Developing a Framework for Using Online Feedback on Teaching Effectiveness to Improve Student Learning

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Abstract
Student feedback on teaching is typically received from formal end-of-course evaluations with the purpose of giving insights into the effectiveness of a lecturer's teaching. However, such evaluations are usually summative, and the timing of their administration restricts any teaching adjustments that could have been done earlier in the course. This study investigated the development of an effective framework to obtain student feedback on lecturers' teaching effectiveness for formative purposes at suggested intervals over the duration of the course. The participating lecturers set up and conducted online student surveys via the institution's learning management system and performed data analysis to gain formative insights. The lecturers were from different subject specialisations and a mixed-method study was employed, with a quantitative and qualitative survey and semi-structured group interviews to get their perceptions. A focus group discussion was also held with a random sample of students to obtain their views on giving student feedback to their lecturers with this approach. From the descriptive analysis and content analysis of the data, we were able to propose a framework for obtaining student feedback that may inform lecturers on the efficacy of their teaching practices and enable them to enhance student learning. The findings also revealed several challenges to scaling-up the use of the framework, such as time-consuming data analysis and students doing too many surveys.

Keywords: Student Feedback, Formative Feedback, Teaching Evaluation, Teaching Practices, Learning Management System

Introduction

Higher education institutions have traditionally and typically obtained student feedback through end-of-course evaluations at the end of teaching semesters. These are typically summative in nature and Cashin (1995) notes six common elements of the evaluations: course content, instructor communication skills, student-teacher interaction, course difficulty and workload, assessment practices and student self-assessment. Scholars have also argued a case for qualitative measures in such evaluations. Harper and Kuh (2007) surmise that doing so can often reveal issues that cannot emerge through conventional quantitative means.

The main limitation for a single end-of-course evaluation is the timing of the implementation and the receiving of analysed results, which can be weeks or months after the conclusion of the teaching semester. The timing automatically excludes any opportunity for faculty to make any teaching or curriculum adjustments during the teaching semester. Lewis (2001) makes a case for mid-course evaluations similar in character to end-of-course evaluations as this will afford faculty the time to modify any course material, introduce new pedagogies or provide additional scaffolding should the need arise from the evaluation.

In order to improve the timing and quality of obtaining student feedback (SFB) to measure teaching effectiveness, Singapore Polytechnic (SP) started to review the practice and recommend enhancements to the end-of-course, or using the institution's terminology, end-of-module evaluations in 2018. However, this review was interrupted due to the COVID-19 pandemic, and it was coincidentally during this time that the institution made the transition to a new online Brightspace Learning Management System (LMS) by D2L. As the institution started to exit the pandemic, the SFB review resumed as an exploratory study which investigated how lecturers could gather student formative feedback on their teaching effectiveness through online means by using the new Brightspace LMS. The study adopted a mixed method approach and was carried out over one teaching semester with lecturer surveys, lecturer interviews and student interviews.

Student Feedback as Formative Assessment for Teachers

A widely accepted definition of formative assessment is that by the State Collaborative on Assessment and Student Standards, USA which state it to be "a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes" (Popham, 2008). The feedback can report student performance, identify gaps in understanding, and help tailor instruction to meet individual students' needs. Formative assessment is also a key component of many instructional models, such as the Assessment for Learning (AfL) model developed by the Assessment Reform Group in the UK (Black et al., 2003). The AfL model emphasises the importance of ongoing formative assessment and provides teachers with strategies for incorporating formative assessment into their instructional practices. There has been much research done over the years which suggest that formative assessment positively impacts student learning outcomes. For example, a meta-analysis of over 250 studies by Black and Wiliam (1998) found that formative assessment improved student achievement across various subjects and grade levels.

However, most formative assessment studies focus on formative assessment on learning for students and there is comparatively much less on formative assessment on teaching for teachers. Nicol and Macfarlane-Dick (2006) make the case that good feedback practice is not

only about providing useful information to students about their own learning, but it is also about providing valuable information to teachers on where to focus their teaching. Formative assessment of teachers is an approach that involves providing teachers with feedback and support on their instructional practices to improve their teaching effectiveness.

Research has shown that formative assessment of teachers can be an effective tool for improving teaching quality and student learning outcomes. This improvement was evident in a meta-analysis of over 70 studies which found that teacher formative assessment was associated with improved student learning outcomes (Kraft et al., 2018). In a study on the effects of formative assessment feedback given to teachers (Scherer et al., 2016), it was found that formative assessment of teachers can help to increase teacher self-efficacy and motivation to improve their instructional practices.

A multiple case study approach (n=10) with interviews and document investigation was carried out to gather faculty's perceptions of student feedback on teaching for formative purposes (Yao and Grady, 2005). Findings indicated that faculty are likely to improve their teaching practice based on the feedback from student evaluations, since they have the motivation for improving their teaching. However, faculty also experienced anxiety and tensions from the mandated summative end-of-course assessment. The findings from this study highlighted the potential of student feedback for improving teaching but conversely, a summative assessment might have negative implications.

