

Interactions with Feedback: A Case Study of Protocol Analysis

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ABSTRACT

This paper reports on the crucial role that written feedback has in the development of students' writing skills. Using the think-aloud method, I investigated how a student writer interacted with the feedback comments when she revised her paper. As the think-aloud method offers direct access to the thought processes of an individual, the participant, thinking aloud while responding to feedback is engaged in a process that is essentially social. This contributes to her cognitive changes via interactions with the feedback giver through written commentaries. The findings highlight two aspects of the writer's interactions with feedback. First, feedback is viewed as a social activity, and secondly, as a form of dialogic activity that promotes interaction between the writer and the reader (feedback giver). The implication is that interactions with written feedback enabled the writer to externalize her thoughts as she internalized the meaning of feedback by means of thinking aloud that leads to the development of her writing skills.

Keywords: Interactions, social and dialogical activities, think-aloud protocols, thought processes, and written feedback

INTRODUCTION

Giving feedback on students' writing is a key feature in the process of feedback (Nicol, 2010) as it can enhance students' writing development through meaningful interactions. Mutch (2003) defines feedback as a key element in "the development

and enhancement of learning" (p. 36). Feedback is also hailed as the "cornerstone of all learning" (Orrell, 2006, p. 441) and as a "key characteristic of quality teaching" (Carless, 2006, p. 219). It is thus, a means by which writers can evaluate their own progression in writing towards achieving their goals. Besides helping writers to repair errors, feedback also helps them to write (Flower & Hayes, 1981) and enables them to understand their progress (Ryan, 1997). In this way, feedback is an interaction

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platform where writers could interact with feedback givers who support and encourage writers to achieve their writing goals (Grape & Kaplan, 1996). This interaction enables writers to view how others respond to their writing.

RELATED LITERATURE

Responding to feedback has been widely researched. However, though some studies have questioned the effectiveness of written feedback on students' drafts (see Hillocks, 1982; Sommers, 1982; Truscott, 1996), others have noted the positive effects of written feedback on students' papers (for example, Ferris, 1995, 1997; Goldstein, 2005; Hedgcock & Lefkowitz, 1994; Hyland, 1990; Kepner, 1991; Leki, 1991). Research suggests that feedback is beneficial to writers as it can aid writers to write and act as a tool to draw their attention to form and meaning (Ferris, 2003; Hyland & Hyland, 2006). Revision is an integral part in the writing process "with multiple factors interacting and mediating each other, through a cyclical process within which these multiple student texts and teacher commentary texts are created" (Goldstein, 2005, p. 24), which could determine how students respond to teachers' written commentaries and use them in their revisions.

In order to get an understanding of writers' interactions with feedback and their feedback provider, we need to look at writers' thought processes via the think-aloud method (TAM). Literature abounds with data from studies done on L2 writers'

revision and composing processes derived from think-aloud protocols (Cumming, 1990; Raimes, 1985; Roca de Larios *et al.*, 2006; Roca de Larios *et al.*, 2008) and how feedback is perceived by students by looking at cognitive processes (Cohen, 1987; Cohen & Cavalcanti, 1990). However, these studies have overlooked the actual thought processes of student writers as they attend to teacher's feedback and how students interact with their feedback providers and respond to teachers' written commentaries in their revisions.

Despite the wide use of verbal protocols in the areas of cognitive processing research during the last two decades, there have been concerns that thinking aloud may concurrently lead to the issue of reactivity, that is, the actual cognitive processes may be changed as a result of verbalizing rather than giving an accurate reflection of thoughts. To a certain extent, these concerns have been refuted by empirical studies (Bowles, 2008; Bowles & Leow, 2005; Leow & Morgan, 2004) that explored the issue of reactivity that could have risen in the concurrent think-aloud. However, the results of the three studies contradict with two others carried out by Sachs and Polio (2007) and Sanz *et al.* (2009). Hence, with only five empirical studies (two of them identifying evidence of reactivity), further research apparently needs to be undertaken to validate the presence and significance of reactivity in verbalizations since it is still the primary means of examining the cognitive processes which otherwise could only be investigated indirectly.

It is important to underline that rather than assuming that the TAM offers direct access to cognitive processes of the individual, this study is open to the possibility that while thinking aloud reactivity may have set in, it might have a positive effect. By thinking aloud while responding to feedback, the writers may be engaged in a process that is essentially social, which may contribute to cognitive change – that is interacting with the feedback giver through teacher’s written commentaries and not just focusing on the task at hand, which is just attending to written feedback.

