

Effects of giving writing feedback online on feedback quality and students' perception of feedback

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Abstract

Academic feedback has been found to be strongly and consistently related to achievement (Bellon, Bellon & Blank, 1992). However, when given feedback on their essays, students tend to find the feedback comments vague and difficult to understand (Chanock, 2000) and thus rarely take action on them (Nicol & Macfarlane-Dick, 2006). Digital technologies have the potential to support teachers in addressing these concerns. This study explored how feedback given to secondary three History and English Literature students through Google Docs differs in quality from traditional pen-and-paper feedback. Student perspectives about the effectiveness of online feedback were also gathered and analysed. The findings reveal that the online feedback tended to be of better quality, and students perceived it to be more useful for their learning.

Introduction

Online platforms are increasingly being utilised as important tools for active learning in Singapore classrooms (Chen, 2013; Fan & Ho, 2012; Shear, et al., 2014). The timely launch and rapid expansion of the learning management system, Google Classroom, and its integration with other commonly used applications such as Google Docs, have attracted educators who prize such platforms' interactive and collaborative features (Vallance, Towndrow, & Wiz, 2010). Additionally, Google Docs seems to have made it more convenient for students to submit, and for teachers to assess, essays that would have traditionally been written using pen and paper. Teachers are increasingly leveraging the affordances of technology to engage students and promote collaboration, as well as to monitor performance and provide personalised feedback.

This study aims to explore the effects of using Google Docs to give essay feedback in a local Singapore secondary school through answering the following research questions:

1. How does the use of Google Docs to give feedback, compared to the traditional pen-and-paper method, impact the quality of teacher feedback on argumentative essays written by Secondary 3 English Literature and History students?
2. How do students and teachers perceive the effectiveness of using Google Docs for feedback on essays compared to the traditional pen-and-paper method?

Literature Review

Effective Feedback on Students' Writing

Effective feedback on students' written assignments differentiates between specific sub-skills in writing, such as planning, sequencing ideas, using evidence and proofreading (Brown, 2004). Students respond better to positive feedback, which may come in the form of praise or constructive criticism (Hyland & Hyland, 2001; Underwood & Tregidgo, 2006). Detailed and differentiated individual feedback has also been found to lead to marked improvements in students' writing, especially when the feedback incorporates strategies for improvement (Lipnevich, 2009).

However, research also indicates that students tend to find teacher feedback on essays vague and difficult to understand (Chanock, 2000; Ferris, 1995), and thus rarely take action on the feedback given to them (Nicol & Macfarlane-Dick, 2006). Even when they do take action, this tends to be superficial correction that only affects the microstructure of the text, instead of addressing more global concerns (Beason, 1993). It is thus important that teachers provide specific and targeted comments, for in doing this they provide feedback that can 'feed forward' (Hattie & Timperley, 2007; Brown, 2004) – that is, it makes clear to the student specific actions they need to take in order to make progress on their work.

Four Levels of Feedback

In Hattie and Timperley's (2007) seminal work on the power of feedback, they posited that each instance of feedback can work at one or more of four levels. These are summarised in Table 1.

Table 1

The four levels of feedback (Hattie & Timperley, 2007, p. 87, 90)

| Level | Description | Example |
|--|---|---|
| Feedback at the Task Level (FT) | <ul style="list-style-type: none">• How well tasks are understood/ performed• Whether work is correct or incorrect, or directions to acquire more, different, or correct information• Not generalisable to other tasks | "You need to include more about the Treaty of Versailles." |
| Feedback at the Process Level (FP) | <ul style="list-style-type: none">• The main process needed to understand/ perform tasks• Relates to relationships, cognitive processes, and transference to other more difficult or untried tasks• More effective than FT for enhancing deeper learning | "You need to edit this piece of writing by attending to the descriptors you have used so the reader is able to understand the nuances of your meaning." |
| Feedback at the Self-Regulation Level (FR) | <ul style="list-style-type: none">• Self-monitoring, directing and regulating of actions• Implies autonomy and self-control• Increases students' confidence to engage further on a task | "You already know the key features of the opening of an argument. Check to see whether you have incorporated them in your first paragraph." |
| Feedback at the Self Level (FS) | <ul style="list-style-type: none">• Personal evaluations and affect (usually positive) about the learner• Contains little task-related information and is rarely converted into more engagement, commitment to the learning goals, enhanced self-efficacy, or understanding about the task | "That's an intelligent response, well done." |