A shift away from summative assessment of teaching and towards formative assessment for teaching requires investigating into how this shift can be done in an evidence-backed manner that can also be viewed positively by faculty. In their qualitative study involving focus group interviews with students, Chan et al. (2017) uncovered some important findings on how student feedback can be improved. Students reported that the timing of collecting feedback should be during the middle of the subject and they would like to know that their opinions matter, especially when a teacher has made changes in the ongoing subject based on their feedback. This finding is in line with the recommendation from Black and Wiliam (2009) who emphasised the importance of providing feedback that is specific, timely, and actionable. Another interesting finding from the study was that electronic respondents tended to give about 50% more and longer comments than their counterparts responding on paper, showing that students might potentially give more qualitative feedback through online means.

Research Questions

Due to the comparative lack of studies in the area, this exploratory study sought to investigate lecturers' and students' perceptions on formative assessment of teaching through flexible online means.

The two research questions in the study are as follows:

Research Question 1
What are lecturers' perceptions of flexible online student feedback on their teaching effectiveness for formative purposes?

Research Question 2
What are students' perceptions of providing feedback to lecturers on their teaching effectiveness via a flexible online approach?
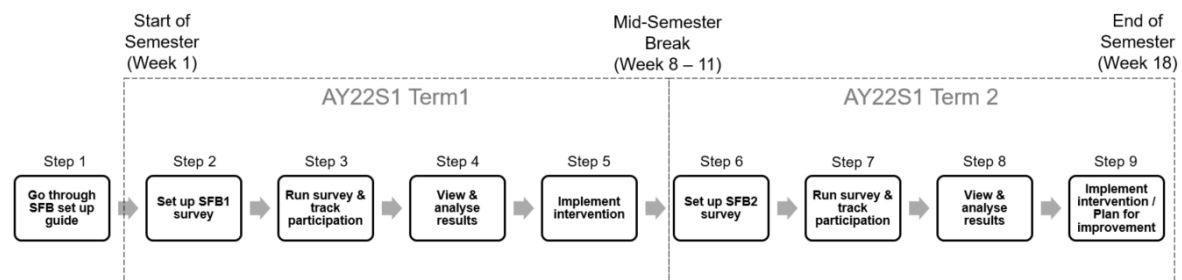
The Flexible Student Feedback (SFB) Model

Figure 1: Flexible SFB Model

The flexible SFB model adopted in the study is shown in Figure 1. The study was conducted in Academic Year 2022 Semester 1 (AY22S1), spanning eighteen weeks over two terms. Before the start of semester, the institution's Department of Educational Development (EDU) developed an SFB guide which listed instructions on how to set up and execute the SFB survey in the Brightspace LMS for lecturer participants to go through before the semester began. To ensure standardised SFB questions were used by all lecturers during the study, EDU prepared a set of three questions for the survey. Two of the questions were quantitative, addressing facilitation skill and concern for student learning, while the third was a qualitative question on how the lecturer can help improve student learning. Each lecturer was to set up the SFB for their own module and class by the start of the semester.

During Term 1, SFB1 could be carried out at any time at the lecturers' discretion. While the survey window was open, the Brightspace LMS had a feature for lecturers to view their students' responses live and track students' participation. At the end of the survey period, the Brightspace LMS generated a basic report for lecturers to analyse the results. Lecturers could then use the formative feedback received from students to modify their teaching approaches to address any issues raised. In Term 2, lecturers were asked to repeat this process as a second survey, SFB2. Depending on the time it was carried out, SFB2 results could either similarly encourage modified teaching during the remainder of the semester or be used to make improvements planning for the next run of the module in the subsequent semester.

EDU approached all 10 academic schools in SP for lecturer volunteers to participate in the study. In total, there were 27 lecturers who conducted the study in 30 modules across 90 classes, with an average of 20 students per class.

Methodology

The study was conducted using an exploratory sequential approach (Fetters et al., 2013) with the lecturers. Qualitative data was collected through semi-structured focused group interviews and analysed followed by a phase which developed quantitative items based on the qualitative data. The rationale for choosing this mixed-methods design is to explore a phenomenon before deciding which variables are needed to measure or test quantitatively (De Vos et al., 2005). The lecturers were split into two focus groups and a set of semi-structured questions developed from literature scans were prepared for each interviewer. The decision to employ focused group interviews was based on Morgan's (1997) rationale that observations can be made on a large number of interactions between participants on a topic within a given period. After the focus group interviews, the interviewers converged to perform thematic coding with the help of notes taken during the interviews.

