

## Enhancing feedback with FeedbackFruits: Scaling for transformative implementation

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This study investigated one technology that would allow for self, peer and group feedback for students. In order to enhance feedback given, the tool FeedbackFruits, allowed staff to implement in their course in a consistent and easy way. This study was conducted over two trimesters on the effectiveness, ease-of-use and the ability to be able to scale up across the university. Staff report they would use FeedbackFruits in the future and that students were generally positive with regards to using it. Although the study is continuing, the design-based research methodology allows for improvements in study design to be modified according to university needs in order to best evaluate the technology.

Keywords: Peer assessment, self-assessment, group assessment, FeedbackFruits, higher education, educational technology, feedback

### Introduction

FeedbackFruits provides self and peer review to activate students' critical thinking through peer learning. Although Griffith University is trialling the range of self, peer and group feedback and assessment tools as well as the assorted interactive plugins, the primary focus of the pilot is the use of the self and peer/group member evaluation assessment plugins that are available. Currently these tools have been available for staff from Trimester 3, 2019 (which was conducted from November 2019 to February 2020) and in Trimester 1, 2020 (which was conducted from February 2020 to June 2020). The university has a large suite of Virtual Learning Environment (VLE) educational technologies available to staff to assist with engaging students. As part of ongoing VLE transformation review activities, the provision of self and peer assessment facilitation and provision has been identified as a 'significant gap' in the solution landscape which has led to the university investigating this gap and identifying FeedbackFruits as a possible technological tool that will fit well in the space.

The FeedbackFruits trial aimed to investigate and evaluate the following areas:

- **Transformation and Use:** the effectiveness, ease-of-use and capacity to support in-practice pedagogies in the context of self and peer assessment.
- **Support and Resources:** the suitability of support resources and provision via FeedbackFruits in the context of wider implementation.
- **Scale:** the value-proposition of the FeedbackFruits suite of self and group plugins in relation to ongoing use as part of the Griffith University VLE. This includes the formation of a community of practice and the engagement that assisted this to scale.

One of the reasons for the trial is that feedback for students needs to be effective (Hattie & Timperley, 2007) as when it "is combined with effective instruction in classrooms, it can be very powerful in enhancing learning" (Hattie & Timperley, 2007, p. 104). Thus, combined with an increasing VLE presence at the university (Poulsen et al., 2019), FeedbackFruits is a potentially powerful tool to assist student learning. This study set out to ascertain staff thoughts on using peer feedback in their teaching.

### Literature Review

Peer feedback can easily support self-assessment of students if it acknowledges the students and the responsibility they have in the feedback process (Evans, 2015) and is planned accordingly. It appears FeedbackFruits might be a tool to be able to assist in achieving this easily as it allows students to be able to manage their own feedback in a greater way. While educational technologies can improve student engagement, one exploratory study of 227 business education students suggest that students now like to learn at their own

pace (Aviles & Eastman, 2012) and FeedbackFruits is one technological tool that enables this. This combined with the notion that peer feedback is directly beneficial to the students, suggests using a technology to assist with the process is helpful.

One study (Schillings et al., 2020) set out to explore students' beliefs about peer feedback suggests that they have some confidence in the feedback they give to other students as well as when receiving feedback. Students also feel that peer dialogue enhances their engagement with the feedback (Schillings et al., 2020). Thus, a tool such as FeedbackFruits is a valuable addition to the teaching repertoire. Another study found that producing feedback reviews does engage students in making evaluation judgements which includes that of their peers, but importantly they make them about their own work through being reflective. This means that the control of the feedback is with the students and this can mean they actually require less external feedback (Nicol et al., 2014). These are important concepts about using reviews and peer feedback to engage students in their learning.

Another paper reviewed studies of peer feedback from a fairly novel perspective, which was from the providers of the feedback (van Popta et al., 2017). The authors' conclusions of the review suggest that it is worth investing time to set up students providing feedback to each other and implementing this well. As such FeedbackFruits provides an excellent online tool for students to access and use with the assistance of the academics who teach their course(s).

At Griffith University a tool such as this was deemed necessary and thus the FeedbackFruits trial began. As the FeedbackFruits trial was around the effectiveness and ease of use of the tool the research questions developed were:

1. In what ways has a community of practice been created across the university to support FeedbackFruits?
2. What are the experiences of staff implementing FeedbackFruits in their courses to support self and peer assessment?

## Methodology

As this study is iterative in nature it was decided that design-based research would provide the methodological frame for the study due to the phases of the study in each trimester. The rationale behind this was that design-based research is an iterative process that involves analysis, design, development, evaluation and documentation of learning design principles and ideas (Phillips et al., 2012; Reeves, 2000). The project followed a four-step process similar to that defined by Reeves (2000), as is shown in Figure 1. Each stage of the study will allow for changes within the design of the research and thus it is expected that the survey may be modified each trimester in order to improve the design.