This study will make use of the above framework to analyse feedback quality. Hattie and Timperley (2007) argued that feedback at the self-regulation level (FR) and feedback at the process level (FP) are powerful in terms of deep processing and mastery of tasks, but since feedback at the task level (FT) usually does not generalise to new tasks, it is only powerful when the task information subsequently improves strategy processing or enhancing self-regulation, which it too rarely does. On the other hand, feedback at the self level (FS) should be minimised, as it is ineffective in enhancing learning ([Hattie and Timperley, 2007, pp. 96-97](#)).

ICT and Feedback

Digital technologies have a huge potential for rethinking traditional approaches to teaching and learning ([Laurillard, 2008](#)), including assessment and feedback practices. One study (Bridge and Appleyard, 2008) indicated that 93% of higher-education students preferred receiving feedback on their assignments electronically rather than it being printed and distributed to them in hard copy. In another study ([McCabe, Doerflinger & Fox, 2011](#)), students reported that the use of electronic feedback increased the clarity of feedback given. [McGrath and Atkinson-Leadbater \(2016\)](#) posited that this was due to electronic feedback encouraging instructors to write more as they were no longer restricted to writing short notes on the margins of hard copy essays. Additionally, students were more likely to engage with feedback given electronically ([Parkin, Hepplestone, Holden, Irwin, & Thorpe, 2008](#)) especially if the assignment entailed a re-submission of a written draft. Other more peripheral conveniences of electronic feedback include legibility, accessibility and time-and cost-efficiency ([Bridge & Appleyard, 2008](#); [McGrath & Atkinson-Leadbater, 2016](#)), but it is inconclusive whether such factors result in deep learning.

There is also the broader argument that ICT enables the learning of contemporary communicative practices which are congruent with those outside of school, therefore better preparing learners for the real world. In fact, the vision of the Singapore Ministry of Education's ICT Masterplan 4 is to nurture 'Future-ready and Responsible Digital Learners', and digital technologies are explicitly considered to be a vehicle for the development of 21st Century Competencies ([Educational Technology Division, 2015](#)). From this perspective, the use of technology as part of assessment and feedback in the classroom serves a larger purpose and is therefore worth looking at more closely.

Methodology

This study was conducted at an all-girls secondary school in Singapore from January to October 2018, with the data collection taking place from March to April in the same year. Students from the school are generally highly motivated and academically-driven. Google Classroom was being used in a whole-school approach for improved teaching and learning at the time the study was conducted, and there was a good technological infrastructure in the school, such as the provision of wireless Internet and devices.

Participants

A total of 130 students from four Secondary 3 classes participated in the study. This level was chosen as the students were learning new subjects and skills, which made teacher feedback especially significant, and because the study was not likely to have a significant impact on high-stakes examinations at the end of Secondary 4.

Participants were chosen from the Integrated Programme (IP) and Express streams. The student profile could have differed slightly according to the stream: as the IP Curriculum typically involves

more collaborative project work, IP students might be more literate in the use of collaborative technology (such as Google Docs) as opposed to O Level students who have more exposure to pen-and-paper assignments and feedback.

Prior to the study, student participants were verbally briefed on their roles, with the same procedure followed for all classes. Participation in the research was non-obligatory and students were told that they could withdraw at any point during the study. All students, including interviewees, consented to participating in the study. For the purposes of preserving anonymity, the classes involved have been coded 3A to 3D (Table 2).