THE STUDY

This study was carried out to understand the thought processes that a writer goes through when she/he engages with written feedback and the feedback provider. These thought processes were captured by using the TAM, where a writer’s verbalizations (verbal protocols) are recorded as he/she is dealing with the feedback that is given on the written text. Data collected by means of the verbal protocols “probably provides the most direct insights into learner thought processes” (Wigglesworth, 2005, p. 99), giving direct access to the mental processes of the writer (Scardamalia & Bereiter, 1986). In this study, the main method of collecting think-aloud protocols is the concurrent method, where a writer simultaneously thinks aloud while attending to the feedback given.

Past studies have not explored the implications of student writers’ interactions with teacher’s written comments or their

feedback providers. This study, thus, attempts to answer the following research questions:

1. How does a student writer interact with teacher’s written feedback?
2. How does interaction affect revision/quality of writing?

METHODOLOGY

Setting

The case study reported here is part of a larger study that investigated the thought processes of eight writers when they engaged with written teacher feedback. The participants were all ESL postgraduate students of a writing class at a Malaysian public university. Ethical procedures were complied with and written consents were obtained from the participants. Data collected from the participants were in the form of concurrent verbal protocols, written essays and teacher written comments.

The Case in this Study

The case study reported here is Kelly (pseudonym). She is a native speaker of Chinese and English is her second language. She was enrolled in the MA programme majoring in English for Specific Purposes and considers herself to be fluent in English. She was selected for the study from a group of twenty-seven volunteers because of her proficiency in the English language and the rich verbalizations that she was able to provide for the research.

Training Sessions

Two training sessions on thinking aloud were held prior to the research. This was to enable the eight participants to familiarize themselves with thinking aloud, while executing another task at the same time. This allowed the participants to get comfortable with the idea of hearing themselves talk aloud, which was different from their usual mode of attending to teacher feedback. At the same time, the training sessions gave them the opportunity to practice verbalizing aloud while simultaneously completing sample tasks and to dissipate any anxieties the participants may have had of attending to the dual tasks of verbalizing and attending to feedback concurrently.

Data Collection

The sources of data for this study were recorded verbalizations, written texts and teacher written commentaries. Prior to data collection, the participants of the study were trained to think-aloud while performing task simultaneously. The participants were required to write an argumentative academic writing on the following writing prompt: *Success in education is influenced more by the student's life and training as a child than by the quality and effectiveness of the educational programme* (taken from Raimes, 1987). No time limit was placed on their writing and they were given the opportunity to write at their own convenience. Their completed first drafts were handed in to their lecturer for feedback. The drafts with the lecturer's written commentaries were then sealed in envelopes and handed

back to the participants for revision. The participants were instructed to verbalize and record their verbalizations as soon as they opened their envelopes at a time and place suitable to them. The participants were not restricted to any time frame to complete their think-aloud. This reflects Young's (2005) observation that if the participants have demonstrated their ability to verbalize, they should be permitted to complete their task in privacy. The participants were given three weeks to revise their writing based on their teacher feedback.

Their recorded verbalizations, original and revised drafts, as well as written teacher's feedback formed the corpus of the data that were later analyzed. Each of the participants' recordings was transcribed verbatim as a word document, which was later coded for thought processes. Each of the eight participants was then given a copy of their transcription and recording of their verbalizations to check for any discrepancies. None of the participants provided any response.

RESULTS

In this section, Kelly's interactions with teacher's feedback and her feedback provider as she attended to the feedback comments on her initial drafts are discussed. Kelly had a total of thirty points of feedback comments on her initial draft. Kelly's verbalizations indicated that she accepted all the thirty points of feedback. The findings indicated that Kelly's interactions with the feedback and her feedback provider were initiated as social and dialogical activities.

Feedback as a Social Activity

One aspect of Kelly's interactions with feedback is by creating a social context in which she attempted to communicate with her feedback provider to clarify and negotiate issues that were highlighted in the teacher's written feedback.

When Kelly engaged with teacher's feedback, she attempted to communicate with her feedback giver even though she was not physically present. Her verbalizations indicated that she opened up a channel of communication with her feedback provider to enable her to understand the meaning of the feedback given on her writing. One extended example of Kelly creating a line of communication could be seen in the following extract. Her think-aloud is a means of communicating with her feedback giver.