In Trimester 3, 2019 (which ended in February 2020) and Trimester 1, 2020 (which ended in June 2020) FeedbackFruits was trialled across 28 courses in total. This meant that 19 academics were involved in the trial and 2798 students also participated due to their course enrolment and active participation using FeedbackFruits. In February 2020, six of the eight Trimester 3, 2019 academics completed the evaluation survey on their courses (n=8). However, not all of the academics completed every question in the survey. During Trimester 3, as it was a smaller initial trial, there were 573 students using FeedbackFruits during this time which was across the eight courses.

In June, the survey was sent to 19 academics with 11 completing the survey for Trimester 1, 2020. The survey was designed to be easy to complete and take approximately 10-15 minutes. Aside from background data of where the academic worked, the survey asked if they had used a feedback tool prior and if so which one. The survey also included four slider questions which were out of 100 and then several open-ended questions to ascertain the ways it was beneficial for the students to use, and the ways FeedbackFruits added value to the VLE.

## Results

Results are presented here with Trimester 3, 2019 presented first and then the results from Trimester 1, 2020. Only the staff survey results are presented due to the space allowance for the paper.

As part of the trial a community of practice was created. This included:

- Griffith Business School (GBS) funding the initiative to meet AACSB accreditation
- The pilot team included central L&T, L@G technology support, a champion Learning and Teaching Consultant from each group

- The FeedbackFruits Champion Microsoft Teams space was created with 135 members
- Inspiration Day International event, co-hosted Deakin FeedbackFruits,

### **Trimester 3, 2019 Results**

During Trimester 3, 2019 (until Feb 2020) there were 52 FeedbackFruits group and peer feedback learning activities created. Generally, peer review was used in the first part of the courses and the group feedback was used at the end of the trimester. From the 573 students in Trimester 3 who used FeedbackFruits over 300 participated in activities towards the end of the trimester.

The six academics who completed the survey were from a range of Academic Groups (Faculties) at Griffith University. There were three from Griffith Business School, two from Griffith Health and one from Griffith Sciences. There were five academics who reported if they had used peer and/or self-assessment tools before using FeedbackFruits with four having used them before and two who hadn't. From the four who used it three used SparkPlus and one had previously used a Moodle workshop tool.

From the six academics surveyed four used it for peer review and two used it for a group member evaluation. All six academics who completed the survey (100%) would use FeedbackFruits again in their course and found it to be a valuable addition to the university virtual learning environment. The academics were asked to use a sliding scale rating out of 100 with results positive. Out of 100, the overall score given was 69.17 about ease of the setup to be able to use FeedbackFruits. However, it should be noted that there was an outlier of one 20 while the rest of the scores were 70 to 95. For the out of 100 score of how easy was FeedbackFruits to use the score was a high mean of 87.17 with individual scores between 80 and 95. The academics feel confident to use FeedbackFruits in their teaching in the future with a mean of 75.5 and scores ranging from 50 to 95. The academics were asked how confident they feel to show others how to use FeedbackFruits with a mean of 73.17 and a score range between 50 and 95.

Academics felt that FeedbackFruits “complements the other tools in use” in the VLE and that “it gave the students a place for feedback on their work” and that it “was easy to manage student group evaluation and integration with [the] mark centre” with a “seamless flow to allow interaction with peers” and that FeedbackFruits “adds functionality that is currently unavailable with any other tool”. There were several comments on its ease of use and the benefits to students. This includes one comment:

FeedbackFruits enables streamlined peer and group assessment, which I think is highly beneficial for students. The fact that it is so simple to use yet has many different settings an[d] options, allowing the task to be tailored to specific courses make it a beneficial option.

One academic felt that the “response to queries using the FeedbackFruits Support Helpdesk was quick and useful” while another felt the tool “was promoted well and has (sic) been supported well throughout the trial”. Thus, concluding the Trimester 3 survey response report.

### **Trimester 1, 2020 Results**

In Trimester 1, 2020, a total of 124 experiences were created. This included 26 peer feedback activities, 92 group feedback activities, three interactive feedback assignments, one interactive video, one interactive presentation and one comprehension. There were 74 live experiences with student interaction and 76,273 review comments written (from 2,209 unique students) and 738 reflection were recorded.

From the Trimester 1 survey, there were six academics who reported being from the Griffith Business School, with two from Griffith Health, and three from Griffith Sciences. From the survey eight of the 11 academics who completed the survey had used a peer and/or self-assessment tool previously while three had not. Four had previously used SparkPlus, one had used PeerMark which is a Turnitin product and four had used different tools including a “personally designed Qualtrics survey” “ITP Metrics”, “shared reflections and other manual but highly interactive and group-based development approaches” and “students compile a SS”.

