

Managing timeous quality feedback with large groups

Faculty of Science | Department of Mathematical Sciences: Division Computer Science

Modules: Computer Skills 171 & Computer Skills 176

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Blended Learning Coordinator: Dr Ilse Rootman-Le Grange ilser@sun.ac.za

Learning activity:
Timeous feedback

Learning technology:
SUNLearn quizzes and workshop tool

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Context

Background

The Computer Skills (CS) modules fall under the auspices of the Department of Mathematical Sciences: Division Computer Science. The first-year modules had been compulsory for all students in both the Faculty of Science and the Faculty of AgriSciences but, in 2015, the Extended Degree Programme (EDP) students were also included. (EDP students comprise students from the Faculty of Engineering, the Faculty of Science and the Faculty of AgriSciences.)

This therefore became an extremely large group of students; in June of that year, there were 1 117 registered mainstream students and 151 registered EDP students. Ways then had to be found to give timeous feedback to this group without compromising the quality or standard of assessment.

The lectures are conducted in computer user areas (CUAs). The venues where the mainstream students have their lectures already had touch screen monitors; the other venues have been incrementally upgraded and all the venues now have touch screen monitors.



Figure 1: NARGA G, one of the CUAs of the Faculty of Science, where students work on their own or together (Courtesy NARGA, 26 January 2016)

Subject area and intended learning outcomes

Upon completion of the modules, students should be comfortable in navigating software applications, specifically text editors, spreadsheets and presentation applications. The goal is to train them to use software applications to enhance their academic capabilities, so that they are able to:

- gather, tabulate, analyse and chart data using spreadsheet applications;
- report results using text editors; and
- present findings using presentation applications.

As computer technology is a dynamic field, students are also encouraged to explore beyond what is being done within the classroom. Self-learning is therefore assessed as part of the modules.

The Microsoft (MS) Office 2013 suite is used to develop skills in working with a text editor (Word), a spreadsheet (Excel) and a presentation package (PowerPoint). Although the Apple and Android platforms differ from the Windows environment, the basic principles and context remain the same. Windows is the platform currently used due to licensing agreements.

Established practice

In the CS modules, all assessments are open book, i.e. students are allowed to use resources available on SUNLearn during any assessments, including tests, and the continuous assessment model is employed.

The mainstream students have a total of 26 allocated periods divided into 4 for a project, 4 for tutorials and the remainder for lectures. The lectures are less theoretical and more focused on the practical application of text editors, spreadsheets and presentation packages. Two lectures per fortnight are spread across the year.

The EDP students have two lecture periods and one two-hour-long practical assessment session every week throughout the year. One of the lecture periods is used for feedback and, later in the year, as a remedial session.



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The challenge

The challenge was to find ways to give timeous and quality feedback, either formative or summative, without compromising the standard of assessment within this large group of students. Due to the size of the group, feedback (in the form of grades) had previously been available only about three weeks after an assessment took place, which led most students not to regard the feedback as important as it distracted from the current material being focused on. Valuable learning opportunities were being missed.

Advantages associated with the integration of technology

The advantage of using SUNLearn quizzes is that it facilitates automated marking. As a result, less time is spent by lecturers marking and feedback can go out much faster. The SUNLearn workshop tool also allows for peer assessment. This provides an additional learning opportunity and students can receive more individual feedback than is possible when all marking is done by one person. Both these tools also have the option for the lecturer to include general or specific feedback.

Student overview

CS is compulsory for all registered first-year students from Faculty of Science and the Faculty of AgriSciences, regardless of level of skill. It is a very diverse group of students with huge numbers. Some of the students have had access to computers from a young age, some have had access intermittently and some have never had access, these modules being their first experience with a computer. In most cases, students have used PCs only for social or limited academic purposes. This creates an additional challenge during lectures, as some students need far more time than others to complete the practical assignments. The lecturer therefore also wanted to build some flexibility into the assignments.

Other relevant role-players

The blended learning coordinator, the SUNLearn technical support team and the technicians at the CUAs in the Faculty are valued allies.

Intervention

Different types of assessment and feedback strategies using the SUNLearn

Quiz and Workshop tools were explored and trial runs were done with one of the three class groups of EDP students before being rolling out to the rest of the students.

Assessment activities

Assessment activities

Students are individuals and each has a unique learning style. Individual testing is therefore regarded as very important. Students also need to be prepared to work collaboratively, however, and peer assessment and group work therefore formed part of the learning and assessment activities.

All the resources, i.e. notes, videos etc., were available on SUNLearn from course commencement until completion. The learning activities, the majority of which took the form of formative assessment (providing feedback and not simply grades), were also available throughout the duration of the course. The students were thus able to complete the activities either during class or in their own time and even repeat them to practice the concepts that they struggled with. This built some flexibility into the relevant module, which helped to accommodate the varying skill levels in the group.

The first tutorial assessments were marked by the lecturer. This was followed by quizzes, which were marked automatically. Peer-assessed assignments were then introduced. Finally, to explore the viability of the process, a self-assessment activity was also included. The assessment strategy thus started with what the students were familiar with and built on that in stages to give them more responsibility as the year progressed. All the assignments were done on SUNLearn.

The assessment activities consisted mostly of web-based assessment, i.e. automated marking was done through SUNLearn quizzes, of peer assessment through SUNLearn Workshop and of traditionally assessed assignments.

During the first term, practical assessments consisted of SUNLearn quizzes (Figure 2) that were marked automatically and an evening test (summative assessment) that was marked by the lecturer.



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Quiz 2

Hierdie quiz vorm deel van tut 2 vir die Word komponent. U het 60 minute om dit te voltooi. Let op dat vraag 5 meer as een antwoord het.

This quiz is part of tut 2 for the Word component. You have 60 minutes to complete it. Note that question 5 has more than one answer.

