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**Developing student feedback literacy using
educational technology and the reflective
feedback conversation**

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Abstract

While its importance for promoting learning is well-documented, feedback can only promote learning to the extent that it is acted on by learners. However, there is evidence that students often have difficulty understanding feedback or with knowing how to act on it and/or are not necessarily receptive to the feedback provided. These kinds of problems underscore the importance of including the learner perspective in any consideration of feedback practices.

This paper describes an intervention which used the 'reflective feedback conversation' and educational technologies to provide written feedback to students in University level Spanish language classes. The aim of the study was to improve learner uptake of feedback, develop student agency and self-regulation, increase alignment between teacher and student goals and expectations, and encourage learners to take a more active role in feedback processes as well as reduce teacher workload. Participants were 50 students enrolled in their third semester (pre-intermediate) of a university-level Spanish program. Data included student questionnaires, interviews with the teacher and students (n=9) and documentation of feedback and responses to feedback across a 12-week semester. Questionnaire data were analysed using descriptive and inferential statistics while interview and documentation data were analysed using thematic content analysis.

Despite issues with the technology, the findings demonstrate the potential of this approach for making feedback processes more efficient as well as for improving learning.

Keywords

Feedback, formative feedback, self-regulation, classroom-based assessment, assessment in higher education.

Introduction

Tertiary institutions in Australia and elsewhere have started to devote considerable time and effort to improving the quality of the feedback provided to learners. At the institutional level, this effort is largely motivated by ongoing pressure to improve student satisfaction ratings, where assessment and feedback are consistently identified as particular areas of dissatisfaction. Institutional responses have tended to focus on identifying and addressing student (mis)perceptions about the nature of feedback for example, by being more explicit about how and when feedback will be provided within subjects. However, another, arguably more substantive, driver is a considerable body of evidence for the potential for feedback to promote learning. This has, in turn, resulted in a significant volume of advice to teachers about how to improve the quality of their feedback practices. In the minds of many, if not most, academics the process ends once feedback has been provided. However, it is axiomatic that feedback, quality notwithstanding, can only promote learning to the extent that it is accessed, understood and acted on by learners (Sadler, 2010; Gibbs and Simpson, 2004-5). Indeed, Boud and Molloy (2013) have gone as far as to argue that if no effect on learning can be observed, "feedback has not occurred" (702).

Citation

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There are a number of reasons why learners may fail to benefit from feedback. For example, students may not share the same perceptions and orientations towards the assessment tasks as their teachers (Andon, Dewey and Leung, 2017). They may have divergent understandings about the importance and purpose of feedback (Price, Handley and Millar, 2011), have difficulty understanding feedback (Weaver, 2006) and/or lack the skills to use it productively (Gibbs, 2006; Jonsson, 2013; Poulos and Mahony, 2008). Moreover, students are not necessarily receptive to the feedback they are given. For example, in a study of postgraduate TESOL students' responses to written feedback Andon, et al (2017) identified responses ranging from outright dismissal (*'rejectionist'*) to uncritical acceptance (*'fulsome reception'*). They postulated that these responses may have been influenced, inter alia, by individual learner attributes including engagement, sense of agency, language and learning background, and orientation to the task. Ducasse and Hill (in press) came to similar conclusions, finding that while learners valued feedback per se, the value they accorded to specific instances of feedback was influenced by a range of learner characteristics. For example, detailed feedback on grammar was highly valued by learners with a mastery orientation to language learning but was considered less useful by learners more interested in communicating ideas or experimenting with style. All of these findings serve to highlight the importance of including the learner perspective in any examination of feedback practices.

Boud and Molloy (2013) have distinguished two models of feedback. In the first, more traditional, model ('Feedback Mark 1'), the teacher is viewed as the sole provider of feedback and arbiter of whether improvement has occurred. However, increasing recognition of the centrality of the learner in assessment for learning (Andrade, 2010) has prompted a shift from the focus on the teacher to a characterisation of feedback as a process in which learners occupy a more active role (Andrade, 2013). Hence, 'Feedback Mark 2' is designed to increase learner agency by:

- orientating them to the purposes of feedback;
- involving them in activities promoting self-regulation;
- developing dispositions for seeking feedback,
- providing opportunities for production of (non-assessed) work
- providing calibration mechanisms including self-assessment
- gradually increasing task difficulty
- providing 'practice' tasks
- involving them in peer feedback (Boud and Molloy, 2013:707).