Provide a link. Remind your reader about your stand. (Teacher feedback)

Ugh, what do you mean? (Think aloud)

Remind your reader about your stand (Teacher feedback)

Remind my readers? That means, what you are saying is that instead of jumping straight into the subject matter, I could just like remind here or give a clue as to what comes next. Is that what you want me to do? (Think aloud)

Yeah, I think that is exactly what you want me to do. (Think aloud)

So that means, I must tell my reader what I said earlier, that school can only set a table and I should say how the previous point links to the current point (Think aloud)

Right, will do exactly that in my next draft (Think aloud)

Kelly's interaction with her feedback provider with this one point of feedback shows evidence of Kelly trying to communicate with her absent feedback provider on a social level. She then provided references to her original text and how she could revise it. This shows that she understood the meaning of the feedback that she implemented in her revised draft. In her first draft, Kelly concluded one of her preceding paragraphs in this way:

Thus saying that teachers are accountable for student achievement is unreasonable and begins a following paragraph by writing: Educational institutions also cannot teach all or everything to a child. Kelly seemed to have failed to link the two paragraphs and thus the need for teacher comments.

However, as a result of her interaction with her feedback provider, Kelly revised her writing. She concluded her preceding paragraph in this way: *...the socioeconomic status of a school had an effect on the academic achievement that was comparable to effects that are associated with the socioeconomic background of a family. She*

then began a new paragraph by linking both the paragraphs in this manner: *However, factors that contributed to these effects need to be considered...* Her revised writing shows a continuity from the previous paragraph to the subsequent paragraph through the connecting word, *however*, and the use of *these* and the repetition of the word *effects*.

In this extended example, Kelly interacted with her feedback provider by trying to communicate to understand even in the absence of her feedback giver. Hearing her own voice aloud in having a conversation with a person in absentia gave Kelly the opportunity to understand the feedback and to find solutions to the problems highlighted in the feedback.

Feedback as a Dialogical Activity

Another way in which Kelly interacted with the feedback is by engaging herself in a dialogical activity with her feedback provider. The following extract is an extended example of Kelly initiating a dialogue with her feedback provider.

Kelly, I agree with you. But you must substantiate these claims. Any evidence for these claims? (Teacher feedback)

Hmmm, evidence for claims... (Teacher feedback)

You mean like finding support or citations for what I say? (Think aloud)

Okay, but like I said earlier, I find it hard to find evidence. (Think aloud)

I know I need some references to support what I say. (Think aloud)

All right, I will look into this matter. I will find it later. (Think-aloud)

Yap, I will try my best. (Think aloud)

Will definitely include references in my revision (Think aloud)

The dialogical nature of the feedback addressed her as the writer and her abilities, and it gave an opportunity for Kelly to engage extensively with the feedback. The following extract is from Kelly's initial draft which warranted the above mentioned feedback. ... *if proper guidance is provided by parents, ...the child would be better adjusted in schools.*

As a result of this oral-like feedback, she had an on-going dialogue with her absent lecturer. Kelly understood that she had to substantiate whatever she says with proper references and agreed to follow up on her lecturer's feedback. The following extract is from Kelly's revised text as a result of her engagement in the dialogical activity with her lecturer. Kelly substantiated her claims and rewrote the part of the text this way:

Parents' positive self-perception and own experience as students also influence their child's education as they will be more comfortable to

interact and participate with their child's education (Hill & Taylor, 2004)."

The final outcome of Kelly's conversation with her feedback provider is a thoroughly revised second draft with proper references cited in text.

DISCUSSION

The findings from this case study indicate two forms of interaction. The first is in the form of social interaction and the second is by having a dialogic engagement with her feedback provider.

Firstly, Kelly interacted with her feedback giver by socially engaging in a conversation even though in absentia. Though proponents of cognitive theory claim that interactions with another individual could be controlled or removed (Ericsson & Simon, 1993), written response is a social activity (Nystrand, 1989). Hayes (1996) believes that, as writing is increasingly being defined as a communicative act, it needs a social context. Hayes' (1996) model of writing reflects this current thinking that encompasses the task environment, which includes a social environment (the audience and other texts that a writer may encounter, as well as collaborators, such as teachers and peers) and a physical environment, which takes into account the text a writer has produced so far and the writing medium. In this case, the task environment encompasses Kelly's feedback provider and the physical environment, Kelly's writing and teacher's feedback. Thus, there is a provision in the

cognitive writing model for writing to be viewed as a social interaction between the reader who is her feedback provider and the writer, in this case, Kelly, in a social context.