The themes identified from the qualitative interviews would then be used to form the variables of the quantitative survey which was used to capture ratings of the lecturers' perceptions of receiving online student feedback in a timely manner through the Brightspace LMS. The survey also included open-ended questions to gather qualitative responses. This survey was then followed up with another round of lecturer focus group interviews to triangulate with the survey's quantitative and qualitative results. Concurrently, a semi-structured interview with a student focus group was carried out to provide further triangulation of results. The benefit of applying triangulation is that it enhances the quantitative research strategy through more than one way of measuring a concept (Bryman, 2016) which in this study are lecturer and student semi-structured interviews.

Results and Findings

Four themes were identified during the first lecturers' interview after SFB1 was successfully conducted and analysed.

Theme one: Flexible SFB is timely and actionable
Theme two: Lecturers have ownership of the process
Theme three: Flexible SFB is an improvement over current student feedback process,
Theme four: Implementation in Brightspace LMS.

The themes were then used to develop statements for lecturers to rate quantitatively in a survey. Figure 2 below shows the statements and results of the quantitative items of the survey and Table 1 summarises the findings from the data analysis.
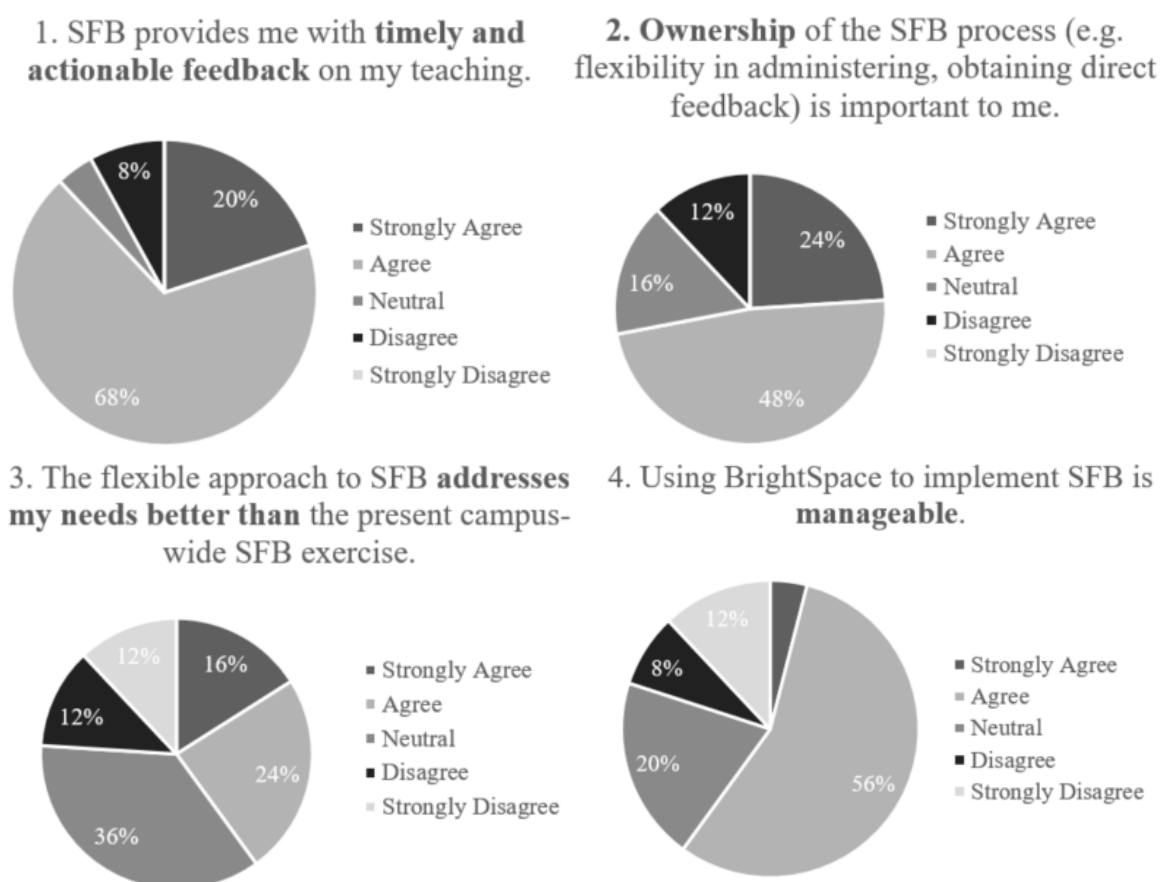

Figure 2: Results of Lecturers' Survey

Theme	Finding
1. Timely and Actionable	Most lecturers (88%) found that both SFBs provided timely and actionable feedback to make changes to address students' learning needs.
2. Ownership	Most lecturers (72%) preferred to own the SFB process vis-à-vis the flexibility of timing and questions (i.e., to set their own questions, decide when to conduct, and whether to conduct at module or class level).
3. Improvement Over Current SFB Process	Lecturers and students found value in both the new approach to SFB and the existing campus-wide SFB for distinct reasons (e.g., formative vs summative feedback, shorter vs longer survey, customisable vs standardised questions).
4. Implementation	Most lecturers (60%) found implementing SFB in the Brightspace Learning Management System manageable.