This more learner-centred orientation is reflected in Henderson et al.'s (2018) definition of feedback: *"a process in which learners make sense of information about their performance and use it to enhance the quality of their work or learning strategies."* (2).

It is worth noting that, according to this definition, feedback should aim to develop students' learning strategies as well as improve learning. Self-regulation requires the development of task analysis, planning, and goal setting skills (forethought), of learning and monitoring strategies (performance), and of the ability to evaluate oneself in relation to the desired quality and standard (self-reflection) (Panadero et al., 2018; Zimmerman, 2013). Henderson et al.'s (2018) definition reflects a common assumption that formative assessment promotes self-regulation. However, a systematic review of the literature has found that the relationship is better described as bi-directional and furthermore, that, "[self-regulated learning] skills are needed to take full advantage of student involvement in assessment" (Panadero, Andrade and Brookhart, 2018:16).

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Henderson, et al. (2018) have characterised the conditions for feedback to be effective in terms of 'capacity', 'design' and (institutional) 'culture'. Capacity for feedback requires that:

- Learners and educators understand and value of feedback
- Learners are active in the feedback process
- Educators seek and use evidence to plan and judge effectiveness
- Learners and educators have access to appropriate space and technology.

Design for feedback requires that:

- Information provided is usable and learners know how to use it
- It is tailored to meet the different needs of learners
- A variety of sources and modes are used as appropriate
- Learning outcomes of multiple tasks are aligned (3).

Carless (2015) argues that *dialogic* feedback, where feedback is constructed as an ongoing dialogue between teachers, learners and peers, holds the greatest potential for improving learning. According to Espasa, Guasch, Mayordomo, Martínez-Melo and Carless (2018), feedback is more likely to be dialogic when it is:

- qualitative, individualised, and includes advice on how to improve;
- allows time to revise before submission, and
- includes peer feedback.

While also highlighting the need to adjust feedback to an individual's stage of development, Ellis (2009) has questioned the feasibility of negotiating feedback with individual learners. An approach which proposed to do just this, termed the 'reflective feedback conversation', has been put forward by Cantillon and Sargeant (2008). Developed for use in clinical education, the 'reflective feedback conversation' incorporates both dialogic feedback and self-regulated learning principles. The structure of the approach is as follows:

1. The learner evaluates their performance and identifies what where they would like improve.
2. The supervisor provides the requested feedback and asks the learner to reflect on specific ways to improve.
3. The supervisor elaborates and corrects the learner's action plan as necessary, and checks understanding.

The authors suggest that this approach encourages the development of the learners' ability to self-assess and leads to a shared view of what the agreed improvements will look like (Cantillon and Sargeant, 2008: 1294). On Author 2's advice the approach was adopted for use during clinical placements in the Bachelor of Oral Health at La Trobe University in response to workload complaints from clinical supervisors.

In this instance mobile devices are used to record assessments and a web-based e-portfolio (PebblePad™) is used to enable the documentation and tracking of 'feedback conversations' between students and multiple supervisors over time. The use of digital video allows supervisors to provide feedback on specific episodes of the performance (e.g., "at 2 mins 45 seconds you...").

As may be expected, some initial training was needed to help students transition from passive recipients of feedback to actively directing and evaluating their own learning (Carless, et al., 2011). However, evaluations have been very favourable with students reporting reduced stress around

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assessment and feedback and clinical supervisors reporting significant reductions in workload as well as in disputed results. Furthermore, the documentation of feedback conversations in PebblePad™ has enabled learning analytics to be used to identify and address any areas which appear to have been problematic for students.