Figure 2: Example of a SUNLearn quiz with the instruction as displayed in SUNLearn.

During the second term, peer assessment was introduced using SUNLearn Workshop. This consisted of the students working in groups on a presentation that was then assessed by the rest of the class. Random allocation was used to assign the students automatically to the various groups. Clear assessment criteria were given and discussed with the students beforehand (Figure 3). The students also assessed each other's contributions to the assignment and how well they worked together.

Aspect 3

Skyfie / Slide 2

Uitleg / Layout : Two Content / Comparison [1]. Geen punt vir ander uitleg. No mark for any other layout.

Korrekte bullets en indentering. Correct bullets and indents [1]

Verander kleur van parallelogram. Change colour of parallelogram. [1]

Grade	Choose... ▾
Comment	<div style="border: 1px solid black; padding: 2px;"> Choose... 3 / 3 2 / 3 1 / 3 0 / 3 </div>

Figure 3: Example of assessment criteria for one of the aspects evaluated as part of a PowerPoint assignment

Feedback practices

For the SUNLearn quizzes, the lecturer used multiple-choice questions that were marked automatically. The students thus received their grades immediately after submitting their answers. They were allowed only one submission per quiz but they could revisit the quizzes and view their

answers at any time.

For the peer-assessed assignments, the students were given a week to assess each other's work after the submission deadline. Here, feedback was thus available within one week. Also, since the students were provided with the assessment criteria beforehand, the grades that they received also enabled them to identify more specifically where they went wrong or needed to seek help. This type of assessment thus gave the students much faster but also more detailed feedback than had previously been available.

For the final tutorial of the module, the students were asked to assess their own assignments through SUNLearn Workshop. Again they were given set criteria against which to assess their work. This tutorial contributed a very small portion of their overall mark, as the purpose was to trial the strategy without penalising the students.

Learning environment

Technology resources

Only SUNLearn instruments were used for assessment and improved feedback practices. This ensured that the students were familiar with the platform and it kept all the grades together.

Support challenges

The technical side of the module was fully supported, with hardly any challenges. During lectures, the lecturer communicated with the computer lab technical support teams, the SUNLearn platform and the blended learning coordinator using Lync, the MS Office chat tool. The computer lab also had a backup generator that activates during times of load shedding; the students thus rarely noticed the difference, as loss of network connection is approximately only five minutes.

Student experience

Student feedback on the learning experience

When asked during sessions how they experienced the learning and assessment activities, most of the students expressed a positive experience. They said that the peer assessments added value to their learning experience and created an opportunity to learn differently, as they were exposed to other students' approaches.



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No formal feedback on the assessment practices was conducted. Compared to previous cohorts, the lecturer did, however, experience the mainstream group as more mature and eager to learn than previous years, which greatly facilitated the process. Keeping this in mind, this group had an overall better performance compared to previous years. Not only did more students pass their module but they passed it with higher grades than before.

Assessment impact

The lecturer observed a number of positive and interesting changes when she adjusted the approach to formative assessment in CS. With the first traditional assessment, when the lecturer had marked the test, the students were much more eager to argue and state their cases for higher marks compared to the case of the quiz or peer-assessed assignments. With the peer assessment, the quality of the students' work improved markedly by the second and third assignments. The lecturer observed that the students were more mindful of and paid more attention to the feedback provided by their peers. More of the students were also successful with the section of work that was peer assessed.

In general, there was more timeous feedback than in the past, as long as the responsibility of peer assessment was clearly communicated to the students. This can be aided by making use of the grading system in SUNLearn Workshop, which allows the lecturer to contribute a set percentage of the students' final grade to how well they assessed their peers' assignments.

General

Opportunities

In the following year, a progress bar will be added to the SUNLearn module to illustrate activity completion, as this communicates submission dates and helps students with their time management.

Challenges

As CS is a service department for the Faculty, the true measure of success is to observe the application of the skills and knowledge in other subject areas. This does, however, make it more difficult to monitor. The next challenge is thus to devise a method of evaluating whether true learning

or skill acquisition really has improved.

Finally, self-assessment requires a level of maturity and the lecturer decided not to employ this method again with first-year students. Interestingly, when it came to assessing themselves, some of the students were harsher than the lecturer or even their peers. Self-assessment is a valuable, even crucial, skill, which takes time to develop and it might therefore be more effective to employ it with more mature and experienced students.

Other concluding thoughts

A changing world requires an assessment framework that changes as technology and access to technology increase. Outdated forms of assessment born during the Industrial Revolution are not aligned with the needs of the Information Age. When or where learning occurs cannot be accurately measured nor can it be assumed that it occurs only between 08:00 and 17:00 within a classroom setting. Using blended learning and a platform that is accessible any time, anywhere, allows students the freedom to complete assignments in their own time using the resources that are at their disposal.

Along with this, increasing student numbers with limited staff makes it increasingly challenging to provide timeous and quality feedback, which is a crucial part of the learning process. Implementation of the quiz and peer assessment opportunities definitely succeeded in giving the students more timeous feedback. It does, however, require careful planning and very clear communication and guidance to the students.

There are two sides to peer assessment as a learning opportunity. Firstly, students have the opportunity to see each other's work, which exposes them to different approaches and which they experience as contributing to their learning. Secondly, students are provided with faster and more personalised feedback. In order for this to work, however, all the students need to do their part and know how to do the assessment, otherwise some of them will not gain value from this activity. Lecturers should thus communicate the process and the purpose very clearly with their students. SUNLearn Workshop furthermore allows lecturers to allocate a percentage of their students' final grades to how well they assessed their peers' assignments.



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It can be concluded that SUNLearn tools make it possible to provide timeous feedback to large classes if planning is done carefully and the tools are implemented effectively.