Table 2

Information about participating classes

| Class code | Number of participants (n = 130) | Subject assessed for | Stream | Teacher | Group |
|------------|----------------------------------|----------------------|---------|-----------|--------------|
| 3A | 33 | Literature | IP | Teacher L | Control |
| 3B | 31 | Literature | IP | Teacher L | Experimental |
| 3C | 25 | History | Express | Teacher H | Control |
| 3D | 41 | History | Express | Teacher H | Experimental |

Data collection and analysis

The data collection involved two main components:

1. Students' essays

Students' essay scripts, after having been marked by the teacher either through the traditional pen-and-paper method or through Google Docs, were analysed for feedback quality in order to answer Research Question 1.

2. Questionnaires and interviews

These were designed to elicit students' and teachers' perception of the effectiveness of online feedback. The data collected were both quantitative and qualitative, and used to answer Research Question 2.

Analysis of essay scripts

An essay task, either for Literature or History, was given to the students towards the end of Term 1 of 2018. The students' essay scripts were assessed by two subject teachers, one teaching Literature and the other teaching History (Teacher L and Teacher H respectively, as shown in Table 2). Each teacher marked their own classes' essay scripts and were told to give feedback according to their subject content knowledge and norms, with the only difference being the mode of feedback: in the control group classes, feedback was given using pen-and-paper, while in the experimental group classes, feedback was given using Google Docs (see Table 3).

Table 3

Assignment details for Literature and History

| Subject | Assignment details | Remarks |
|-----------------------|---|--|
| Literature in English | A passage-based question: (i) How is the relationship between Hally and the rest of the characters in this scene presented? (ii) Refer to another moment in the play where Hally makes you feel upset at how he treats people around him. | Band descriptors for the assessment of O Level Set Text Questions were used, but this set of rubrics was not attached to the assignment sheet. |
| History | A 300- to 350-word essay in response to the following question: 'Hitler's dictatorship can only be described negatively.' How far do you agree with this statement? | Rubrics were attached to the assignment instructions, both for the control and experimental groups. |

Four samples of 15 essay scripts from each class (60 scripts in total) were analysed to determine if there were any differences in feedback quality between the control and experimental groups. To randomise the sample selection, the essays were arranged in ascending order according to the class list, and the odd-numbered scripts were identified for analysis.

For all essay scripts, each feedback response was analysed. A 'feedback response' in a pen-and-paper essay script was any symbol, word or phrase written by the teacher either in-text, in the margins or at the end of the essay. In a Google Docs essay script, it was any in-text change, comment, or additional text inserted by the teacher. The analysis of each feedback response was based on two parameters: Focus and Amount (see Table 4).

Table 4

Parameters on which the analysis of essay scripts were based

| Parameter | Details | Remarks |
|-----------|--|--|
| 1. Focus | According to Hattie and Timperley (2007), each feedback response can work at four levels: <ul style="list-style-type: none"> • Task level (FT) • Process level (FP) • Self-regulation level (FR) • Self level (FS) Any feedback response may be categorized as working at one or more of the levels above. | See further explanation and examples in Table 1. |
| 2. Amount | Quantitative measures of amount: <ul style="list-style-type: none"> • Mean number of comments per script • Mean number of words per comment | Written symbols such as ticks and arrows were counted as one unit. |

Questionnaires and Interviews

Questionnaires were designed to elicit the participants' opinions on various aspects of online feedback. The student questionnaire, adapted from questionnaires designed by [Lizzio and Wilson \(2008\)](#) and [McCabe et. al. \(2011\)](#) in similar studies for tertiary students, gathered information about the students' perception of the usefulness of the feedback. The questionnaire had two parts: Part A asked the students to evaluate the effectiveness of the feedback given for the specific essay assignment during the experimental period, and Part B gathered students' insights about feedback in general. A four-point Likert scale ('Strongly Agree', 'Agree', 'Disagree' and 'Strongly Disagree') was used to provide a range of responses for a given question. The questionnaire also collected other data, such as the students' self-assessment of their IT skills and whether they encountered problems relating to account settings and Internet accessibility, which might affect their perception of online feedback.

The teacher-researchers piloted the student questionnaire with a non-participating Secondary 3 class. Some questions were rephrased for ease of comprehension following this trial. The questionnaire was administered to the control and experimental groups in April 2018, a week after the students received feedback on the assignments.

