Facilitating Revision Skill in L2 Writing Instruction:
The Roles of Teacher and Peer Feedback

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ABSTRACT

This paper seeks to investigate the roles of teacher and peer feedback that will facilitate revision in L2 writing instruction. Research suggests that revision is regarded as a vital stage of the entire process of writing and plays a key role to prompt L2 acquisition. Given this, writing teachers or researches have raised a growing concern about the use of teacher commentary and peer response for effective L2 learner revision. Although feedback differs in terms of types, approaches, effectiveness, goals or other aspects, it is extremely important that writing teachers make most use of teacher and peer feedback with a critical, analytical and evaluative view and sufficient understanding of the features for each feedback. The paper concludes that L2 learners will be able to foster self-revision skills and build their own autonomy in writing with the support of feedback during the interim phase of developing L2 writing skills.

INTRODUCTION

In cognitivist approaches in composition theory (e.g., Flower & Hayes, 1981), writing is seen as a cognitive problem-solving process: it is a recursive process involved in the complicated synthesis of content information, rhetorical needs, and reader perspectives (Grabe & Kaplan, 1996). The problem-solving operations primarily use cognitive and metacognitive strategies to compose until the completed text is produced. This cognitive perspective in L2 writing instruction is derived by process-based pedagogy, which was implemented into L2 writing instruction in the 1980s (Ferris & Hedgcock, 2005; Reid, 1993; Susser; 1994). Considering that process-based pedagogy focuses on the sequential process of generating ideas, managing prewriting tasks, putting them into writing, and revising the texts (Casanave, 2004; Ferris & Hedgcock, 2005), the L2 writing teacher's role can be regarded as prompting L2 students to develop each stage of the composing process (Casanave, 2004; Silva, 1990).

From a process perspective, revision is an essential part of the entire process of writing; as Murray (1978) asserts, writing means rewriting. It is an integral component of writing (Zamel, 1985), one of the stages in the recursive process of writing and is "embedded in other subprocesses of writing" (Fitzgerald, 1987: 497). In actuality, there is growing concern about the revision process and strategy training for revision among L2 writing researchers and practitioners (Ferris, 2010). In trying to acknowledge the significance of developing revision skill in L2 process-based writing instruction, the

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issue of how revision skill can be facilitated needs to be further examined. From the view that an essential element of process-based pedagogy is teacher intervention in L2 students' writing process, the teacher's goal is to encourage L2 students to internalize teacher intervention into their revision (Susser, 1994). Previous research has examined whether teacher and/or peer feedback may be potentially substantiate factors for facilitating revision skill (Beach & Friedrich, 2005; Chaudron, 1984; Hedgcock, 2005; Paulus, 1999). However, it has remained controversial whether teacher and peer feedback have a direct positive effect on improvement in revision skill (Ferris & Hedgcock, 2005).

This paper explores the issues around how L2 revision skill can be improved and the significance of developing L2 revision skill. For that purpose, issues of revision process and teacher and peer feedback on student revision are discussed. The paper is organized as follows: I will first review literature on (1) mental processes facilitating L2 revision skill from second language acquisition (SLA) theory, and revision process model, (2) features of L1 and L2 skilled and unskilled revisers, and (3) teacher and peer feedback to facilitate L2 revision skill. I will incorporate L1 revision process issues into this paper because research into instructional approaches and theory in L2 composition has paralleled progress in research into L1 composition (Ferris & Hedgcock, 2005; Grabe & Kaplan, 1996; Reid, 1993). I will then synthesize how teacher and peer feedback can contribute to quality student revision in L2 writing instruction, taking into account the revision process model. In conclusion, I will provide pedagogical implications for an effective instructional approach to help to develop revision skill in L2 process-based writing pedagogy.

THEORETICAL VIEWS OF MENTAL PROCESSES FACILITATING L2 REVISION AND REVISION PROCESS MODEL

Output hypothesis and noticing

Several studies on revision suggest that revision is involved in "both the mental process and the actual changes" (Fitzgerald, 1987: 483), and what triggers revision is a mismatch that writers perceive between their intention and execution during the composing process (Fitzgerald; Hayes, et al., 1987; Scardamalia & Bereiter, 1983; Sommers, 1980). It is thus indicated that revision is strongly related to writers' cognitive operations of problem-solving processes and entails self-regulation, which is "checking, monitoring, and evaluating of one's writing" (Suzuki, 2008: 210). Writers' involvement in mental processes through consolidating knowledge and information when producing output can lead to development in L2 acquisition (Cumming, 1990; Swain & Lapkin, 1995). Applying this view to the revising stage of composing, revision is situated as a self-regulatory process and connected to writers' mental negotiations.

