2016

Feedbackly – A Tool for Collecting Real-time Feedback on the Student Experience.

Steve Meaney
Technological University Dublin, steve.meaney@tudublin.ie

5 Feedbackly – A Tool for Collecting Real-time Feedback on the Student Experience

Steve Meaney
School of Biological Sciences
Contact: steve.meaney@dit.ie

Abstract
In higher education institutes feedback is collected via various formal (e.g. quality assurance processes) and informal (e.g. one-to-one discussion) methods. A core distinction between these approaches is the immediacy of informal feedback set against a slower, but potentially more powerful, formal feedback mechanism. This project aimed to explore a real-time mechanism to explore the student experience, using a simple data entry point connected to a web-accessible dashboard which summarises the data. A prototype was successfully developed and deployed, and collected feedback from students across the College of Sciences and Health. The system was broadly used by students, with more than 500 users engaging with the system in the three-month trial period. The overall rating of the student experience in DIT was 3.18, with 5 as the maximum. A limitation in data collection was the requirement to remind users to participate, likely due to the system not being embedded in programmes across the College. These results are discussed in the context of the potential for a broader roll-out with an enhanced student interface.

Keywords: feedback; real time; student experience; Feedbackly

Introduction
Feedback is an essential component of the modern educational experience, and is well recognised as essential for learner success (Hattie & Timperley, 2007). The development of quality assurance processes and the greater emphasis on student as "customer" has led to a greater emphasis on the ability of a student to influence their educational environment and experience (Tight, 2013). The introduction of the Irish Survey of Student Experience (ISSE) has placed the overall student experience under additional scrutiny, particularly as the results of ISSE will be made publicly available and may influence the decision of a prospective student to attend an institute (Irish Survey of Student Engagement, n.d.).

Currently, formal feedback processes typically seek to gather feedback at a very limited number of points throughout the academic year. For example, feedback in a DIT context is typically gathered during programme committee meetings (two per academic year, generally mid-semester) as well as at the end of a module using standardised reporting templates (the Q6a and Q6c), which ultimately feed into the programmatic Q5 form. A key limitation is the timing of the data collection, most obvious in the case of the end-of-module Q6a – the module is now complete and students are providing summative feedback when it is no longer possible to implement a change or an improvement, notwithstanding the ongoing informal feedback from students. From a broader perspective, the facets of student life that are explored by the ISSE survey and which strongly influence their experience are also unavailable via current data collection methodologies. This general approach is at odds with a generation of students who, for good or bad, are culturally acclimated, via social media, to more immediate feedback and real-time interaction (Przybylski, Murayama, DeHaan, & Gladwell, 2013). It should be noted that there is some activity in this technological space. Unitu (https://unitu.co.uk/) have developed a commercial application featuring real-time feedback, which is designed to operate as a more traditional collaborative messenger system linked with a customer response management interface.

The lack of processes within the institute to collect real-time, dynamic data describing the student experience impedes the development of other systems to accept, analyse and integrate this information with other data (e.g. assessment scheduling). In the context of the student experience, this limits a HEIs ability to address issues which may impact the day-to-day academic experience of a student, a feature which is given such weighting in the ISSE survey. The overall aim

of this Teaching Fellowship was to develop a working prototype of a real-time system to collect information on the student experience using readily available tools and automated data aggregation.

Outline of Project

The design ethos underpinning this project was to make the real-time solution as simple and accessible as possible, such that the technology was available to any academic or HEI, irrespective of their computer skills. The main conceptual model of this system, called Feedbackly, is shown in Figure 5.1 below. Briefly, it consists of a Google form as a front end, which has a very simple anonymous data input form and the data collected is fed into an associated Google Sheet file. This raw data is then processed to calculate a running average of the daily response, based on the total number of responses up to that time point for that day, and the result is posted to a separate page of the Google Sheet file. These data are then plotted in real time using Infogr.am which converts the initial data into a graphical output. The individual anonymous responses and the daily aggregate are updated every minute and the output is available online.

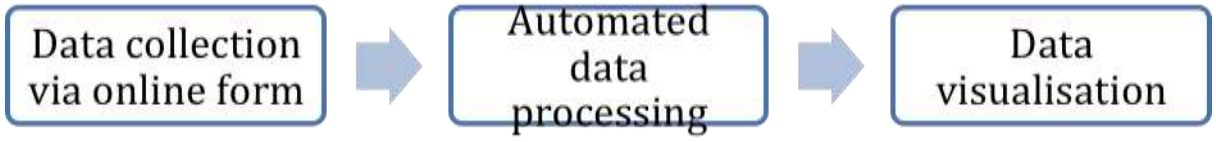

Figure 5.1: Conceptual model of Feedbackly

Note: Data is entered via a simple online form, processed and aggregated into global data that is then made available visually.