While there is evidence for the effectiveness of this approach for assessing practical skills in a clinical setting, there do not appear to be any examples of its use in relation to language learning or in classroom settings. This paper describes an intervention which used a version of the 'reflective feedback conversation' (Cantillon and Sargeant, 2008) with written feedback in a university Spanish program. The intervention was prompted by the findings of an earlier study which identified a disjuncture between teacher intentions and learner responses to written feedback (Ducasse and Hill, in press). Following Knevel (2017), educational technology was used to facilitate documentation and tracking of feedback over time.

The aim of the intervention was to increase:

1. alignment between teacher and learner goals & expectations,
2. uptake of feedback, and
3. student agency & self-regulation.

It was also hoped the intervention would make the feedback process more efficient, hence reducing teacher workload.

Approach

This research was conducted with institutional ethics approval (#CHEAN B 21333-03/18).

All students (n=50) enrolled in Level 3 (pre-intermediate) of the program participated in the intervention as part of their normal classroom activities. Ages ranged between 19 and 35. The majority (n=26) were enrolled in the Bachelor of International studies, where students are required to complete a minimum of four semesters of language study. Another twelve were enrolled in the Diploma of Languages and the remainder (n=11) in a range of other course including one who was on exchange from France.

At the end of semester students were contacted via group-email and invited to complete an anonymous online post-intervention questionnaire. The email was sent by the external researcher (who is employed at another institution and not involved in teaching the students) after marks for the subject had been finalised. At the end of the questionnaire students were invited to express interest in participating in a post-intervention interview with the external researcher. (This was subject to a separate consent process).

Data included student pre- and post-intervention questionnaires, teacher and student interviews and documentation of feedback 'conversations' conducted over the course of the 12-week semester.

The pre-intervention online survey asked students about their understandings of the nature and purpose of feedback as well as their motivation for learning Spanish, perceived strengths and weaknesses, learning goals and motivation to achieve these goals.

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The post-intervention survey asked students to respond to a set of statements on a five-point likert scale about their:

1. perceptions of the usefulness of the feedback;
2. uptake of feedback;
3. perceptions of their role in the feedback process;
4. understandings of the purpose of self-assessment, and
5. experience of using the technology.

Space was also provided for comments.

Interview data comprised 15-minute semi-structured interviews with students, which they had the option of completing either face to face or by phone. Documents comprised copies of completed 'feedback loop sheets' (Appendix) and student work as well as notes from ongoing discussions between the teacher-researcher (T) and co-researcher (R) about the progress and results of the intervention. Questionnaire data were analysed using descriptive and statistics while interview and documentation data were analysed using thematic content analysis.

Intervention

The intervention involved three written assessment tasks:

1. in-class writing assessments (and optional practice tasks);
2. in-class quizzes, and
3. end of unit textbook exercises.

Table 1 shows how the practice tasks provided an opportunity for students to receive formative feedback before completing their in-class writing assessments.

Table 1. In-class and practice writing assessment tasks.

| | Practice Task | Assessment Task | Criteria (5-point scale) |
|---|----------------------------------|--|--|
| 1 | Daily routine (cat) | Daily routine (using picture prompts) | Present tense Agreement Spelling Prepositions |
| 2 | Biography (parents) | Biography (using picture prompts) | Preterite verbs Agreement Spelling Prepositions |
| 3 | What I've done in my life so far | What makes my friend an interesting person | Present perfect Vocab Expression |

For each writing task students were asked to:

1. revisit their previous feedback;
2. explain whether and how they have responded to the feedback;
3. complete the writing task;
4. self-assess against set criteria, and
5. nominate focus areas for feedback.