The teacher questionnaire was structured in a similar manner to the student questionnaire, with additional questions about the teachers' experience and use of online platforms. It was also piloted with three English Language teachers before being sent out to the rest of the Humanities and English Language and Literature staff.

In addition to the questionnaires, semi-structured open-ended interviews were conducted by the two teacher-researchers. As the phrasing and sequence of the interview questions were determined and agreed upon in advance, the responses were fairly comparable and complete. This also reduced interviewer effects and bias ([Cohen, Manion & Morrison, 2011](#)). However, some space for follow-up questions whenever an unexpected but relevant answer emerged was also allotted to provide for flexibility in the interview process.

The student interviews were conducted one-on-one and lasted for 10 to 15 minutes per student. The interview questions, adapted from [McGrath & Atkinson-Leadbetter \(2016\)](#), were categorised into three main components: students' perception of the feedback, their general thoughts about writing and revising, and any perceived advantages or disadvantages between handwritten and electronic feedback (for the full list of interview questions, refer to Appendix).

To ensure a fair representation, six students from each of the four participating classes were selected for the interview, with an equal number of students from the control and experimental groups, as well as from the 'Higher Progress (HP)', 'Middle Progress' (MP) and 'Lower Progress' (LP) groups for this particular assessment as identified by the subject teachers. All interviewees were allocated an identification code to anonymise their identities. The interviews were transcribed and transcripts were analysed for common themes.

Results and Discussion

This section will describe the three most prominent results: first, more process-level feedback was given on Google Docs; second, feedback on Google Docs was longer and more detailed; lastly, students valued Google Docs for ease of editing, but preferred pen-and-paper assessments closer to the examinations.

More process-level feedback given on Google Docs

The analysis of the scripts shows that the teachers gave a higher proportion of process-level feedback (FP) when using Google Docs. For Literature, 26.5% of the comments given through Google Docs were at the FP level, as compared to 5.0% traditional pen-and-paper feedback. For History, 27.9% of the comments given online were FP, as compared to 11.6% pen-and-paper. Table 5 shows the number of feedback responses given at each level of feedback.

Table 5

Analysis of feedback responses at the different focus levels

| Class | Subject | Mode | Mean count of feedback responses per script | Mean count of feedback responses categorised by focus (percentage of total count of responses) | | | |
|-------|------------|---------------|---|--|----------------|---------------|---------------|
| | | | | FT | FP | FR | FS |
| 3A | Literature | Pen-and-Paper | 42.4 | 39 (92.0%) | 2.1 (5.0%) | 0 (0%) | 0 (0%) |
| 3B | Literature | Online | 10.2 | 6.7 (65.7%) | 2.7 (26.5%) | 0 (0%) | 0 (0%) |
| 3C | History | Pen-and-Paper | 19.8 | 13.9 (70.2%) | 2.3 (11.6%) | 0.1 (0.5%) | 0.1 (0.5%) |
| 3D | History | Online | 11.1 | 8.3 (74.8%) | 3.1 (27.9%) | 0.1 (0.9%) | 0 (0%) |

Consistent with Hattie and Timperley's (2007) observations, FT is the most common type of feedback given. This is reasonable since the aim of the teachers' feedback was to evaluate how well the student performed the task requirements. Some examples of feedback at the FT level are:

"gd" (Literature, Pen-and-Paper, 3A5-7)

"Historically untrue!" (History, Pen-and-Paper, 3C17-4)

"L4/11" (History, Digital, 3D1-12, referring to the rubrics and grading criteria)

As the examples above show, FT is specific to the context of the task. One-word responses such as "gd" and "vague", as well as symbols such as ticks and crosses, indicate the correctness or incorrectness of information for the current task. The unusually high mean count of feedback responses per script for class 3A was due to the teacher's use of ticks in marking the essays.

