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## Timely Student Feedback

Ronan Oliver

*Technological University Dublin, ronan.oliver@tudublin.ie*

Evelyn Casey

*Technological University Dublin, evelyn.casey@tudublin.ie*

David O'Connor

*Technological University Dublin, david.x.oconnor@tudublin.ie*

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# Timely Student Feedback

*Ronan Oliver, Evelyn Casey, David O'Connor*

**TU Dublin ([www.tudublin.ie](http://www.tudublin.ie))**

## Introduction

Students are not only interested in their grades but they are also interested in feedback (Mulliner & Tucker, 2017), as this is an important element of their learning cycle (Gibbons et al., 2018). Together with lecturers they agree that for this to be effective, it must be returned quickly so that it can be acted on within the context of their learning (Denton et al., 2008; Mulliner & Tucker, 2017).

However, the delivery of timely and effective feedback can be a burden on lecturers, particularly if they are responsible for large classes and in the early stage of their career when the focus can be on developing content to meet learning outcomes. These and similar challenges contribute towards the low approval ratings on feedback provided by students across our national third-level institutions (Gibbons et al., 2018). This project therefore explores the benefits and functionality of alternative applications that can help address these challenges.

It is our aim to create a strategy for lecturers to provide feedback that meets students' expectations and assists in preparing them to take responsibility for their lifelong learning. The timeframes and applications used for this purpose are as follows:

1. within class , using TurningPoint student response system;
2. within one to two weeks , using Peergrade peer review and assessment application, and beyond this up to;
3. fifteen working days , using the virtual learning environment (VLE), Brightspace.

These timeframes have been chosen as research suggests that a policy of providing feedback with fifteen working days can increase student satisfaction (Mulliner & Tucker, 2017). The benefit of these applications for both student and lecturer are established here and a poster artefact has been developed to provide a condensed summary of the applications along with additional resources to help ensure their successful implementation.

## Literature Review

### TurningPoint

Student response systems (SRSs) such as TurningPoint collate real time, individual responses to on-screen questions in the classroom. This helps to quantify the degree of understanding and in turn identify opportunities to dedicate additional class time to help students apply the new knowledge through learner centred approaches.

TurningPoint gives the option to upload any formative assessment results to the VLE Brightspace and provides lecturers with the tools to correlate formative assessment data and exam performance using their own perimeter details such as student numbers, name, attendance points, performance points and benchmarks. An additional “Results Manager” allows lecturers analyse data for demographic, question, individually or aggregated over time and all data is easily exported into reports for further analysis.

### *Benefits and implementation*

Literature suggests that SRSs can “improve achievement, attention to in-class material, motivation to attend sessions, and promote active learning and critical thinking through peer interaction” (Walklet, et al., 2016, p. 35). TurningPoint was chosen for this project having witnessed its benefits during our micro-teaching sessions, its ease of implementation using students’ smartphones as well as the contingency for the clickers shown in Figure 1.



*Figure 1: TurningPoint Response Card Clickers (Source: TurningPoint, 2019)*

TU Dublin has a sitewide licence for TurningPoint that is available to all staff through the LTTC. Once an account is created, lecturers are free to design and set quizzes or polls for their lessons. From the perspective of this project, we have found that Multiple Choice Questions (MCQs) are a useful way of generating rapid feedback from students and can save time in marking (Nicol, 2007). Further evidence for such quizzes and alternative polls have been summarised from the literature below.

### *Further applications from the literature*

- Students can be provided with reading and lecture notes before they come to class, where they can then take a series of MCQs and submit their responses. Lecturers can gather immediate feedback to determine if the students have answered correctly and can then permit students to discuss questions in small groups (Y1Feedback, 2016). Lecturers can identify which concepts need further discussion and to close the gap in the students zone of proximal development (Tudge, 1992).
- Lecturers can incorporate TurningPoint in large classes by asking Revision Questions at the beginning of class to determine the comprehension of key concepts from the previous lesson. The lecturer can clarify any miscomprehension at this time as well as at the end of the lecture by asking a number of Likert Scale questions to measure any further difficulties. The lecturer also has the option to carry out a Peer Instruction activity whereby students reflect on a question posed by the lecturer, first individually and then within a group, and the lecturer can review their responses to

determine if further explanation is required before moving to the next concept (Y1Feedback, 2016; Nicol & Boyle, 2003).