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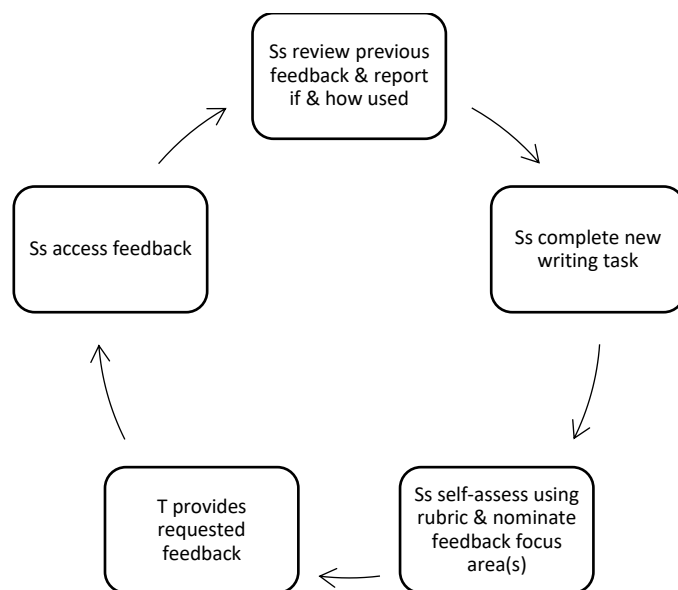


Figure 1. The feedback loop (writing task).

While specific feedback was only provided on the nominated focus areas (Fig. 1) T highlighted all errors in the writing, which learners could follow up with her if motivated to do so. A similar process was used for the in-class quizzes, where students were required to self-assess and nominate focus areas in order to receive specific feedback.

The process for providing feedback on the textbook revision exercises was slightly different; after completing the exercises students were asked to self-assess against a set of ‘can do’ statements provided at the end of each unit. T would provide solutions to the revision exercises online but students needed to attend class if they required more detailed explanations. (They also received ‘engagement’ marks for attending these classes). To aid revision students were encouraged to circle and annotate errors, rather than write in the actual corrections.

Unfortunately, the timing of the intervention coincided with a change in the institutional learning management system (LMS) with the result that the preferred technology (PebblePad™) was no longer supported by the University. The technologies used for the ‘workaround’ is outlined in Table 2.

Table 2. Technologies used for the intervention.

| Task | Technology |
|-------------------------------------|------------------------------|
| Scanning of handwritten texts | Camscanner™ (or alternative) |
| Providing feedback | Adonit™ stylus |
| | iPad™ mini |
| | Goodnotes™ |
| Uploading/importing/exporting texts | Personal Google drive |
| Notifying students | Canvas™ email |
| Storing texts & feedback | Canvas™ e-portfolio |

Due to the availability of predictive text and autocorrect on electronic devices, assessment tasks and teacher feedback were normally handwritten. However, rather than submitting hard (paper) copies as they would have done in the past, students were required to scan and upload their texts to an e-portfolio located on the LMS. T then accessed the e-portfolios, opened students’ texts in annotation software (Goodnotes™) and provided feedback using an electronic stylus. Students received an

automatic email notification once their feedback was available for access in the e-portfolio. Students had the option of seeking clarification of feedback online (in the LMS) or in class.

In summary, the intervention was designed to encourage students to take greater control of their learning, through routinely involving them in self-assessment and prioritizing their own learning needs, as well as to take more responsibility for their learning by requiring them to reflect on if and how they have acted on the feedback provided. It was also intended to make the feedback process more efficient and effective by aligning teacher feedback with learners' individual priorities. Technology was used to allow feedback to be stored in a central location so that progress could be tracked over time.

Results

Sixty students completed the pre-intervention survey. (Only 50 students actually completed the semester). Nineteen (38%) elected to complete the post-intervention survey and nine (18%) (comprising seven females, one male and one who identified as 'other') also volunteered to participate in an interview. Seven interviews were conducted by phone, two face-to-face and two by email (both had travelled overseas).

Responses to the pre-intervention survey (Appendix 1) showed that respondents were studying Spanish out of personal interest (37) for their career (20), because it was a course requirement (20), or for travel (17). (Students were permitted to select more than one response).

Alignment between teacher and learner goals & expectations

Responses suggested a general understanding that feedback should be improvement-related, as well as corrective and explanatory although they focused exclusively on the teacher's role:

Pointing out mistakes, explaining how to do it correctly (e.g., what grammar rule needs to be used). If there are no mistakes, what would make it even better.

While one respondent suggested that, to be effective, feedback should be 'constructive' but 'not overwhelming' some others characterised it as 'full correction'. Hence, as might be expected with any change that challenges traditional understandings about teaching and learning (Carless, 2011) there was some resistance to the idea of receiving feedback that was less than comprehensive. However, when T explained that it was more effective to work on a few things at a time than try to fix everything at once one of the students approached her after class to tell T how empowering this insight had been for her. Nonetheless, two of the nine students interviewed post-intervention continued to express a preference for comprehensive feedback.