However, one problem with FT is that it is not generalizable to new tasks. This is a disadvantage as students value feedback which is transferable to the next assignment, as the following interview

excerpt from a student participant in the control group attests:

“I think... the comments in this essay are actually limited to this particular question, so when I get a different question my answer will be different, and it won't apply... For this essay, yeah, it really helps, but for another question, like a totally different question, I don't think it'll help much.” (C-C5)

On the other hand, FP is more powerful as it focuses on the underlying processes which are transferable to other tasks. Some examples of feedback at the FP level are:

“Some solid analysis, but these need to be consistently well-substantiated and argued.” (Literature, Digital, 3B13-1)

“Be more focused and aware in your writing as you sometimes drift into story-telling descriptions which may remove [the] reader from [the] focus of your arguments.” (History, Pen-and-Paper, 3C13-20)

“This paragraph is too generic without giving enough historical bits like names and specific details.” (History, Digital, 3D14-5)

Feedback at the FP level informs the students of skills and processes that enable them to re-strategise, as in the example about needing to have “consistently well-substantiated” arguments, or direct them to search for more relevant information, as in the case of the teacher’s cue to “give... historical bits like names”. Such skills are useful for the next writing assignment and is useful to students. One student interviewee from the experimental group expressed her appraisal of the feedback given due to its transferability:

“[The feedback is] not going to go to waste because it's not necessarily specific to this essay... it's pointed out my mistakes which I might repeat in the future.” (D-12)

With more FP given on Google Docs for both subjects, it can be concluded that online assessment did facilitate a focus on process-oriented feedback, which students may find more useful due to its transferability to future assignments. However, it is also worth noting that FR was very rarely observed in the teachers’ feedback responses, whether written or online, which is an area that teachers could develop further.

Longer and more detailed feedback given on Google Docs

In terms of the amount of feedback given, the teachers were found to give longer feedback responses when using Google Docs. For Literature, each online feedback response comprised an average of 14.9 words, as compared to 2.2 words in pen-and-paper feedback. Similarly, for History, the average number of words per feedback response was 15.6 on Google Docs, as compared to 3.7 for pen-and-paper. The mean count of feedback responses and words per response for each class is shown in Table 6.

Table 6

Analysis of the amount of feedback given

| CONTROL | | | | | | |
|---------------------|----------------|-----------------------------|---------------------|----------------|---------------------------|--|
| Class | Subject | Responses per script | Symbols only | Textual | Words per response | |
| 3A | Literature | 42.4 | 21.8 | 20.6 | 2.2 | |
| 3C | History | 19.8 | 4.3 | 10.9 | 3.7 | |
| EXPERIMENTAL | | | | | | |
| Class | Subject | Responses per script | Symbols only | Textual | Words per response | |
| 3B | Literature | 10.2 | 0.13 | 7.5 | 14.9 | |
| 3D | History | 11.1 | 0 | 8.2 | 15.6 | |

All figures are mean counts.

Symbols (such as ticks and crosses) were counted as one word, as they were interpreted as denoting one unit of meaning. They were equivalent to short written comments such as “good” and “ok”, as they did not provide further details on the aspect or skill that was done well. Other examples of short and vague comments extracted from the scripts are listed below:

“excellent” (Literature, Pen-and-Paper, 3A1-20)

“Misreading here...” (Literature, Digital, 3B1-7)

“vague” (History, Pen-and-Paper, 3C11-3)

“gd pt” (History, Digital, 3D1-1)

Feedback responses which are too general or vague are rarely helpful in improving learning (Weaver, 2007). One-word comments usually fall under this category; as one student interviewee mentioned, “I’m not sure what he means by ‘vague’” (C-C3).

While length does not necessarily mean detail and specificity, it was found that for the majority of the feedback responses analysed, longer comments included more details as well. Through such elaborated feedback responses, teachers explained relationships between concepts and/or previous responses, and elaborated on faulty strategies or interpretations. Some examples of elaborated feedback responses are listed below:

“I think this paragraph would have been better if you emphasized and better pointed out the injustice/ disturbing nature of how Hally who shares a close friendship with S & W from young, can actually be curt and rude to them when he needs to be. And when he does assume an air of superiority, he can be very brusque about it.” (Literature, Digital, 3B5-3)

“This e.g. of secret police doesn't really support your argument set forth in +. [It] is better as a support to show how Hitler & [the] Nazis occupied Germany under a blanket of fear.” (History, Pen-and-Paper, 3C13-20)

