanations. Trials so far have shown that students find the interface very easy to use.

An example - Philosophy and Values in Education

(Note: a more complete description of the example below is available as a separate case study in peer and self assessment. It is accessible from the Griffith Institute for Higher Education's web site via the following URL: http://www.griffith.edu.au/__data/assets/pdf_file/0017/134333/Education.pdf)

What follows describes the way SAGE is used to support learning in the Philosophy and Values in Education course.

In Philosophy and Values in Education Online group discussion forums are the main organisational activities for student learning. Peer and self assessment is integral to the functioning of these groups. In the section below, the way the discussion forums are established is described. This is followed by a description of the way SAGE supports the peer and self assessment in these forums.

Discussion forums (in Philosophy and Values in Education)

At the beginning of the semester each student is allocated to an online discussion forum group created by the course convenor. Problems are presented to these forum groups on a weekly basis over nine weeks, and students are required to work collaboratively in exploring these problems.

Each discussion forum group acts as an independent learning group. It is expected
that for students to obtain at least a satisfactory level of achievement in online participation they will spend most of their study time in this course engaged in researching, preparing, posting, and reading forum comments (about 10 hours per week). The posts made by students are treated as a reflection of the level of activity undertaken, so, for instance, hasty, on-the-fly, and poorly prepared posts do not involve much time.

This is a compulsory activity and the participation of students is assessed according to the three criteria and standards articulated in Appendix 1. The group discussion forum provides students with the opportunity to:

- work co-operatively and intensively on a shared problem by contributing their developing knowledge and understanding to the forum;
- develop their ethical thinking, in seeking to resolve ethical problems through personal reading, reflection and informed discussions in the forum, about key concepts in ethics and the ethical perspectives identified in the course; and.
- develop their ability to assess arguments about ethical matters.

Each student is required to participate in the group discussion forums by making posts to the forum each week. These posts must engage with the problem and with the posts of other members of the forum group. Over the course of each week students aim to make relevant and substantial posts to their group discussion forum that exemplify the following attributes:

1. **Analysis** i.e., explication/clarification of important issues and concepts; pertinent questions; application of relevant resources.

2. **Claims** i.e., justified statements that are relevant to the problem at hand; purported solutions(supported by reasons).

3. **Critical response** i.e., objections to others' points; building upon the points of others; critical response to another's claims.

4. **Self-corrections or elaborations** i.e., demonstrating that the critical comments of others has been taken into account.

Students are expected to think carefully about what they want to say, prepare the post in a word processing document, paying careful attention to good grammar and clarity of expression, and then copying the text to their group's discussion forum.

Prior experience with this method of teaching suggests that healthy group inquiries produce at least 70-80 posts a week per group, and vary in number from week to week. Because of this, it is a course requirement for students to make posts to designated group discussion forums several times per week over at least 3 days per week for the duration of the course (nine weeks). Throughout the course, student peers and the teaching staff assess how well each student has contributed to that process. Assessment is based on evidence drawn from direct observations of the quality and quantity of activity in group discussion forums. A large number of trivial or irrelevant posts will always be trumped by a smaller number of pertinent and helpful posts. In other words, quality is always more important than quantity.
Peer and Self assessment using SAGE

In *Philosophy and Values in Education* the SAGE tool is set up with the same student groups as the on-line forums. Each week, as well as participation in the on-line forum discussion, students are required to evaluate their own contributions to these forums and the contributions of each of the other members of their group. To do so, each student must write comments and provide a mark (in this case between 1 and 10) in response to specified criteria (in this case there are three criteria based on the three types of engagement introduced above and further elaborated in Appendix 1 below). The comments and marks are entered into corresponding windows in SAGE.

Thus, each student:

1. Evaluates their own contributions to the on-line forums against three criteria, writes comments for each, and provides a rating for each,

and;

2. Evaluates each and every other member of the group against the same criteria, writing comments and providing ratings for each.

In the case of *Philosophy and Values in Education*, each group consists of 10 students, so each student rates themselves and 9 other students on three criteria – generating a total of 30 comments and 30 ratings every week.