It is interesting that, while the assessment criteria for the writing tasks were form (i.e., grammar)-focused, in pre-intervention responses regarding their goals for the semester, students ranked 'improving fluency and communication of ideas' (60) over improving their grammar (15) or developing their style or expression (7). In other words, there appeared to be a fundamental misalignment between learner and teacher/subject goals. While T explained her belief that Level 3 students needed to acquire more of 'the basics' before they were ready to focus on higher-level skills, these findings suggest a need to acknowledge and discuss this type of discrepancy with students from the outset.

Nonetheless, almost three quarters (74%) of respondents agreed or strongly agreed that the feedback was more useful than before, with comments confirming that it was more aligned to their individual learning goals (Fig.2).

Feedback was more 'tailored' to my needs [interview].

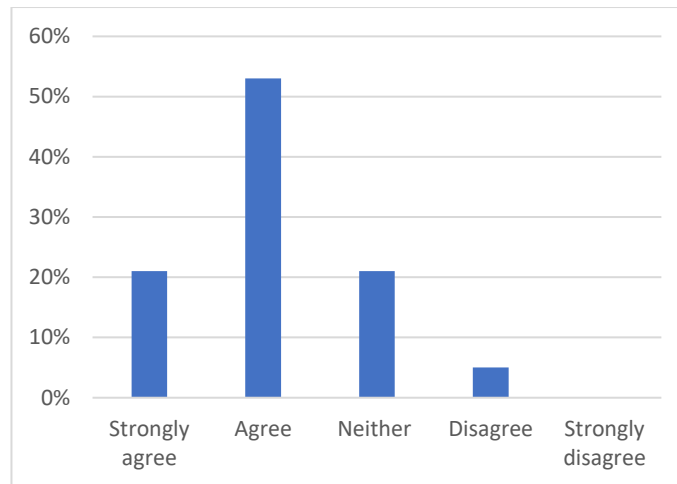


Figure 2. Usefulness of feedback.

Uptake of feedback

Given that respondents found it more useful, it is not surprising that 84% agreed or strongly agreed that they were more likely to act on feedback than previously (Fig.3).

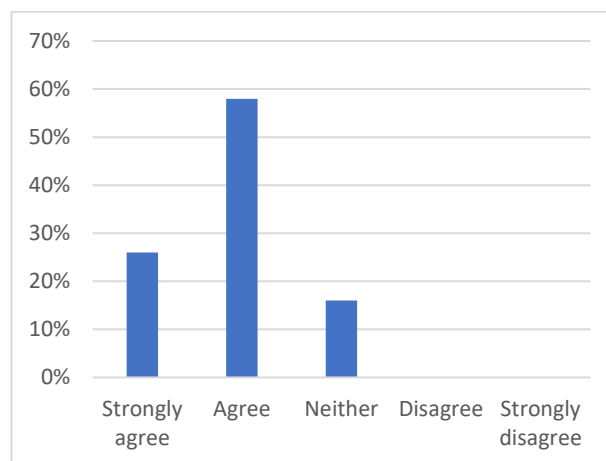


Figure 3. Uptake of feedback.

It helped clarify areas I needed to improve and spend more time on [survey].

[It was] reminder to revisit feedback and try to improve next piece of writing [interview].

However, this student admitted that she rarely acted on her feedback, writing:

I like to live dangerously [feedback loop sheet].

This resonates with a comment from a student in the previous study who admitted he only tended to act on feedback “if it’s really critical” (Hill and Ducasse, in press).

Student agency & self-regulation

It could be argued that the previous student’s characterisation of inaction as ‘*living dangerously*’ shows some awareness of agency (i.e., “I choose not to act”) and responsibility (i.e., inaction may have

negative consequences). Indeed, the majority (84%) of survey respondents stated that they took more responsibility for their learning than they had previously (Fig. 4).