With regard to a relationship between writers' cognitive processes and L2 acquisition based on SLA theory, Swain's (1985) comprehensible output hypothesis focuses on the roles for output in L2 learning process, which postulates that L2 writers' efforts to produce language may consciously prompt them to notice linguistic problems with their production. The use of cognitive process may lead to promoting their L2 acquisition. Within the theory, three functions of output in L2 learning are defined; (1) the noticing / triggering function, noticing the difference between intentions and the

conventions of the target language (noticing the gap) or confronting difficulties in expressing the target language (noticing the hole); (2) the hypothesis-testing function, modifying output in response to feedback; and (3) the metalinguistic (reflective) function, using the target language to reflect on the production of language by others or the self (Swain, 2005; Swain & Lapkin, 1995). This hypothesis can be applied to the view that L2 output can play a significant role in triggering noticing in L2 writers during revision. Similarly, Cumming (1990) proposes that L2 acquisition through producing comprehensible output resembles the process of L2 learning through verbal interaction; negotiation of meaning during L2 composing through verbal interactions are involved in the process of clarifying ideas and modifying linguistic problems. Furthermore, her argument claims that as metalinguistic and ideational thinking processes, in which writers engage in mental processes on the language used/on language use while simultaneously thinking of the ideas in their texts, can be improved in L2 composing with self-regulation, it seems that such cognitive processes affect L2 learners' texts and their progress in the quality of their subsequent writings.

Related to this, a few empirical studies have reported how noticing is related to revision and feedback processing and the effect noticing has on facilitating revision. Reformulation, defined as teachers rewriting L2 writers' texts in ways that maintain the original ideas (Qi & Lapkin, 2001), is a potential approach to promote noticing. Qi and Lapkin's (2001) idea of reformulation in revision practice is to provide optimal conditions to encourage L2 writers to notice textual and sentential problems covering cohesion, grammar, vocabulary, register, rhetorical and discourse conventions. In their study, L2 writers were asked to produce think-aloud protocols of the process of noticing the differences between the reformulated texts and their original drafts in their comparisons. A week after the task of producing noticed language-related problems, they then revised their own drafts using only their original drafts and without access to the reformulations. They found that most of the language-related noticing that they had made aided in developing their revisions. Following their study, Sachs and Polio (2007) also obtained similar findings; L2 learners' use of metalanguage and provisions of noticing for the reformulations through thinking-aloud were related to the accuracy of their subsequent revisions.

Revision process model

Conceptual models of revision can be divided into two categories: one is a product-based model of taxonomies that represent outcomes of revision. The other is a process-based model of mental representation that describes the revision process. Faigley and Witte's (1981) model is an example of the former, presenting a taxonomy of revision changes that is categorized according to the features of the revision strategies (Appendix 1). Models of mental representation have been constructed by Scardamalia and Bereiter (1983) and Hayes et al. (1987). Following Scardamalia and Bereiter's (1983) model, covering parts of the composing process called COD process (compare, diagnose, operate), Hayes et.al (1987) designed a more elaborated model which attempted to include different things observed in writers' revision process (Appendix 2). I will review them in more detail below.

Their model has two major components; "processes", which revisers actually enact and "knowledge", which affects these processes and is the outcome of their

actions. For the sub-processes, revisers need to have a "task definition", in which they define the goals of the task and examine text features. The "evaluation" process applies the purposes and criteria based on the revisers' task definition to texts and plans, resulting in defining the text problems. "Problem representation" is the output of the evaluation process where revisers go through a continuum from "detections" to "diagnoses". Finally, in the "strategy selection" phase, two types of strategy are used: one is to change or manage the revision process by "ignoring" the problem, "delaying" action, or "searching for" more information to specify the problem, and the other is to make actual modifications to the text by rewriting or revising the text.

FEATURES OF L1/L2 SKILLED AND UNSKILLED REVISERS

L1 skilled and unskilled revisers

As I stated above, L2 composition studies have been influenced by their L1 counterparts. I will thus present the features of L1 skilled and unskilled revisers to allow for clear representation of the characteristics of L2 skilled and unskilled revisers. Within the revision process model presented previously, how L1 skilled and unskilled revisers make successful revisions is first presented below. L1 skilled revisers consider revision as a recursive process (Sommers, 1980) and regard the task as discovering content, structure, and voice in task definition (Flower et al., 1986). In the evaluation stage, they are able to handle the conventions of discourse (Sommers, 1980) and attend to readers' perspectives in order to communicate to them (Hayes et al., 1987). Along with having readers' perspectives, they continually monitor themselves as writers, evaluating both their text and their writing strategy (Flower et al., 1986). In problem representation, they are likely to detect both local and global text problems more easily and devote a substantial amount of time to diagnosing global text problems. More specifically, they are considered to be aware of the problems associated with readers' expectations, purposes, coherence between paragraphs, and have the rhetorical knowledge to solve them (Hayes et al., 1987). Following that, they make revisions at all levels based on a holistic perspective while their emphasis on revision is at the sentence level (Sommers, 1980).

Conversely, L1 unskilled revisers treat the revision process as simply the act of rewording (Sommers, 1980). They feel the difficulty of setting goals for revision and they do not pay attention to their task definitions (Hayes et al., 1987). In the evaluation stage, they have trouble making a clear representation of either plan or text (Flower et al., 1986) and they lack a sense of reader-awareness when rethinking their purposes of communication in the text (Sommers, 1980). In the stage of problem representation, they have difficulty in locating text problems (Hayes et al., 1987) and in displaying a clear representation of the text (Flower et al., 1986). They limit themselves to diagnosing sentence units without attending to whole-text problems (Hayes et al., 1987) and they make surface changes to the text for the most part (Faigley & Witte, 1981). Furthermore, they have limited strategies for revision, often simply deleting and replacing words as their strategy selection (Flower et al., 1986; Hayes et al., 1987; Sommers, 1980).