Smagorinsky (1998, 2001) and others working from a sociocultural perspective such as that of cultural-historical activity theory, on the other hand, suggest that verbal protocol data are not only socially contextualized, but socially constructed as well. From the socio-cultural perspective, interaction and communication promote cognitive development. In the context of writing for the audience, Kelly's feedback provider, who in turn provided feedback to which Kelly responded through a revised draft, a kind of conversation occurred. Thinking aloud contributes to this sense of communication. It is through this communicative activity that Kelly tried to understand and develop her writing when she accepted teacher feedback. In this way, feedback acted as a pedagogical as well as a social tool as Kelly engaged and interacted with feedback communicatively in the absence of her feedback provider. She tried to make sense of the feedback that was given in order to learn how to write better. It also appears to confirm the role of externalization in internalization, as Kelly voices out and interacts with the given feedback and as she attempts to understand the meaning of feedback. This happens as verbalizations become an "objective product that can be explored further by the speaker or others" (Swain, 2000, p. 102).

A second way in which Kelly interacted with her feedback giver is through dialogue.

It has been suggested that cognition and knowledge are dialogically constructed (Vygotsky, 1997) and can arise in any language learning activity (Swain *et al.*, 2002). In this study, revising texts with the guidance of teacher's feedback inevitably involved dialogical activity between the feedback giver and Kelly. What was needed for learning to occur was the presence of an expert (Vygotsky, 1986), in the form of Kelly's feedback provider to help her develop her writing by offering written comments to which Kelly responded.

The teacher's feedback, which was directly addressed to Kelly, led her to respond directly. She did this by reading aloud the written feedback as if it was a confirmation check of the feedback in a conversation. Her acknowledgement of her teacher's comments shows that communicating with her feedback giver even though he was not physically present brought about Kelly's engagement with teacher's feedback and her acceptance of it that she took into consideration when she revised. Kelly interacted with her feedback provider by responding to the written commentaries. She tried to understand the meaning of feedback, made decisions and found solutions based on the feedback, and also made changes to her writing by engaging in dialogical interaction with her absent interlocutor.

Engaging with feedback as a dialogical activity and communicative tool acts as both an environmental and a pedagogical tool (Beason, 1993) for communication on a personal level. Most of the comments given to Kelly on her first draft were informal and

dialogical in nature. The feedback giver addressed Kelly personally and gave an overview of the changes that they could attempt in lieu of the content, organization and presentation. From the verbalizations, it was evident that Kelly was more inclined to 'communicate' with the feedback that was dialogical in nature. The verbal protocols and Kelly's revised draft showed that Kelly responded to feedback by engaging in dialogue sessions with her absent feedback giver, and revised substantially based on this particular type of dialogical feedback. Kelly's verbalizations seemed to be longer when she was engaged with feedback that was dialogical in nature in comparison to the feedback that was just directive or mere indications or marking of errors or underlining of phrases or sentences on her text. The following extract is an evidence of Kelly's think aloud for feedback that was not dialogical in nature.

Check your language (Teacher feedback)

Language? (Think aloud)

Hmmm, ok. (Think aloud)

Kelly, in this study, moved back and forth constantly between teacher's feedback and her text, communicating with her feedback giver as she tried to comprehend the feedback and find solutions for the issues that were highlighted in the feedback before attending to the next feedback. Thus, Kelly was able to produce a successfully revised draft by making necessary changes guided by the teacher's feedback. This observation

matches Straub's (2000) findings, and his report that students responded more positively to written feedback when it was informal and oral in nature. The thought processes of Kelly in this study indicated that she engaged actively by 'communicating' actively and negotiating with her absent feedback giver by understanding, weighing, evaluating and justifying the feedback that was given before accepting or rejecting it. This engagement in the process seems to have worked out successfully for Kelly.

The social and dialogical forms of interaction appear to be tools of communication. Revision, seen from these perspectives, allowed Kelly to focus on the 'conversation' with her feedback provider in the forms of feedback and responses that had helped her to internalize them. In order to make sense of her writing, Kelly actively attended to her writing by interacting with the written teacher's feedback and her feedback provider. She reconsidered, reformulated, and reorganized her original texts, which at a later date, brought about an improved revised text which was audience targeted. In doing this, she externalized her thoughts. Her think-aloud is an externalization of her social and dialogical interactions with the feedback and her feedback provider with the feedback enabling the essays to be treated as objects to be considered. Kelly externalized the feedback by taking on the role of her absent feedback provider by reading the feedback aloud, to which she then responded again by externalizing her responses by voicing aloud her thoughts.