In keeping with the design ethos, the pilot student experience survey was designed to ask one simple question – How is your experience at DIT right now? – with a rating scale from terrible (one) to great (five). The simplicity of this input approach was inspired by simple swipe-based voting systems present on many smartphone apps and sought to emulate them in a simple format. Students were able to vote as many times as they liked, as each vote was anonymous and individually time-stamped. All participants were drawn from the College of Sciences and Health and invited via e-mail to class group lists.

Initially a time point of one day was selected for generation of averaged data, and a formula was developed which aggregated all data points which were greater than a given date. This provided a straightforward solution to processing the data which would be easy to implement using a template based approach. The final step was to generate visualisations of the data. A number of different platforms were explored on the basis of accessibility, cost and overall function with the online Infographic platform Infogr.am proving the best match for the requirements. A key advantage of Infogr.am was the ability to connect with data from Google Sheets in a straightforward way, and readily generate appropriate graphical outputs (Figure 5.2).

Figure 5.2: Sample graphical output of Feedbackly system

Note: Data can be visualised in both aggregate (Panel A, daily average with each column representing a single day) as well as by individual response (Panel B). The values and times of the individual responses can be displayed using a mouse-over approach. In each panel, five is the highest and represents a "great" experience at DIT. A decline in experience is noted in the pre-Christmas exam period, but there is some recovery during the early January session. This highlights the ability of a simple system such as this to generate useable data with day-to-day sensitivity.

The average score over the period surveyed was 3.18, or 64% of the maximum score of a "great" student experience. The minimum aggregated score of 2.6 was still above average, while the aggregated maximum of 3.5 indicates that there is room to improve the experience of students within the College of Sciences and Health.

One of the main limitations in the project was the requirement during the test period to remind students to participate, being cognisant of the fact that students are invited to participate in a broad range of online surveys and of the potential for survey fatigue. A planned component of the project was the development of an app to facilitate data collection. However, difficulties in organising access to simple, user-friendly systems proved difficult under the constraints of the DIT, with extensive dialogue required to organise the access to the required system(s). The pilot was thus focused on developing the data collection system. While an app may have been expected to increase accessibility,

the main driver to student participation is likely to be that this is a pilot which is not embedded in programmes at an institutional level (e.g. similar to the Q6a process). This is discussed further under the Recommendations section.

Evaluation and Conclusions

As described above, engagement remained a challenge for this pilot and regular reminders were necessary to ensure that the rate of responses was kept to a reasonable level. As the test period spanned exam sessions, it was necessary to be particularly careful in e-mail contacts with students. Given the simplicity of the system as it was finally deployed, it was felt that qualitative data collection would not be meaningful and attention was focused on the quantitative aspects in relation to use of the system by students. As shown in Figure 5.3, there was difficulty in ensuring sufficient regular interaction with the system to accumulate sufficient data for reliable analyses. There was significant variability between different days of the trial, from a high of 96 in one day to a low of zero responses (albeit typically weekends). There was no significant relationship between overall score and the number of responses on a given day.

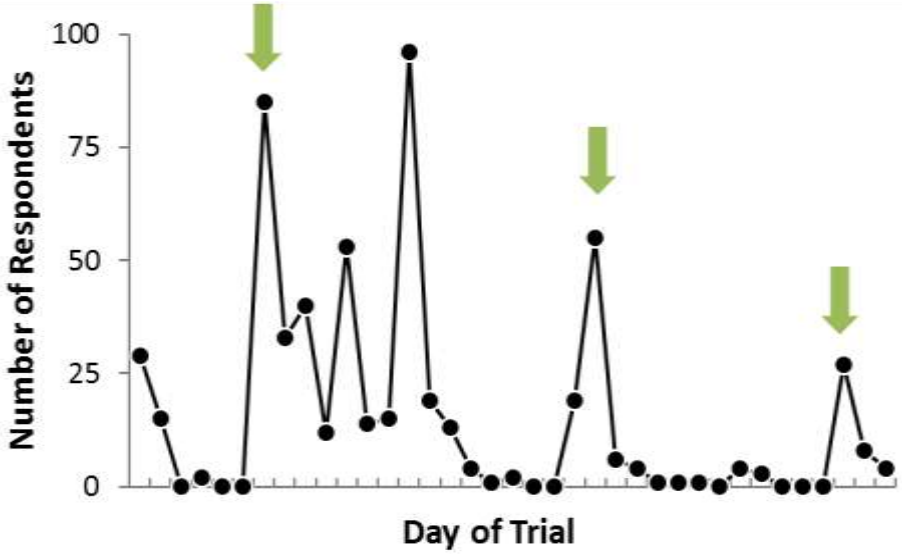

Figure 5.3: Effect of e-mail invitations and/or reminders on user response

Note: There was a relatively high variability in the number of responses logged into the system. The impact of reminder correspondence (green arrows) with the students is obvious from the spikes in the data series.