L2 skilled and unskilled revisers

As well as research on L1 revision process, similarities between L1 and L2 counterparts have also been presented as well. In Hall's (1990) study comparing L2 skilled students' revision process in their L1 and L2, some similarities between them were found in terms of linguistic and discourse aspects and the stages of L2 student revising. Considering the revision process model given above, they recognize the significance of making meaning-level revisions and taking into consideration into readers' views in the initial stages of revision, and prioritize making global changes in order to clarify their intentions (Zamel, 1983). For example, rethinking their ideas globally and putting them in place during their revision, they returned to local, grammatical problems and attended to them. Those features of L2 skilled revisers may result from the assumption that, as Cumming (1990) states, L2 skilled writers may be more likely to utilize metalinguistic analyses of and ideational thinking about their L2 than their unskilled counterparts.

As to the features of L2 unskilled revisers, the unskilled reviser in Sze's (2002) study did not revise unless required to do so by teachers due to lacking a clear purpose and significance to revise in task definition; consequently, he seldom reread for revision. The unskilled revisers attended to local text problems and rarely made revisions that might lead to altering the meaning in problem representation (Raimes, 1985; Sze, 2002; Zamel, 1983), because they may have had trouble improving a sequential train of thought in terms of discourse (Zamel, 1983). Additionally, the unskilled revisers struggled with having no explicit idea of what and how to revise in their strategy selection. For example, use of a limited number of detection and correction strategies for discourse level revisions (Kobayashi & Rinnert, 2001), and rewriting the problematic parts ignoring teacher feedback (Sze, 2002) were found. The unskilled reviser in Sze's (2002) study left the problems unsolved, instead of incorporating teacher feedback into his revision due to being unable to diagnose and deal with them. In addition, the unskilled revisers simply copied their first drafts without reconstructing them (Sze, 2002; Zamel, 1983).

TEACHER AND PEER FEEDBACK TO FACILIATE REVISION SKILL

Teacher feedback

I will move onto the issues of teacher and peer feedback in facilitating L2 student revision. While the primary purpose of giving teacher feedback to student writing is to help students to improve the quality of their writings, and students cannot develop their revision skill without effective teacher feedback (Beach & Friedrich, 2005), the issue of the effectiveness of teacher feedback on student revision has been contradictory among teachers and practitioners (Ferris, 2010; Ferris & Hedgcock, 2005). This subsection overviews several empirical studies on the characteristics, effects and problems of written teacher feedback.

There have been several empirical studies investigating the relationship between types of teacher feedback and improvement in student revision. Conrad and Goldstein (1999) examined the relationship between the characteristics of written teacher feedback and students' revision process in an advanced ESL writing class. The students wrote

multiple drafts responding to text-specific teacher written feedback, focused on global matters. The results indicated that successful revision was attributed to the following five types of feedback; (1) declaratives rather than questions; (2) for declaratives, those that claim necessity of revisions or make suggestions rather than those that characterize the texts; (3) for questions, yes/no questions rather than WH questions; (4) direct than indirect wording, and; (5) description of revision strategies. In addition, they tend to revise successfully in response to solving problems identified in written teacher feedback rather than making explanation, analysis, and explicitness. It appears that the factors that lead to successful revision are strongly related to the type of revision problems.

Some studies have highlighted the effect of making revision in response to teacher feedback on improvement in the quality of their writings. Semke (1984) claimed that direct correction does not necessarily help to improve L2 students' writing accuracy, fluency, nor linguistic competence. The result of her study was echoed in Robb et al.'s (1986), which examined whether direct feedback has a salient effect on EFL Japanese college freshmen's subsequent writings. Divided into four types of teacher feedback; (1) the correction; (2) the coded; (3) the uncoded; (4) the marginal, the students were asked to revise according to teacher feedback. The results showed that direct feedback did not necessarily ensure improvement in accuracy, which implies that student progress is independent of types of feedback and feedback does not directly affect student revision unless it requires revision through realizing the discrepancies between the feedback and the original drafts. Likewise, Fathman and Whalley (1990) investigated the effects of form and/or content-focused indirect teacher feedback on improvement in revision of students in intermediate ESL college writing courses, assigned to four groups receiving; (1) no feedback; (2) grammar feedback; (3) content feedback; and (4) grammar and content feedback. The form of the feedback was simply underlining locations of errors (indirect feedback) while the content feedback was not text-specific but general comments. All of them were asked to revise regardless of the type of feedback. The results showed that the form feedback group made significant improvements in formal accuracy while all groups showed significant progress in the content of their revisions. Most of the students receiving no feedback obtained higher scores on form and content of their revisions than the original drafts. Form and content feedback thus appears to contribute to improving student revisions and indirect feedback increased formal accuracy while general comments helped to make better revision for content. It is suggested that revision itself leads to developing writing quality and skill even in the absence of teacher feedback. Ashwell (2000) and Chandler (2003) obtained similar findings to Robb et al. (1986) and Fathman and Whalley (1990), showing that students relied on form feedback more heavily than content feedback in revising. It is overall suggested that giving feedback can have positive impacts on improvements in formal accuracy while content can be developed simply by revising.