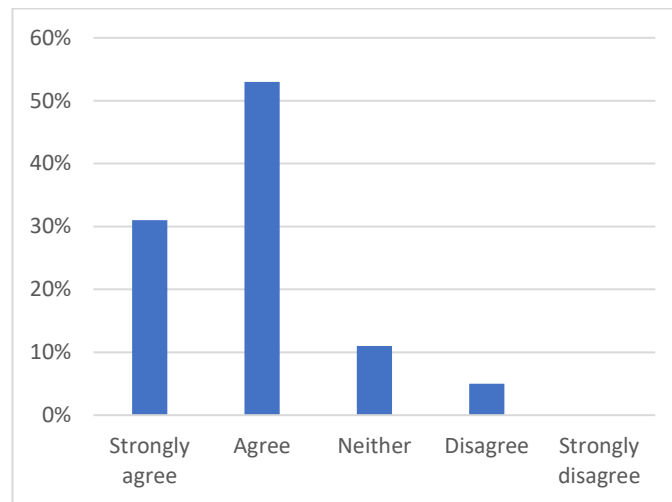


Figure 4. Learner role.

Again, this change in students' perceptions about their own agency was supported by survey and interview comments:

I understand that I have a bigger role in feedback than before and if I put in more I get more out of it

I went away and did my own research afterwards. I haven't really done that before.

Making us analyse our own work and areas where we thought needed attention held us accountable for our own mistakes and what we thought would be the best way to help ourselves work through it.

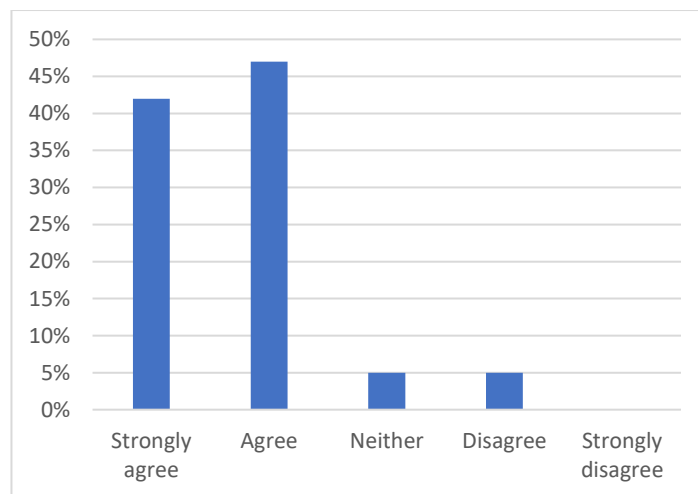


Figure 5. Purpose of self-assessment.

The overwhelming majority of respondents (91%) also reported a greater appreciation of the purpose of self-assessment (Fig.5). The increased value attributed to self-assessment was confirmed during interviews:

[self-assessment] made me more self-aware.

[self-assessment] helped us to be conscious of our weaknesses.

T also reported that, prior to the intervention, students barely glanced at their feedback before putting it away. In contrast a marked hush would fall over the room whenever work was returned while students studied their feedback and compared it to their self-assessments. It could be argued that the higher levels of engagement with self-assessment as well as increased uptake of feedback is likely to have resulted in a better understanding of the expected quality and standard and hence, improved levels of self-regulation (self-reflection).

However, unfortunately, T reported that significantly fewer students submitted drafts for feedback than in the past. There is evidence that the combination of adjusting to the new learning management system (CANVAS) and scanning technology presented a significant barrier for some students, with less than a third of respondents (31%) agreeing that the technology was easy to use (Fig.6).