These results from this survey show that academics reported on both the group member evaluation (n=6) and the peer review (n=4) tools with another academic actually using both of the tools in Trimester 1. These Trimester 1 academics were also asked to use a sliding scale rating out of 100 with results positive. Out of 100, the overall score given was 76.36 about ease of the setup to be able to use FeedbackFruits. The minimum score was 50 while the maximum score was 100 on how easy it was to set up. This would be why it is a higher mean than for Trimester 3. For the out of 100 score of how easy was FeedbackFruits to use the mean was 78.45 with

individual scores between 60 and 100. The academics feel confident to use FeedbackFruits in their teaching in the future with a high mean of 85.82 and scores ranging from 70 to 100. The academics were asked how confident they feel to show others how to use FeedbackFruits with a mean of 77 and a score range between 50 and 100. All 11 (100%) academics found that FeedbackFruits are a valuable addition to the university VLE. The staff felt there is a variety of ways FeedbackFruits can be of value including one academic who stated:

Easy to use, clear instructions, excellent data capture, elegant design; can adjust criteria to meet the need of the assignment/assessment; excellent, time saving way for students to self and other evaluate; simple for academics to allocate the self and peer marks - I could go on and on - it's brilliant.

While another academic reported FeedbackFruits “allowed students to provide feedback to other students in relation to group assignments as part of the overall assignment mark. Once set up it worked well with the LMS”. Yet another stated that FeedbackFruits is a “good tool for anonymous group member evaluation within built feedback response mechanisms” while another suggested “it makes marking way easier”.

Staff were asked about the ways they felt using FeedbackFruits were beneficial for their students. Responses were varied and positive. One academic stated that FeedbackFruits “allowed students to provide feedback to other students in relation to group assignments” while another suggested the positives are about “teaching group development, reflection and personal development, simulates real world expectation and assists with employability”. An academic suggested that FeedbackFruits “assists in keeping groups accountable and building the ability to provide professional feedback” while yet another suggested it is “easy to use and understand,” had a “quirky use of fruit names”; excellent information gathered for the students' reflection” and that “they liked it”. Others liked that “it enabled students to be able to provide feedback followed by being able to self-reflect on the feedback received” while one simply stated it was a “quick and easy way to review team members and provide feedback to each other”. As can be seen comments by the academics were overwhelmingly positive. The 11 staff responded in a positive way to continuing to use it in the future.

To sum up, one staff member commented “students give very positive feedback it empowers them and has removed social loafing from group work and replaced it with group development and dynamics” although another suggested that they did need a “fair amount of support” from the learning and teaching consultants and they would need to continue that support in order for it to be used in the future.

## **Discussion**

Through the creation of a community of practice staff were supported and thus this trial was deemed successful. The anecdotal evidence of those wanting to use FeedbackFruits at the university also suggests this which is positive. Data will continue to be collected for phase 3 of the project which is on in Trimester 2 (July to October 2020). By using design-based research methodology this has allowed for the project to change (Reeves et al., 2005) and grow from the results of each trimester. Staff felt that FeedbackFruits was well supported and although not all staff found it was easy to setup, they were able to do so with support. Due to this all staff reported being willing to use FeedbackFruits again in their courses in the future. The technology fits very well with the current university VLE needs as described previously (Poulsen et al., 2019) and due to this the trial is continuing into Trimester 2, 2020.

FeedbackFruits allows for feedback to be given to students and this study supports that it is in an effective way which has been evidenced previously as being important (Hattie & Timperley, 2007). Through the use of the community of practice which centred around a Microsoft Team it became evident that the sustainability and scalability of the implementation was able to be achieved through this. The trial has demonstrated the need for design guidelines and enhanced literacy across the domains of feedback and assessment and will be the elements that drive success at scale at the experience level.

A well-designed implementation allows for the students to really engage well in the courses that used FeedbackFruits. This has further driven the design and the expected outcomes and again this has continued to be developed by the design-based methodology. It has also been found that FeedbackFruits supports students well in the self and peer assessment space as reported by the academics in this study that used it.

## **Conclusion and Next Steps**

FeedbackFruits was set up as an online tool for group communication using the self and peer assessment tools. Overall, staff report that the students found the applications easy to use, but even more imperative, results from

this study shows the use of FeedbackFruits has encouraged students to engage more fully with self and peer reflection as a concept, bringing not just an active learning component to learning activity, but authenticity in approach, reflection and evaluation (as reported by staff using FeedbackFruits). As FeedbackFruits is a reasonably complex technology some staff require extra support. As the study continues more resources will be created and become available to staff in the future. This will allow for just-in-time support for staff while other staff will continue to access the support staff across the academic groups.

Now in Trimester 2 the university has introduced the other nine interactive tools available in FeedbackFruits for staff to access and use with their students. These interactive tools provide academics with countless opportunities to engage students throughout the trimester to enhance student learning in many courses across the university. Future directions for this study include further scaling up the trial to include more students and staff as this then provides an opportunity to increase student engagement in more courses across the university. As other academic groups are doing more than the self and peer and group assessment this allows for collective knowledge about the tool to be gained which is also positive. Investigating the other interactive tools that are now available at the university is another future direction in the study.

Although use cases have been provided to the university and FeedbackFruits community after the successful trial implementation, it is expected that more will be provided. FeedbackFruits has been shown to be a highly valued addition to the VLE and in the future a mainstream implementation will be conducted.

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