Based on the data accumulated during the pilot, it would appear that the system is a) functional and b) suitable for further enhancement and development to improve its usefulness. A significant advantage of the system is the ability to create multiple "views" of the overall data, in an accessible and easy to interpret format. There are some technical challenges in relation to mapping the data to a higher resolution (e.g. hour by hour) but these are potentially solvable. However, the ability to stratify the data at this level may be problematic from a workplace point of view, e.g. with regards to identifying a particular scheduled teaching session which is associated with a low score. The possibilities for development of this system are described in the next section.

Recommendations for DIT

The data from this pilot project indicates that the Feedbackly system may be used as a simple mechanism to collect and collate feedback in real time, suitable for presentation to staff and students of the Institute. In order to fully exploit this platform the following recommendations are made.

- Real-time feedback systems should be deployed across the institute, with a particular target on the first-year experience. This could be implemented as part of the existing extended induction session for first-year students and may contribute to retention. This cohort is also a particular target for the ISSE metrics, and so greater knowledge of the dynamics of the student experience during the initial weeks at DIT would be very valuable. Institutional and college support would be required to expand the capacity of the system and to provide training for staff (e.g. via the programme chairpersons forum).
- Consideration should be given to the development of similar processes to collate formal feedback in connection with the institute's QA processes. This would facilitate a Q6 "dashboard" where both the quantitative and

qualitative responses from the students could be visualised in a straightforward manner (e.g. using automatically generated charts and graphs for the quantitative material, and an automatically generated word cloud which would highlight the most prevalent issues from a qualitative viewpoint). The approach would thus be able to streamline the workflow for the generation of QA reports for both the module and programme level.

- The college should consider supporting the development of a discrete mobile application to support this form of feedback, and the associated workflows, to create a mechanism for feedback which would be unique in the Irish HEI sector and would be evidence of the Institute's commitment to the student voice.

One of the challenges in relation to this project was the complexity of accessing cloud-based services that operate on a subscription model. Navigating the institutional process took several months and forced a significant narrowing of the scope of the project. Stemming from this, a general recommendation would be in relation to the Institute's facilitation of innovation – serious consideration should be given to developing an ability to be more responsive and agile, and able to access new developments in both software and cloud-based technologies.

Proposed Future Work

The most immediate concern is in relation to enhancing engagement with the year one tutors across the college to implement the current system for the 2017–2018 academic year. Embedding the system at an early stage in the academic life cycle is anticipated to improve uptake and use of the system and to provide a larger dataset suitable for more extensive analysis. To further develop the system it will be necessary to create a discrete mobile app that is capable of stratifying the students registered on the system by college, school and programme, while retaining the anonymity. The concept is that a student would register with the app by selecting their programme and year, with all subsequent data collected anonymously. This would permit interrogation of data at the programme, school, college and institute level, all of which could be presented visually via a dashboard similar to that described above. This does have the challenge of possibly identifying one or more particular teaching or learning experiences attracting a particularly low score, which is a barrier to this aspect of the development. As part of this development, an enhanced user interface will be developed, which is both minimal and capable of accepting voting using push notifications of specific thematic questions (e.g. experience of exam week). The ability of the approach to collage Q6 data will also be trialled in the 2017–2018 academic year, as a proof of principle study.

Dissemination Activities

At the current state of development, dissemination of the outputs of this work are planned at a local level. Following a broader roll out in September 2017, we would anticipate presenting the approach at an educational conference in 2018.

References

Hattie, J. & Timperley, H. (2007) The Power of Feedback. *Review of Educational Research*, 77(1): 81–112. doi:10.3102/003465430298487

Irish Survey of Student Engagement (ISSE) (n.d.) Retrieved 10 April 2017, from http://studentsurvey.ie/

Przybylski, A.K., Murayama, K., DeHaan, C.R. & Gladwell, V. (2013) Motivational, Emotional, and Behavioral Correlates of Fear of Missing Out. *Computers in Human Behavior*, 29(4): 1841–1848. doi:10.1016/j.chb.2013.02.014

Tight, M. (2013) Students: Customers, Clients or Pawns? *Higher Education Policy*, 26(3): 291–307. doi:10.1057/hep.2013.2