“[Your] conclusion is stating your arguments again, not offering the comparative significance. Also, because your argued point on economic development [isn't] really linked to the DAF example, [I] can't assess your conclusion.” (History, Digital, 3D3-17)

One possible reason for the more elaborated feedback responses found in Google Docs is that it

was easier and quicker to type than write these by hand. Another reason could be that there was no constraint on the physical space for writing comments on Google Docs, whereas on paper, teachers are restricted to the limited space in the margins. One teacher-respondent in this study claimed that online feedback “helps me provide richer and even immediate feedback to students than just writing short notes on a restricted piece of paper” (emphasis added).

However, not all teachers who were surveyed shared this view. When asked to compare online and pen-and-paper feedback, only five out of the 17 teacher respondents agreed that online feedback saves time and only one agreed that it requires less effort. In contrast, seven teachers stated that online feedback takes up more time, and 10 out of 17 teachers stated that it requires more effort. Thus, although the scripts analysis shows that giving feedback online does seem to lead to the provision of longer, more detailed and hence more useful writing feedback, teachers do not perceive it to be a more time-efficient or convenient method. One comment from the teacher questionnaire provides an insight as to why this is so: “You cannot make assumptions that all teachers can easily switch to e-feedback. This is a tangible skill that needs to be taught step by step.” It is thus important to provide training and support for integrating technology into the feedback process.

The students, on the other hand, held the opposite perspective. They perceived online feedback as less time-consuming for the teacher. As a result, comments given online were seen to be more detailed and hence more useful for their learning. In total, nine student interviewees mentioned that they preferred online feedback due to the greater amount and detail of feedback given. Three interview extracts are reproduced below:

“[With online feedback,] teachers... give more feedback, because there’s more space and everything, but then on paper, some teachers... compile everything into one sentence, which might not be clear to us, and we don’t know how to improve.” (A-C3)

“I think handwritten feedback... might be a bit shorter compared to online feedback, because teachers don’t have a lot of time to write [comments] out.” (B-12)

“I [prefer] electronic [feedback]... since it’s more convenient to type, the teachers will tend to write more, and they don’t have to waste time writing all the comments by hand... When they do it online, you’ll be able to receive more feedback and the feedback will be more detailed... The chances of you not understanding what went wrong would decrease.” (C-C2)

However, it is also worth noting that elaborated feedback responses identified in this study mostly focused on areas of improvement instead of strengths. This is consistent with [Weaver’s \(2007\)](#) findings that positive comments tend to be vague whilst criticisms are more comprehensive. Although a majority of the students interviewed in this study appreciated the corrective feedback given them, some also claimed that they learn better through positive feedback, as the following interview transcripts show:

“I would look out for more of what I’ve done correctly, because I don’t really pay attention to the things that I did wrong – because I think I learn more from positive reinforcement rather than... the teacher telling me that I did something wrong... For example, there’s one at the back, I think it says “excellent insight” – so I’ll take into account what kinds of things the teachers generally want from me.” (A-C1)

“I feel like online, sometimes it’s harder to get a big picture of how many mistakes I made, because, on paper... from the ticks I can see that I have valid points, yet I still have things I can improve on; whereas online, you don’t really tick, in a sense – there’s more of things to improve on, rather than the things that are good.” (A-C4)

Positive feedback has been found to enhance students' interest in the task and increases the likelihood of them persisting in a challenging activity (Deci, Koestner & Ryan, 1999). It would thus be good for teachers to elaborate and give more information on what has been done well, in addition to what could be improved.

Students are concerned with ease of editing and exam preparation

Apart from the focus and amount of feedback, other themes emerged from the analysis of the interview transcripts. Most of these, such as convenience, ease of access and improved legibility with the use of online feedback, concur with other findings in the research literature. However, two concerns seem to be unique to the context of the Singapore classroom investigated in this study: ease of editing, and exam preparation.