- Lecturers can use TurningPoint Mobile to trigger ‘face to face discussion’ at multiple points during lectures, incorporating text responses and word clouds generated by the students. This approach will add variety for the student and lecturer; help lecturers to prompt group discussion and enable the students to contribute to the body of knowledge (Y1Feedback, 2016).
- TurningPoint can also be used anonymously enabling lecturers to pose questions to an large lecture theatre and allows students to give free form text responses. This option to permit students to voice their opinions anonymously can trigger controversy that can promote “the most verbal rehearsal and exchange of the assigned material” (Johnson & Johnson, 1985), as well as building their confidence in an active learning environment.

### Peergrade

This peer feedback and assessment application facilitates both the timely delivery of effective feedback and grading of assignments to students by assigning such tasks to an anonymous peer(s) rather than their lecturer. An online application allows students provide feedback to peers and by doing so learn how to identify areas for improving their own work (Graham, 2017). Lecturers have the option to integrate the application within Brightspace so that the students’ self-directed learning remains within a single VLE (Peergrade, 2019a) (Figure 2).

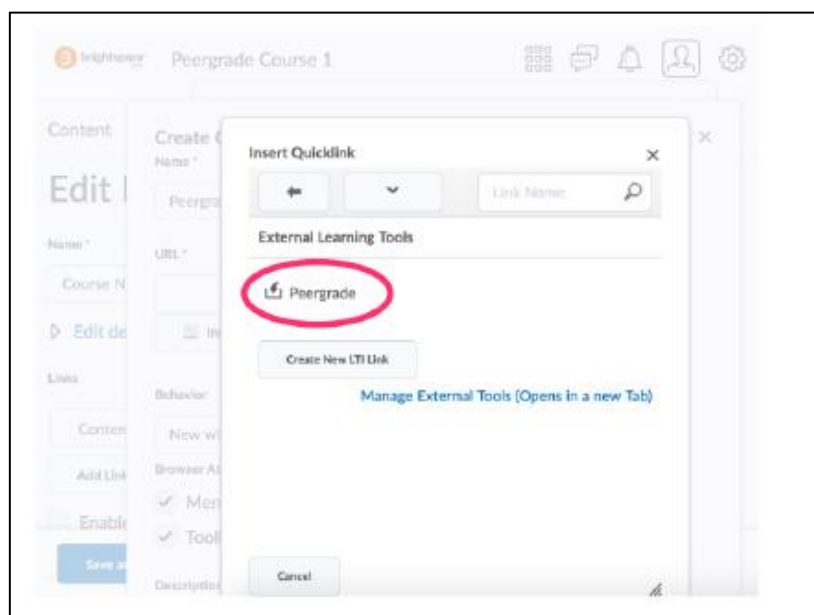


Figure 2: Peergrade integration within Brightspace  
Source: Peergrade (2019b)

### Benefits and implementation

Peer feedback has been acknowledged for its efficiency for volume and timeliness, simplified language and scaffolding towards self-regulation (Y1Feedback, 2016; Gibbons et al., 2018); but also criticised due to students’ lack of feedback literateness, the redistribution of power between those involved (student, peer and teacher) and the time need for its implementation (Liu & Carless, 2006; Gibbons et al., 2018). Peergrade was chosen for this project as it provides for such advantages and it will be shown to address such criticisms.

Peergrade is available for free with reasonable functionality, additional functions such as self-evaluation and question weights are available on plans costing \$2 and \$5 respectively for each student per year. While a free month of the latter plan is also available for each referral to colleagues. Once an account is created, lecturers can set peer feedback assignments leveraging supporting material provided by the platform.

#### *Further evidence from the literature*

Nicol et al. (2014) explored the literature and found that peer feedback affords students the opportunity to:

- critically examine the work of their peers so that they can better understand how their own work might be improved (Cho & MacArthur, 2010; Cho and Cho, 2011); and
- receive feedback in a language that is much more accessible to them than that delivered by their teachers (Topping, 1998; Falchikov, 2005).

Nicol et al. (2014) adds to such findings by observing that peer feedback:

- triggered some powerful mental processes among students, including critical thinking, the active interpretation and application of assessment criteria, reflection and learning transfer;
- engendered reflective processes that gave students more control over their feedback processes and thus their own learning.