Despite several studies showing short-term effectiveness resulting from teacher feedback (e.g., Fathman & Whalley's study in 1990), it cannot be concluded that it is a useful tool for improving subsequent writings because successful error reduction during revision cannot provide evidence for improvement in the quality of subsequent writings (Truscott, 1996; Truscott & Yi-ping Hsu, 2008). However, Storch and Wigglesworth (2010) have shown that extensive involvement in processing corrective feedback and

analyzing the nature of errors resulted in high level of uptake and retention in the long term. In contrast, Chandler (2003) investigated the long-term effects of teacher feedback on subsequent writings, specifically looking at: (1) the effectiveness of students' error correction with teacher feedback to improve grammatical and lexical accuracy on subsequent writings; and (2) the validity of using correcting all the errors (direct) or indicating location of errors (indirect). Her findings suggest that simply giving teacher feedback without requiring students to revise cannot help to improve accuracy and are equivalent to giving no teacher feedback, and furthermore direct correction results in the greatest improvement in accuracy for revisions and subsequent writings, while indirect feedback may be an alternative to direct correction and have advantages in promoting student motivation because it may encourage students to gain more attainment of learning.

Researchers have investigated the degree of incorporation of teacher feedback into student revision, preferred types of teacher feedback and attitudes toward teacher feedback. Ferris (1997) examined effectiveness of teacher written feedback on student revision and the degree to which certain types of feedback affect revision processes of the students enrolling in ESL freshman writing courses, finding that marginal requests for information, requests, and summary of grammar comments affected student revision the most substantially, while questions or statements to provide information were less influential on revision, and positive comments never resulted in substantial revision. The revisions improved more when given longer and more text-specific comments than when given shorter and general ones. Additionally, some attended to teacher feedback for making effective revision while others sometimes ignored or avoided teacher feedback. Similarly, Hyland (1998) examined the relationship between teacher written feedback and student revision process and strategies focused on the perceptions, expectations, and attitudes of six students enrolling in an English proficiency program at a university in New Zealand. The study indicated that students' use of teacher feedback in student revision vary due to factors such as their needs, preferences, affective matters, and learning experiences. For example, while over 80% of the total revisions made by a Thai student were teacher-initiated, a considerably lower percentage of a Japanese student's were. Similarly, Conrad and Goldstein (1999) also claimed the importance of considering individual variables such as contextual and individual factors in unsuccessful revision processes.

As overviewed in this subsection, empirical studies of teacher feedback primarily have three classifications into three: (1) teachers' actual involvements to provide commentary to student writings, (2) short- and long-term effectiveness of teacher commentary on student revision, (3) student attitudes or reactions toward teacher feedback (Ferris & Hedgcock, 2014). Given this, research argues that it is significant for L2 teachers to recognize how teacher feedback on student writing should be constructed for improvement in their writing. However, the descriptions of those three issues regarding teacher commentary have been relatively rare. Research that explicitly shows the positive effect of teacher feedback on student revision also has been scare or not virtually existed (Ferris & Hedgcock, 2014, Knoblauch & Brannon, 2006). In spite of being lack of comprehensive research on teacher feedback for successful student revision, there have been some clear findings for future empirical examinations. For example, as some research has reported that teachers use "a multiple-draft, response-

and-revision approach to composition instruction" (Ferris & Hedgcock, 2014: 239), they try to give feedback to early drafts pointing out a variety of issues (Ferris & Hedgcock, 2014, Ferris, Liu, et al., 2011). In addition, L2 students are likely to take teacher feedback more seriously and incorporate it into their subsequent writings (Ferris & Hedgcock, 2014; Ferris, Liu, & Rabie, 2011). In contrast, there have been more substantial studies on student views or attitudes towards teacher feedback than the other related areas of work. Specifically, students value teacher feedback and favor constructive suggestions in making revisions, whereas they are reluctant to receive teacher commentary including some problems on their feedback such as illegibility, confusing remarks or offensive climates (Ferris & Hedgcock, 2014).

Peer feedback
The rationales behind peer feedback are as follows: the development of intellectual growth is shaped by social interaction within the zone of proximal development (ZPD) (Vygotsky, 1978); and writing is made not individually but collaboratively between writers and readers in social contexts through the comprehension of rhetorical situations and the feedback of readers (Halliday & Hasan, 1989; Hyland, 2009; Mittan, 1989). While writing is shaped by these social-oriented views as well as the cognitive theory of writing process stated above (Hyland, 2009), the effectiveness of peer feedback on student revision in the L2 context has been unclear (Ferris & Hedgcock, 2005). This subsection presents several empirical studies on collaborative interactions during peer feedback, which discuss the effectiveness of peer feedback on student revision, the role of training, the incorporating behaviors and attitudes towards peer feedback.

Previous research has examined the effectiveness of peer feedback on student revision in comparison with teacher feedback. In Chaudron's (1984) study, peer feedback was equivalent to teacher feedback with regards to improvement in revision. Similarly, Hedgcock and Lefkowitz (1992) examined whether native speakers of English in a university French course receiving oral/aural collaborative peer review sessions revised as unified, organized, and grammatically accurate drafts as those given teacher written feedback. Their findings showed that the peer feedback group outperformed in terms of content, organization, and vocabulary, whereas the teacher feedback group performed better in the area of grammar. This indicates that the peer feedback group attended to content and organization globally while the teacher feedback group paid more attention to the grammatical accuracy of their texts.