Table 1: Themes and Findings

Selected quotations from lecturers from the qualitative section of the survey and the next stage of the lecturer focus group interview were triangulated with themes one to three.

Theme one - On the flexible SFB being timely and actionable:

"We can quickly make adjustment to our teaching practices from the student feedback and come out with the most appropriate intervention to address learner's need."

"It allows me to quickly fill in the learning gaps faced by my students."

Theme two - On the value of lecturers having ownership over the process:

"The value is firstly the tailoring the questions. You want to ask something else you can do it yourself and craft the question yourself… The tailoring also comes in the timing..."

Theme three - On the flexible SFB being an improvement over the current process:

"Perhaps there may need to be two separate exercises… to ensure that one avenue provides direct feedback to the staff so that it can be seen as a formative assessment to make improvements and the other a more objective campus wide SFB to get a summative evaluation at the end of the semester…"

Triangulation of the qualitative responses in the survey and the focus group interviews identified lecturers' concerns over potential issues when looking to scale up the implementation of the flexible SFB, such as the effort in having to set up numerous surveys for a module with many classes and survey fatigue in students when expected to participate in the SFB for every module they are enrolled in that semester. It was also highlighted that a more detailed data analysis of student responses may take some time given the basic format of the report generated in the Brightspace LMS, especially if lecturers want to conduct more detailed trend analyses or make comparisons across classes. It was suggested that the time and effort to do this data analysis might not be worthwhile and may be better utilised elsewhere.

Students interviewed in the focus group emphasised that flexible formative student feedback has value only if students can see actions taken by their lecturers after feedback is given. In the event they do not see any lecturer outcomes, they would be less keen to participate in the

SFB nor take it seriously. A relevant student comment from the focus group interview is extracted:

> *"But the issue is if they don't see a… change. Then they might not feel like it's very useful…"*

> *"…it's only useful when the lecturers or the tutors actually address the issues."*

The findings from this exploratory research study are similar to the ones put forward by Scherer et al. (2016) as the results show that lecturers do recognise the value and advantages of introducing flexible student formative feedback into their teaching practice. Lecturers appreciate that such an approach affords them the opportunity to provide timely and actionable feedback to improve student learning, empowers them with the ability to decide when and in what format to collect online feedback, as well as set up and execute a feedback survey in the Brightspace LMS without much difficulty.

However, some concerns were raised regarding the implications of implementing flexible student feedback in the Brightspace LMS on a larger scale for both lecturers and students, which we believe may benefit from further exploration. It is interesting to note that lecturers appreciated having both a flexible and end-of-semester online student feedback system for varied reasons and applications, and students reported that their attitude and commitment towards giving feedback is influenced by whether they see their feedback being actively addressed. This perception identified from the student focus group interview is consistent with the students interviewed in the study on feedback from students to teachers by Chan et al. (2017).

Recommendations

In light of the study's results and findings, the researchers recommend continuing encouraging lecturers to include more student feedback for formative purposes in their curriculum to provide insights into their teaching effectiveness, and for them to use the feedback gathered to make teaching improvements to enhance student learning. An important value proposition in doing so is that it provides more freedom and flexibility for lecturers to gather timely feedback without significantly affecting their current teaching and learning practices. This type of feedback can also provide lecturers with information about their teaching beyond just subject content, such as their student-teacher interactions, classroom management strategies and pedagogical approaches.

The researchers also recommend that the existing student feedback exercise conducted at the end of the semester be retained, as an institutionalised and centralised SFB exercise still contains several benefits. Course designers, school administrators and lecturers can receive valuable overall feedback on teaching, use the data received to expand their analyses across cohorts and levels, as well as retain longitudinal data to identify and address performance trends.

Conclusion

This study is significant for several reasons. Firstly, many studies have reported the importance and practices of formative feedback that teachers give to their students but there is much less research on feedback from students to teachers. This study adds to the limited

body of research on student feedback to teachers for formative teaching purposes. Secondly, this study explores the feasibility and efficacy of collecting flexible online feedback apart from the traditional end-of-semester feedback exercises. The timing of gathering student feedback was decided by lecturers, giving them ownership and responsibility to effectively modify their teaching practices as follow-up actions. Finally, the results show the overall positive perception that lecturers have towards conducting and receiving student feedback during the teaching semester for formative teaching purposes. This study did reveal some scaling-up concerns such as student survey fatigue and data analysis efforts, but there is potential in undertaking further research on how online student feedback on teaching effectiveness can be carried out on a larger scale, and its impact on teaching and learning approaches.

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