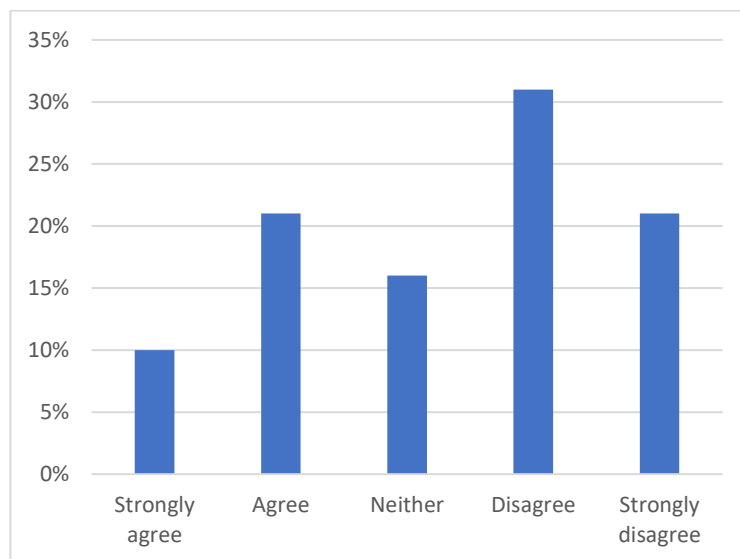


Figure 6. Facility with technology.

T reported that while some students readily adapted to scanning and uploading their work, others opted to take a screenshot or photograph and submit it as an email attachment instead. However, unfortunately, T experienced difficulty with opening some of these file formats.

Can't upload work from phone through app in Canvas [Interview].

The premise of written feedback is extremely useful, and allows me to improve so much more, I just wished I was able to get that, as Canvas did not allow it [survey].

However, At least one student was resistant to the idea of electronic marking and feedback per se.

I always prefer correction on paper than with new technologies, esp. for language learning [survey].

In contrast, responses were generally positive about the e-portfolio with 79% agreeing or strongly agreeing that it made it easier for them to keep track of their progress (Fig.7).

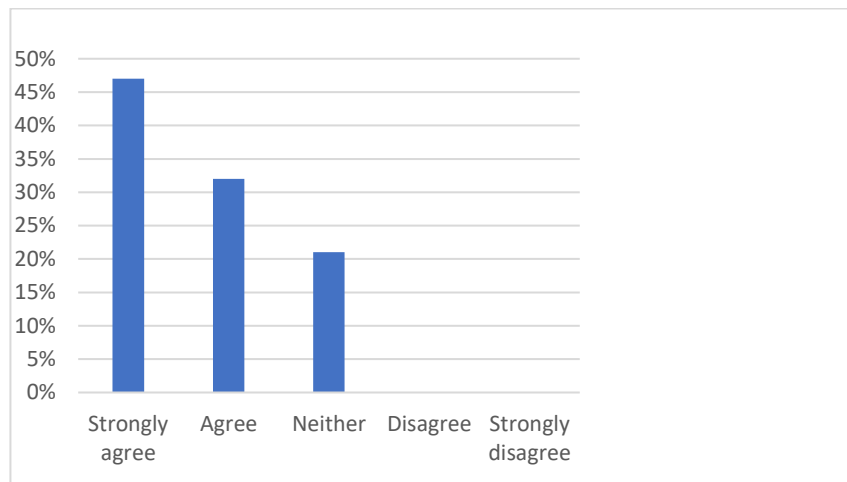


Figure 7. Tracking progress.

I completed more of the written exercises in the textbook and submitted them on Canvas for marking this year. This was influenced by knowing that I would receive feedback on that forum [survey].

I loved that I could see my progress. E-portfolio a great idea [survey].

I was able to view it all in one place [and] to go back and check on previous feedback [survey].

On the question of teacher workload, although fewer students submitted drafts, the number of steps involved in accessing, annotating and returning student work (Table?) meant that providing feedback took considerably longer than in the past. Moreover, T tended to wait until there was a 'critical mass' of submitted work before providing feedback, resulting in a slower turnaround time than previously. In summary, it was generally easier for students to submit hard copies (often written last minute on a scrap of paper) and easier for T to annotate work and return feedback prior to the intervention. Hence, Henderson, et al.'s (2018) requirement that teachers and learners have access to appropriate technology was only partially met in this instance.