Considering that peer feedback encouraged students to pay more attention to content, Mendonça and Johnson's (1994) study provides with a reason for it by presenting the contrasting ways in advanced ESL university students' peer negotiations between writers and reviewers; the writers made explanation of content most frequently while the reviewers asked for explanation of unclear points most often. They have maintained that peer interactions can allow both writers and readers to reciprocally demonstrate the sophistication in the content of their writings and utilize the information for their revisions. In more depth, Guerrero and Villamil's (2000) microgenesis approach of scaffolded assistance in L2 student revision revealed that mediated peer interaction was characterized by a complex, irregular and dynamic process of development within the ZPD. Their microgenetic approach focused on moment-to-

moment changes during peer feedback and seemed to lead to a greater understanding of how L2 learners' respond to peer feedback when doing revision.

Other studies have shed light on the effects of training peer feedback. Stanley (1992) investigated the validity of lengthy elaborate coaching of peer feedback in ESL writing classrooms. The coached groups received a variety of extensive-period training; learning the genre through student modeled essays, analyzing the nature of successful peer feedback sessions, experiencing potential difficulties in peer feedback through role-playing, and eliciting strategies for effective communication. In contrast, far less time was devoted to the uncoached groups for watching the demonstration of peer feedback sessions and discussing them. The findings showed that the coached groups made substantially more comments among them, displayed more commitment to comprehending peers' drafts, and gave more specific and effective feedback. Additionally, the writers in the coached groups seemed to change from writer-based language to reader-based language. Moreover, the coached groups made more revisions based on peer feedback sessions. Berg (1999) also examined whether trained peer feedback shapes revision types and writing quality of ESL students having no prior experience of peer feedback. The trained group was provided with a program consisting of 11 steps with a detailed peer feedback procedure; suggestions on language to use for effective peer feedback and attending to global aspects of the texts during feedback sessions. In contrast, the untrained group was offered no specific instruction on how they should be involved in peer feedback. Both of the groups revised the first drafts in response to peer feedback. The findings showed that the trained group's second drafts had more meaning-level revisions and improved more regardless of language proficiency level. It seems that appropriate and substantial investment in training may lead to making meaning-type revisions, resulting in better quality of revision and developing an awareness of the discrepancies between intended meanings and actual representations from readers' perspectives.

Several studies have attempted to determine the relationship between students' perceptions of peer feedback and the extent of incorporation into their revisions. Nelson & Murphy (1993) examined whether intermediate ESL students take peer feedback into their revisions. The findings showed that they made comparatively substantial revisions based on peer feedback and they tended to incorporate peer feedback into their revisions when they communicated cooperatively, while they were less likely to use peer feedback for their revisions when they interacted defensively or had no interactions at all. It seems that the degree of revisions based on peer feedback was affected by the tone of interaction. Mendonça and Johnson (1994) examined the extent of the students' use of peer feedback in their revision and their perceptions of the usefulness of peer feedback when revising. The findings showed that the students incorporated peer feedback into 53% of their revision, revised 37% of the parts of the text not mentioned during peer feedback, and did not revise 10% of the parts discussed during peer feedback. This suggests that the writers made decisions on whether peer feedback was useful for their revisions selectively and peer negotiations encouraged the writers to notice any problems that were not pointed out by the reviewers. Post-interviews showed that all of the students regarded peer feedback as helpful for revision and both teacher and peer feedback as respectively important for revision. The students thus seem to have assumed that peer feedback can help to improve content while teacher feedback can be

expected for grammar correction. This trend confirms Chaudron's (1984) results, which suggest that the students regarded peer feedback as helpful for revising. As to L2 writers' characteristics for adopting peer feedback for revisions briefly discussed above, Villamil and Guerrero's (1998) study produced similar findings. They examined how intermediate ESL college students incorporate peer feedback into final revisions in two rhetorical modes, narration and persuasion. The results showed that 74% of revisions made during peer feedback sessions were adopted and those revisions accounted for 55% of revisions taken into the final drafts. In addition, they made further revisions and self-revisions influenced by previous peer feedback. Moreover, only a 7% false repair rate was found in the final drafts. These findings imply that the students were selective about incorporating peer feedback into their revisions while it has a substantial effect on student revision. Additionally, it appears that peer feedback provides opportunities to share problems with the texts, can develop reader-awareness and self-regulation, and aid in acquiring strategic competence in revision.

Conversely, Connor and Asenavage's study (1994) found only a small effect of peer feedback on student revision. They investigated the impact of peer feedback made by two groups in freshman ESL writing classes on student revision compared with teacher feedback and other sources to support their revision. After revising the first draft based on peer feedback, they were asked to complete the final drafts in response to teacher feedback. The results showed that about 5% of revisions came from peer feedback, approximately 35% of revisions resulted from teacher feedback, and about 60% of revisions took place as a result of other writing aids or self-revision. This suggests that the students were more receptive to teacher feedback than peer feedback. Additionally, it seems the efficacy of peer feedback may depend on extensive and specific training of peer feedback, which is consistent with the findings of Stanley (1992) and Berg (1999).