It is noteworthy that Nicol et al. (2014) did not include peer assessment in their study i.e. students grading one another, as it was argued that students have reservations about the fairness and accuracy of such processes (Liu & Carless 2006; Kaufman & Schunn 2011). Similar concerns about the reliability of peer assessment and the perceived expertise of student graders have since been raised (Y1Feedback, 2016). This warrants further investigation as peer assessment is a fundamental component of Peergrade.

It has been found that such perceived unfairness in grading is exacerbated in cases where peer assessment is not properly explained or moderated by teachers (Wilson et al., 2015). Peergrade has addressed this by providing: online explanation videos (Peergrade, n.d.); a rubric guide (Peergrade, 2017a); a lesson plan for instruction on its use (Peergrade, 2017b); and from the perspective of fairness and redistribution of power, the facility for students to flag feedback for instructor moderation (Graham, 2017).

Despite some criticisms of peer assessment it has been found that “it is difficult to conclude that it is an inherently unfair method of assessment” (Wilson et al., 2015 p.28). Nevertheless, it is still argued that peer feedback should be emphasised “as an end to itself, or as a precursor to peer assessment that involves the allocation of grades” (Y1Feedback, 2016, p. 27).

#### **Brightspace**

Learning Management Systems (LMSs) such as Brightspace are an area of ever-increasing importance. This is due to increasing student technological literacy and time interacting with online devices. Hence educators are expected to adapt the way in which they communicate with their student cohorts. Particularly, given that TU Dublin is in the process of migrating to Brightspace in time for the next academic year.

### *Benefits*

The eLearning capabilities of Learning Management Systems (LMSs) have been seen as a great way to engage learners and indeed enhance the feedback process in the learning cycle (Leibold & Schwarz, 2015). Several such advantages have been previously noted (Brown et al., 2015; Adzharuddin & Ling, 2013):

- improving student-to-student and teacher/lecturer-to-student communication,
- allowing for more student-centred teaching,
- enabling anytime availability to course content,
- avoiding just-in-time methods to assess and evaluate student progress, and
- reducing administration around course management.

The following section will focus on literature relating to the use of the Brightspace LMS given it is the platform soon to be utilised by TU Dublin and given its potential for facilitating timely and effective feedback.

### *Further evidence from the literature*

Most up-to-date LMSs have begun to re-label themselves as virtual learning environments (VLEs). Indeed, Brightspace offers a number of options for both instantaneous feedback on knowledge related to course content and learning outcomes. Options include online self-grading MCQs as well as longer form feedback such as supporting the housing of rubrics, award/digital badge systems and assignments repository/marking.

The use of the online quiz and self-grade components of LMSs have been shown to aid students learning and deliver quick feedback (Abelló & Ruth, 2017). In this regard, Brightspace is no different to other similar software. Such an approach has been shown by Valencerina et al. (2016) to be useful in attaining mastery of a subject - even those subjects that are cumulative and mathematical in nature. They reported that mastery of a modules content can be achieved through solving several repetitive (behaviouristic view), but diverse problems; and found that the instantaneous feedback provided allowed students and teachers to gauge their understanding of the material and determine areas for improvement. Students generally felt the resource and the instantaneous nature of the feedback allowed them to develop their understanding and ultimately their marks. Indeed the majority of the students involved in this work were positive on its effect on learning (Valencerina et al., 2016).

Brightspace also offers the ability to create marking rubrics tailored for the needs of the lecturer. For instance, Zytner et al. (2015) have utilised the platform for the development of rubrics for the assessment and feedback of engineering students. Their study found that this process provided enriched feedback to the learners over a number of course components including; proposal, interim and final report writing and poster formulation.

Brightspace also has an incorporated an award or digital badge system that allows lecturers award digital certificates, badges, or both to students for suitably completed online coursework. This system has been utilised to great effect for the delivery of information literacy by Rodgers & Puterbaugh (2017). These digital badges are micro-credentials that can be issued to show competency in a particular area and adopted within module

assessment strategies. There is currently great interest in this area for the following reasons (Ziegler, 2019):

1. the effect the badges would have on retention of students,
2. the potential of the online badges to highlight the learnings and competencies that students have for prospective employers, and
3. as a way of understanding whether learning outcomes were attained at both individual and programme levels.