Table 3. Steps in marking process.

| | |
|------------------------|---|
| Accessing student work | <ol style="list-style-type: none"> 1. open Chrome™ on ipad 2. login into rmit authentication canvas in structure online at RMIT 3. go into the student email in Canvas™ by course & search by student name 4. open the link to the student's portfolio 5. open the pdf or jpg attachment to annotate 6. take a photo screen shot 7. open the <i>Goodnotes™</i>, to edit 8. import the photo 9. save the new task with student's name |
| Providing feedback | <ol style="list-style-type: none"> 10. charge the stylus 11. check the feedback loop sheet for feedback preferences 12. provide feedback in <i>Goodnotes™</i>, |
| Returning feedback | <ol style="list-style-type: none"> 13. export all corrected work to a folder on Google drive™ 14. download annotated work in Zip™ or individually from GoogleDrive™ and move to laptop folder 15. upload back to Canvas™ and email to student to keep |

However, despite these difficulties, all but one of the nine interviewees emphatically agreed that T should continue with the approach used in the intervention. (Unfortunately, this question was not included on the online survey). Furthermore, following the perceived success of the intervention, this approach has been extended to intermediate-level classes in a number of other languages (French, Japanese, and Chinese) within the department.

Discussion & conclusion

This paper reports on an intervention using educational technology and the 'reflective feedback conversation' to develop learners' feedback literacy as well as improve the effectiveness of teacher feedback. While the study did not employ a validated self-regulated learning (SRL) tool there is nonetheless evidence that the intervention lead to increases in learner agency and self-regulation. Furthermore, the more targeted approach to providing feedback appeared to go some way towards improving uptake and reducing wasted effort in terms of unwanted feedback.

With regard to feedback literacy there is evidence that, by requiring learners to use self-assessment to direct the focus feedback and to be accountable for acting on feedback, the 'reflective feedback conversation' gave participants' a better understanding of their role in the feedback process. A small minority of respondents continued to express a preference for feedback 'on everything'. In some cases this may reflect an inability to self-assess and/or prioritise learning needs. However, in the cases of a highly motivated student the provision of such feedback would need to be contingent on demonstrating that they have acted on all aspects of the feedback provided.

The e-portfolio contributed to feedback literacy by providing a central location for writing samples and feedback where both teacher and students could track development (or lack thereof) over time. Use of the e-portfolio also appeared to increase learners awareness of and engagement with other assessment-related information which was available within the LMS (e.g., gradebook). Furthermore, the opportunity to seek clarification of feedback anonymously within the LMS permitted greater engagement from learners who may be reluctant to put their hand up in class.

Unfortunately, difficulties with the scanning technology meant a number of students potentially missed the opportunity to get feedback on draft writing tasks. Participants mostly comprised the highly engaged students, who were prepared to do whatever was necessary to improve their learning,

or the 'tech-savvy' students who adapt quickly and readily to any new technology. Possible future solutions include allowing students to submit typewritten work and/or to revert to handing in hard copies of practise or assessment tasks for feedback and for uploading to be done by the teacher. Students would still be required to go to their e-portfolio to access their feedback and monitor their progress.

While feedback was more targeted and hence more efficient to produce, issues with the technology meant that T's workload did not reduce in the way anticipated. However, this issue could essentially be resolved by providing feedback on hard copies before scanning and uploading (see above).

The current study involved intermediate level students who have a reasonable grasp of metalinguistic terminology. However, further research is required to establish the viability of this approach for students at lower levels due to their limited proficiency and ability to analyse the target language. As McNamara (2001) has argued:

We need research on the way in which an emerging metalanguage about their own performances can be developed with learners, building on their own terms for the things they notice.

The approach discussed in the paper addresses all of the dimensions of 'Feedback Mark 2' (Boud and Molloy, 2013) and 'dialogic feedback' (Espasa, et. Al., 2018) respectively, with the exception of peer feedback. Hence, future iterations should investigate ways to incorporate this element into the feedback process. It would also be interesting to investigate the viability this approach with other language skills (e.g., speaking) or languages, including character-based languages.

This study has demonstrated the potential for translating a dialogic feedback approach such as the reflective feedback conversation from a clinical, practice-based, context to a foreign language classroom. The authors hope that the results of this study will encourage practitioners in other university disciplines to consider how their feedback may be made more dialogical and hence, effective.

Acknowledgements

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