Likewise, Tsui and Ng (2000) examined the extent to which EFL secondary school students incorporated teacher and peer feedback into their revisions and their perceptions of both types of feedback for revision. The results showed that the students incorporated significantly more teacher feedback into their revisions than peer feedback despite benefiting more from reading peers' writings than receiving peer feedback. It seems that the students value teacher feedback for effective revision in terms of quality and authority while peer feedback has some role to improve revision differently from teacher feedback; peer feedback can help us learn from each other with mutual support gained during peer collaboration, develop a sense of audience and writer-responsibility, and raise awareness of problems. In a similar comparative study, Paulus (1999) investigated how teacher and peer feedback affect student revisions made by undergraduate international students in a process-based pre-freshman writing class. Following peer review sessions with written peer feedback, the students were asked to revise the first draft. They then wrote the third draft responding to teacher feedback focused on both content and form. The results showed that they incorporated peer and teacher feedback into their revisions selectively. These findings imply that both teacher and peer feedback can have a substantial impact on student revision although teacher feedback encouraged students to make more revisions and was more valued by them. In addition, as the results suggest that revising behaviors characterized by meaning-level revisions contributed to increase the scores of their writings, it can be concluded that

students' progress in quality of writing may benefit from being asked to revise using productive teacher and peer feedback.

Considering both negative and positive findings on students' perceptions of peer response or peer feedback incorporation rate discussed above, it is crucial for teachers to prepare students for adequate peer feedback activities or structure peer feedback practices appropriately. Some complaints or criticisms of peer feedback raised by students include time constraints, incorrect commentary provided by peers, incapability of locating mistakes, focusing on surface-level errors, more preference for teacher feedback or concerns about interpersonal relationship (Connor and Asenavage, 1994; Diab, 2010; Hu & Lam, 2010; Wang, 2014). Despite these challenges in peer feedback, they can be avoided with carefully designed training for peer review and well-structured peer feedback activities for its effective implementation. Writing teachers need to create different types of peer review activities, in which students engage for their revisions, with taking sociocultural learning theory into much account. Towards this end, peer collaborative revision is being situated positively as one of the peer response activities, during which students scaffold each other and collaboratively develop their writings based on sociocultural learning theory (Memari Hanjani, 2017; Storch, 2002). This approach differs from peer feedback, where students exchange their written works and evaluate them for each other without relying on intervention from teachers. Peer collaborative revision is a method in which students jointly read, discuss and revise each other's writings with the use of teacher commentary on their pieces of written works (Memari Hanjani, 2017).

RESEARCH INQUIRY: EFFECTIVE TEACHER AND PEER FEEDBACK TO FACILITATE REVISION SKILL

The findings of the multiple studies above, suggest the importance of employing instructional approaches effective for L2 student revisions, taking into account the difference in nature of the revision process between skilled and unskilled revisers (Aoki, 2006) and the role of teacher or/and peer feedback as a potentially effective teaching device in helping to develop revision skill (Ashwell, 2000; Berg, 1999; Chandler, 2003; Chaudron, 1984; Fathman & Whalley, 1990; Hedgcock & Lefkowitz, 1992; Paulus, 1999). Multiple studies propose that revision itself plays a crucial role in improving the quality of writing (Ashwell, 2000; Fathman & Whalley, 1990; Ferris, 1997; Paulus, 1999; Robb, et al., 1986). However, revision can place considerable demand on L2 writers' cognition (Flower et al., 1986), indicated by the features of L2 unskilled revisers described above: making no clear representation of task definition; lacking reader-awareness; having trouble in detecting problems; using limited revision strategies like simply deleting problems; leaving them unsolved; rewriting the chunks of the text; making fewer meaning-level revisions but surface changes; and failing to utilize metalinguistic analyses of the target language (Cumming, 1990; Kobayashi & Rinnert, 2001; Raimes, 1984; Sze, 2002; Zamel, 1983). Considering the heavy demands on L2 revisers' cognition, the absence of feedback may result in insubstantial revision.

Within the revision process model designed by Hayes et al. (1987), Flower et al. (1986) have presented three phases placing special demands on revisers: (1) detecting textual problems while making an accurate representation of the text; (2) diagnosing

with sufficient information to handle textual problems; and (3) selecting an appropriate strategy based on the substantial input from diagnosis. Given that it is cognitively demanding for L2 revisers to engage in these sub-processes, more explicit instruction of what and how to revise needs to be considered. This corroborates the finding that direct teacher feedback improves accuracy best in revision and subsequent writings because it may be easiest for L2 students to understand what to do for revision (Chandler, 2003; Qi & Lapkin, 2001). Furthermore, teacher feedback with declarative description, direct wording, and suggestion of necessity for textual problem-solving (Conrad & Goldstein, 1999), and long and specific teacher feedback, which asks for elaboration or specific changes (Beach & Friedrich, 2005; Ferris, 1997), are likely to be favored by L2 students and result in making progress in revision. Conversely, findings showing that direct feedback does not necessarily contribute to making progress in accuracy (Robb et al., 1986) indicate that direct feedback affects revision positively if revision practice is not conducted as problem-solving through comparing direct feedback with original texts. Indirect feedback thus can be an alternative to direct feedback and lead to improvement in formal accuracy (Ashwell, 2000; Chandler, 2003; Fathman & Whalley, 1990; Robb et al., 1986). However, indirect feedback may not be enough for L2 unskilled revisers nor necessarily lead to effective revision practice (Aoki, 2006; Ferris, 2002), because L2 unskilled revisers have trouble in diagnosing and solving their errors even if offered indirect feedback.