Although evidence of internalization is more difficult to find as this is not a longitudinal study, the revisions may indicate that the process of internalization is underway. As the process of internalization is supported by speech (Lantolf, 2000), the think-aloud protocols may have provided the means for the participants to attend to and interact with so as to internalize the meaning of feedback. This was then re-externalized in the form of a thoroughly revised draft by Kelly.

For example, Kelly had a dialogue with her absent interlocutor that was externalized in her protocols, which possibly showed how internalization had occurred. Kelly read the following teacher's feedback: *So, what is your argument here? Remind your reader about your stand* which prompted the following externalizations: *I guess I just have to make my stand clear. I always need to remind my reader what stand I am taking.* Kelly's externalizations of her thoughts finally ended in her internalization of the meaning of feedback, which is exhibited in the following verbalizations: *Oh dear! I guess having ideas in my head alone is not enough, I need to say what my argument is about, and write it clearly as well.* The process of internalization as a result of thinking aloud is manifested through her words when she expresses her realization that, for her, 'remind your reader about your stand' means emphasizing her argument clearly in the revised draft, where there is evidence that she briefly restated her points to support her argument.

Teacher's feedback in this study was socially constructed and acted as a channel for communication for Kelly and her feedback provider. The dialogical interaction which Kelly initiated with her absent feedback giver guided and helped her to reformulate ideas, rethink and rewrite what she wanted to say to her audience. The verbal protocols symbolized a social and dialogical interaction between the writer and her reader. In this context, Kelly communicated with her feedback giver in arriving at and understanding coming to terms with the feedback given, as evident in Kelly's interaction with her feedback provider. Kelly went through a whole process of thinking-aloud on a particular point of feedback before internalization, stemming from the dialogical interactions sets in for revision to take place. Revision, in this context, occurred as a result of these interactive actions by Kelly and her feedback provider through feedback which gave rise to three implications.

IMPLICATIONS

The first implication is that teacher's feedback is a valuable pedagogical tool in the writing process. As the aim of a written feedback is to "intervene" (Emig, 1967, p. 128), it acted as an intervention platform that encouraged Kelly to rework and rewrite her text. Kelly was able to see what was lacking (Johnson, 1988) in her initial draft as a result of written teacher feedback and she took steps to find solutions to address the issues highlighted in the feedback. Giving feedback is a valuable way of ensuring

that writers are given the 'push' to further enhance and develop their writing skills where they are presented with opportunities to evaluate and make their own decisions.

The second implication for feedback providers would be for them to encourage student writers to have more interactions with the feedback and feedback givers even if they were not present physically. Data from this case study showed evidence that Kelly was engaging with her teacher's feedback by interacting with her feedback provider through internalizing dialogue sessions. Attending to feedback while thinking aloud is not shown to be merely a mental activity that involves a writer's thought processes alone. Thinking aloud is also shown to be a dialogical activity that involves both the writer and the feedback giver in a dynamic social activity.

The third pedagogical implication is in educating writers about the think-aloud technique. In this study, what Kelly did when she verbalized was to engage in a social conversation/dialogue with her feedback provider. By externalizing her thoughts in the social and dialogical activities, she might have been able to negotiate her revision (Grabe & Kaplan, 1996) as she internalized the meaning of feedback. Ultimately, this social/dialogic engagement resulted in Kelly producing an extensively revised quality second draft.

CONCLUSION

Feedback is the medium through which Kelly interacted with her feedback provider, where she used various strategies to interact

with and be aware of her reader (Hyland, 2005). This case study has highlighted the importance of teacher feedback: it was the focal point for interaction from which ensuing activities that the participant engaged in took off. Feedback acted both as a pedagogical and social tool as the student writer interacted with feedback socially and dialogically in the absence of her feedback provider by trying to make sense of the feedback that was given in order for her to learn how to write better. Thus, the role of written teacher feedback is essential in assisting writers to develop their potential as writers.

The think-aloud protocols arising from teacher feedback are a means by which meaning is produced in cognitive perspective (Smagorinsky, 2001) or restructured in sociocultural perspective (Swain, 2006), as a result of interaction between the participant and her reader (Vygotsky, 1986). The findings suggest that by thinking aloud and interacting with written commentaries and the feedback giver, Kelly was able to develop her writing further. It also confirms the role of externalization in internalization, as verbalizations become an 'objective product that can be explored further by the speaker of others' (Swain, 2000, p. 102).

This case study has also indicated the value of externalizing internal thought processes while engaging with written feedback. It is suggested that further studies use a larger number of participants to seek an understanding of how engagement with feedback and internalization can lead to self-

assessment and ultimately to self-regulated learning.

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