## Conclusion

The above facilities within Brightspace and its ability to integrate other applications such as TurningPoint and Peergrade along with their benefits provide multiple opportunities for timely and effective feedback within one VLE. Separately or together these applications can be used by lecturers to address the low approval ratings on feedback provided by students. The potential of these applications is currently available to all lecturers in TU Dublin to address feedback challenges within classes and shortly thereafter. The main findings of this project have established that:

- TurningPoint provides a student response system for face to face teaching to add interactivity and open channels for student feedback. TU Dublin currently holds a site wide license for staff to utilise and is easily incorporated in PowerPoint and students can use their smartphones or clickers to input and discuss their answers instantly. TurningPoint helps the lecturer to quantify the level of understanding of a topic in class and identify topics that require further discussion to close the gap of development proximity. Our research has highlighted that the use of TurningPoint in the classroom allows the student to add to the body of knowledge, fulfilling one of the TU Dublin Graduate Attributes, creator of new knowledge.
- Peergrade provides a platform to support peer feedback and assessment with reasonable functionality for free. Extra charges apply for additional functionality such as useful question weights that are important when conducting peer assessments. While there is much support for peer feedback in the literature, concerns have been raised on the fairness of peer assessment. Emerging software such as Peergrade addresses these concerns by providing multiple supporting material for lecturers to successfully implement the process.
- Brightspace provides several opportunities for the enhancement of student online learning and feedback. Several aspects of the software (MCQs, rubrics, digital badges, etc) have already been seen in the teaching and learning literature to facilitate student engagement, allow students gain feedback in a timely manner and even to allow lecturers to feedforward once implemented. Brightspace also allows other eLearning software to be incorporated into its platform, including the two exhibited in this work.



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## Appendix 1 - Poster Artefact

Follows on next page.



## TIMELY STUDENT FEEDBACK



This poster summarises the benefit of alternative applications that can help satisfy student expectations for timely and effective feedback within the following time frames and perspectives:

- |                         |   |
|-------------------------|---|
| <b>Student Focused</b>  | 1) within class, using “Turning Point” polling software   |
| ↓                       |   |
| <b>Lecturer Focused</b> | 2) within one to two weeks, using “Peergrade” review and assessment software  |
|                         | 3) beyond this, up to an acceptable fifteen working days (Mulliner & Tucker, 2017), using “Brightspace” virtual learning environment. |

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*“Performance on test items targeted by in-class questions increased by an average of 21%... 30% increase in attendance.”*



*Shapiro (2009)*

TurningPoint

**Turning Point:** student response technology which enables an instructor to digitalise student data both in the teaching moment and aggregated overtime; make your lessons more interactive, facilitate class discussions, guide lectures, encourage peer instruction, allow for immediate student feedback, implement learning assessment processes, report student progress indicators and lead to measurable gains in student retention, learning, degree completion; instructors pose a question to the students, students press the button on ResponseCards or mobile phones and immediately the results of the entire group are displayed on PowerPoint;



*“Students who engaged in peer-grading performed better on subsequent tests than did students who did not.”*

*Sanchez et al (2017)*

**Peergrade:** online PC software which facilitates peer assessment and the opportunity for students to flex higher-level critical thinking skills; free with limitations and up to \$5 extra/student/year for additional functionality such as question weights; yes/no, scale text rubrics with online repository; processes submissions, anonymous peer grading, feedback reactions including student flags for instructor review, plus administration and dissemination of grades for continuous assessments; robust objective rubrics and training required for successful implementation; integrates with Brightspace; alternative applications include PeerMark and Critiquelt.

*“A flexible learning environment with assessment with reporting options that allowed them (faculty) to react quickly to students slipping behind and ensure an optimum learning experience.”* (Guenther



**Brightspace:** is a modern Virtual Learning Environment (VLE) which hosts a variety of options for increasing engagement with students and ensuring learning outcomes are achieved. Permits students to access course content anywhere, anytime and on any platform. Gamification, competency based learning methods and novel smart tools and smart rules are all fully integrated and supported; thus granting lecturers the ability to give more effective and timely feedback to students.