Despite the issue of the effect of teacher feedback on improvement in revision regardless of type of feedback being reported (Chandler, 2003; Conrad & Goldstein, 1999; Fathman & Whalley, 1990; Ferris, 1997), research indicating that it explicitly helps to develop student revision is rare (Hedgcock & Ferris, 2005). Several problems with teacher feedback for prompting revision must be taken into account. First, direct teacher feedback may not lead to improving subsequent writings (Semke, 1984; Truscott, 1996; Truscott & Hsu, 2008). The question remains as the previous revision studies provide no evidence on the effectiveness of direct feedback on longitudinal progress in writing (Truscott & Hsu, 2008). Another problem is that some L2 students incorporate teacher feedback into their revision uncritically regardless of whether they agree with the teacher feedback and without real understanding of whether it may match their intentions for better revision (Hyland, 1998; Tsui & Ng, 2000). This indicates that such a straightforward receptive attitude towards teacher feedback may result in poor processing of teacher feedback and superficial problem-solving. In contrast, some ignore teacher feedback due to being confused about how to incorporate it into their revisions, while others favor it because of its usefulness for their revisions (Ferris, 1997; Sze, 2002). It appears that it can be challenging for L2 students to understand what they are asked to revise in response to teacher feedback due to having no clear representation of revision practice (Ashwell, 2000; Ferris, 1997). It is important for teachers to consider individual variables including students' expectations, affective matters, and contextual factors (Conrad & Goldstein, 1999; Hyland, 1998).

To sum up, the implication is that direct feedback may not necessarily ensure long-term effectiveness of student revision, nor result in improving subsequent writings while indirect feedback cannot always promise appropriate operation of revision in those who have difficulty in understanding why the feedback identified any problems. Yet, as Sachs and Polio (2007) claim that student revisions do not always result from

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their noticing of external feedback, it is necessary to employ instructional approaches that can help them to learn to be actively involved in each stage of the sequential revision sub-processes. Specifically, the reformulation as presented above may prompt L2 students to be operatively engaged in revision through providing opportunities to verbalize noticing the gap between original drafts and the reformulated text (Qi & Lapkin, 2001; Sachs & Polio, 2007). Whereas the reformulation seems to present L2 students with a modeled product exempted from the phases of detecting, diagnosing and solving to some extent, it does not deprive them of opportunities for being involved in the revision sub-processes but offers opportunities for reflective thinking through comparing between the reformulated text and the original drafts. Another avenue of approach is that engagement in processing corrective feedback can ensure high level of uptake and longitudinal retention (Storch & Wigglesworth, 2010) – encouragement in making reflection on any type of feedback and students' original texts is a key component for successful revision.

From the perspective of writing as cognitive process, such reflective thinking is connected to self-regulation during revision process; it functions in a similar way to verbalization processes in the comprehensible output hypothesis engaging in L2 writers' noticing, testing, and reflecting on the mismatch between interlanguage and the target language (Qi & Lapkin, 2001; Suzuki, 2008; Swain & Lapkin, 1995). Given this, peer feedback provides opportunities for verbal interactions between L2 students, which may lead to reflective thinking and development of self-regulation. During peer interactions, both readers and writers are actively involved in the revision task reciprocally (Guerrero & Villamil, 2000; Mendonça & Johnson, 1994; Villamil & Guerrero, 1998); consequently, peer feedback allows for developing readers' perspectives (Berg, 1999; Mendonça & Johnson, 1994; Stanley, 1992; Tsui & Ng, 2000; Villamil & Guerrero; 1998). In actuality, students' perceptions of peer feedback indicate that they benefited more from reading the writings of their peers than receiving written peer feedback; they learned to enhance readers' views, raise awareness of their weaknesses, and develop writer-responsibility (Berg, 1999; Mendonça & Johnson; 1994). Moreover, L2 students are induced to make global revisions, resulting in improving content quality of writings (Berg, 1999; Hedgcock & Lefkowitz, 1992; Mendonça & Johnson, 1994; Paulus, 1999). Such L2 writers' behaviors of global attending may be attributed to the reciprocal act of sharing representations of textual purposes and intentions for effective communication during peer interactions with the aim of implementation, which leads to improving revision.

For productive practice of peer feedback, two things need to be noted. On the one hand, like teacher feedback, peer feedback with text-specificity can help to improve student revision. It has been claimed that it is necessary to offer extensive and appropriate training of peer feedback, in which L2 students can make text-specific suggestions to their peers (Berg, 1999; Hedgcock & Lefkowitz, 1992; Nelson & Murphy, 1993; Stanley, 1992; Paulus, 1999). On the other hand, peer feedback has several practical problems and limitations for its successful inclusion in L2 writing instruction. For one thing, some do not easily incorporate peer feedback into their revisions (Connor & Asenavage, 1994; Tsui & Ng, 2000), while others make substantial peer-initiated revisions (Mendonça & Johnson, 1994; Nelson & Murphy, 1993; Paulus, 1999; Villamil & Guerrero; 1998). In addition, along with characteristics lacking text-

specificity and much information, a higher percentage of incorporation into revision can be influenced by the tone of interactions (Nelson & Murphy, 1993; Tsui & Ng, 2000). Furthermore, Villamil and Guerrero (1998) have reported that interactions between L2 unskilled writers at similar stages of linguistic competence observed in ordinary L2 writing instructional contexts do not follow the traditional interpretations of the ZPD modeled by Vygotsky (1978), in which expert-novice interactions occur. However, as their study showed that only a small proportion of false repairs were initiated by peer feedback overall and that the L2 students learned to develop revision strategy, self-regulation, and readers' perspectives within the limits permitted by their linguistic abilities, it is implied that peer feedback may provide pedagogical validity of improving revision skill.