One can see that managing such a situation on paper could be very complex. SAGE however, processes each student’s submission and passes the comments from each student to its intended recipient, creating a weekly page of collated feedback automatically. As a result, each student is able to view a page on which they see their own appraisal of their own contributions, together with the self allocated marks, followed by the appraisals made by each of their 9 fellow students, and their corresponding marks. (In the case of *Philosophy and Values in Education* this feedback does not include the names of the students providing it.)

In consequence, each student engages in multiple cycles of critical reflection. First, each person must reflect (every week) on their own performance. Then each must reflect on the performance of 9 others. Then, when SAGE provides the collated feedback, each student reflects on what nine others have said about them, and how this compares with their own evaluation. The nature of the criteria oblige students to relate these reflections to their participation in the discussion forums – which is itself a critically reflective task. The combined use of on-line forums and SAGE orchestrate literally hundreds of reflective acts for every student, every week – intimately and integrally forming part of the process of the community of inquiry.

As noted earlier, this case study does not review all the capabilities SAGE has to offer. However, it is worth noting that there are many parameters the tool allows the academic to control. Included among these, the following give a taste of the flexibility and power of the tool.
Academics can set up:

- Any number of groups of students,
- Groups of any size (though groups larger than 10 are unwieldy for participants)
- Any number of criteria (though any more than 5 becomes onerous for participants)
- The requirement for group members to make comments only, ratings only, or both.
- Whether group members’ comments and ratings are anonymous.
- The period of time students can participate.

Further enquiries

It is emphasised that SAGE remains under development and has not been released for all academics to use. However, FLAS is taking expressions of interest from those wishing to test-trial the base functions of the tool.

Those wishing to do this should send an email to Ms Donna Shepherd describing the way in which you would like to use SAGE in your course. A small number of cases which are optimal from a testing point of view will be explored with a view to providing FLAS support.

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Appendix 1

Criteria and Standards: Marking Guide for Online Forum Participation

- The grade is a measure of overall participation across the semester.
- First, aspects of timeliness, attendance, and participation in SAGE are noted and a judgement made about whether this satisfies the compulsory participation requirements as stated in the Course Outline.
- A judgement of unsatisfactory on this compulsory requirement will result in a course grade lower than a Pass.
- Second, judgements are made about performance characteristics contributing to reasonableness across the forums.

<table>
<thead>
<tr>
<th>Meeting of compulsory minimum requirements for timely participation</th>
<th>Forum Weeks</th>
<th>Satisfactory overall?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of substantial posts in forum week (one-liners do not count)</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td>Yes No</td>
</tr>
<tr>
<td>Participated over at least 3 days?</td>
<td>Y/N Y/N Y/N Y/N Y/N Y/N Y/N Y/N Y/N</td>
<td></td>
</tr>
<tr>
<td>First post prior to Wednesday?</td>
<td>Y/N Y/N Y/N Y/N Y/N Y/N Y/N Y/N Y/N</td>
<td></td>
</tr>
<tr>
<td>Participation in SAGE - evaluating online forums</td>
<td>Formative entries &amp; Finalised</td>
<td></td>
</tr>
</tbody>
</table>

Performance characteristics contributing to reasonableness

<table>
<thead>
<tr>
<th>Engaging with Issues</th>
<th>Always</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyses scenarios (searching for and clarifying the imbedded issues)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identifies salient ethical aspects (determining the most ethically crucial questions and issues)</td>
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<td></td>
<td></td>
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<tr>
<td>Applies ethical concepts to issues (using ethical theory to express and clarify the arguments)</td>
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<tr>
<td>Provides reasons (does not rely on mere unsupported opinion)</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Contributes new ideas or content (does not just repeat what has already been said by others)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tries to progress deliberation (makes an effort to grapple with the difficult emerging issues)</td>
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<tr>
<td>Communicates ideas clearly (meaning is clear and not impeded by sloppy grammar and spelling)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Engaging with Peers</th>
<th>Quantity of contribution throughout semester</th>
<th>Quality of Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaging in Critique</td>
<td></td>
<td>7 = excellent 1 = very poor</td>
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</table>

| Overall Grade | 1 2 3 4 5 6 7 |
References