Students considered ease of editing as one of the major benefits of receiving online feedback. In total, ten interviewees raised concerns about being able to make both minor (e.g. deleting words) and major changes (e.g. re-sequencing paragraphs) easily through Google Docs. For instance, one interviewee mentioned:

“It’s easier to... correct mistakes, for example if you wrote a paragraph and you realise it shouldn’t be your first paragraph, you can easily push it to later in your essay – but if you have a physical copy you can’t do that, you’ll have to cross it out and start from square one, and then you’ll have to write it out again.” (D-I2)

This finding is significant as online feedback seems to encourage the students to make edits on more global issues, such as the sequencing of their arguments. Online feedback is thus a particularly useful tool for process writing where editing and re-submission are recommended.

On the other hand, both the teachers and students perceived that the pen-and-paper mode of carrying out assessments is preferable as it helps with exam preparation, as the following extracts show:

“I like writing because it gives you more of the exam experience, because during exams you’re expected to write [the essay] out, so we can [gauge] how long [we’re] supposed to write, and the length of our response.” (Student Interview, A-C5)

“Traditional examinations are still pen and paper - thus electronic submissions are misleading for students who need to know how their own handwriting styles affect the amount that they are able to write under time constraints.” (Response from Teacher Questionnaire)

Such concerns affect the students' and teachers' attitudes towards the general mode of assessment, but these seemed to be independent from perceptions about feedback quality. Thus, although it is important to acknowledge that pen-and-paper feedback is perceived to be more practical considering the weight given to summative assessments, teachers should continue to leverage on the benefits of online feedback for formative assessments.

Conclusion

This study compared the effects of using Google Docs to give online feedback on students' essays with the traditional pen-and-paper method. The findings revealed that more process-level than task-level feedback, and more elaborated feedback responses, were given when using Google Docs, indicating that feedback was of better quality when given online compared to the traditional pen-and-paper method. However, there is room for improvement as feedback that promotes self-

regulation was rarely observed, regardless of the mode.

Students perceived online feedback to be more detailed and informative, and thus more useful for their learning. They also appreciated the convenience of being able to edit their writing easily online. However, they wanted to see more positive feedback in addition to areas for improvement.

These findings suggest several important recommendations for teachers in giving feedback on students' writing. Firstly, feedback – whether written or online – should focus on skills and processes which are transferable to new or more difficult tasks. Secondly, teachers should try to give feedback that challenges the students to monitor and regulate their own learning. Thirdly, teachers can help students make sense of the feedback by providing more details and avoiding vague, single-word comments. This appears to be achieved more readily through online platforms such as Google Docs, but may require training in giving 'e-feedback'. Lastly, online feedback should incorporate positive feedback in addition to areas for improvement, so as to enhance student motivation, especially for challenging tasks such as essay writing.

These recommendations could form the basis for teacher professional development in schools. For the secondary school involved in this study, the teacher-researchers developed resources in the form of post cards and stickers to remind teachers of these effective feedback practices. Schools who wish to use these resources for PD may obtain them by contacting the teacher-researchers.

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Appendix

Interview Questions

Focus points:

- the students' use of the feedback; if they understood the feedback
- their perceptions of the feedback
- their general thoughts about writing and revising
- any perceived benefits and disadvantages of electronic feedback versus handwritten feedback

Part 1: Discuss the feedback given on student's essay

| | |
|--|--|
| In-text change | Why do you think this word was added / deleted? |
| Marking annotations or marginal comments | What do you think the teacher is trying to say with this comment? How would you edit your essay in response to/ how did you address this comment? |
| Overall | What actions do you intend to take after reading the teacher's feedback? Would you/ did you revise the essay in response to the feedback given? If so, how? And how long did you take to revise? How effective is the feedback in terms of helping you to improve your writing? What other thoughts or questions do you have about the feedback given to you? |

Part 2: General thoughts on writing and revising

1. What do you like/dislike about the writing process?

Part 3: Discuss any perceived benefits and disadvantages of electronic feedback versus handwritten feedback

1. What are the advantages and disadvantages of electronic feedback?
2. What are the advantages and disadvantages of handwritten feedback?
3. Do you have a preference for electronic feedback compared to handwritten feedback? Why?