In sum, as verbal interactions during peer feedback provide opportunities to externalize their own thinking process, L2 writers are encouraged to reflect on their ideas and knowledge of the texts explicitly (Daiute & Dalton, 1993). Sharing this explicit representation with peers offers opportunities to monitor themselves and transfer reading and writing behaviors of their peers to themselves. As a result, they can promote a more sophisticated way of how to read their own texts from the reader's viewpoint, and make reflection on their own texts in interactive social contexts. Such L2 writers' reflective thinking with reader-awareness may prompt them to revise more globally and lead to improving the quality of content in the revised manuscripts. In the end, the variable subsidiary components obtained from peer interactions rather than peer feedback itself may have a more substantial and positive impact on student revision.

As discussed previously, the scholarly perspectives have reflected on different challenges regarding teacher and peer feedback to develop revision skills. In order to address the problems, some researchers have examined the incorporation of both types of feedback or the application to peer collaborative revision in EFL context (Memari Hanjani, 2017). It has been reported that this approach allows students to build confidence and learners' autonomy in writing and foster critical analysis of their own writings upon the completion of their final drafts (Ferris & Hedgcock, 2014; Lundstorm & Baker, 2009; Memari Hanjani, 2017). Considering the potential benefits of peer collaborative revision that may contribute to deal with the challenges in teacher and peer feedback and revision, it is worth the effort to design carefully the implementation of this hybrid method in L2 writing settings.

CONCLUSION

By reviewing the theories and studies on revision issues in the literature, this paper has attempted to investigate factors influencing L2 writers' revision process and the potential of teacher and peer feedback to affect revision in order to highlight the significance of developing revision skill in L2 writing instruction. Whereas revision is recursively conducted through mental processes highly demanding of L2 writers' cognitions, it is an essential phase of L2 writing; the revision process provides L2 writers with opportunities for noticing, which may result in promoting L2 acquisition. Additionally, pedagogically important conclusions from some findings can be drawn. For one thing, teachers need to realize that making reflection on L2 writers' texts

initiated through teacher and peer feedback prompts L2 students to develop cognitive processes such as noticing and self-regulation, which is essential to the mastery of L2 revision skill. Consequently, such mental processes may eventually lead to fostering a sense of autonomy in their subsequent writings.

In addition, teachers need to utilize teacher and peer feedback complementarily through understanding that the purposes and functions of these two types of feedback differ. Furthermore, instructional approaches combining these two types of feedback need to be designed with consideration of the nature of L2 writing within process-based pedagogy and variable contextual factors and students' learning progress and affective concerns. Therefore, further research demonstrating the effects of this combination on fostering writers' cognition and the efficacy of the combined feedback in L2 writing instruction on facilitating revision should be conducted. Although teacher feedback, peer response, and other feedback sources including peer collaborative revision may have different approaches, methods and procedures respectively, writing teachers need to acknowledge how giving teacher feedback or structuring peer response activities is conducive to fostering self-revision skills through guided activities (Ferris & Hedgcock, 2014).

As to teacher feedback and revision process, several aspects will need to be sought in further research. When it comes to teacher feedback, there are two things to be considered in more depth. For one thing, this paper has primarily concentrated on written feedback regarding the types of teacher feedback; this commonly used type of feedback in L2 writing instruction can surely save time. However, other useful sources need to be examined in order to ensure more positive impact of feedback on revision. More specifically, there are many ways for L2 students to receive additional assistance including in-person teachers' consultation, access to writing center or tutors, availability of resources at school, or web-based automated feedback service (Ferris & Hedgcock, 2014).

For the other thing, there are scare studies on how to address the problems that conventional teacher feedback approaches or strategies cannot work well. We have been rarely concerned about the issue that teachers get stressed or overwhelmed with conventional teacher feedback practices. Despite these challenges, it is crucial for teachers to reflect on their own feedback practices or take sufficient professional trainings or workshops which aim at teaching how to give constructive feedback on student pieces of writings (Ferris & Hedgcock, 2014; Ferris, Liu, et al., 2011; Lee, 2011). Related to this issue, practical constraints which may inhibit implementation of change in teacher feedback include being lack of teacher education or key stakeholders' understanding or support (Lee, 2011). Given this, teachers' heavy workload or their burnout caused by adopting conventional approaches laboriously should be paid more attention in order to empower writing teachers to employ more innovative feedback practices.

Moreover, for further study, a microgenetic approach of the student revision process along with their products will provide a clear picture of decision-making during revision, as it is claimed that L2 composition studies should focus on students' revision in the developmental stage of their writing performance and process (Ferris, 2010). The product-process paradigm for future research thus needs to be explored in order to verify that teacher and peer feedback explicitly facilitate L2 revision skill.

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As L2 learners are more proficient in writing, they need to build self-revision strategies and skills and gradually reduce frequent mistakes in grammar or text structures. I conclude that although self-revision is cognitively demanding for L2 learners, the use of teacher and peer feedback or alternative collaborative approaches can be viewed as a transitional stage during which L2 learners will be autonomous writers and capable of making self-revision.

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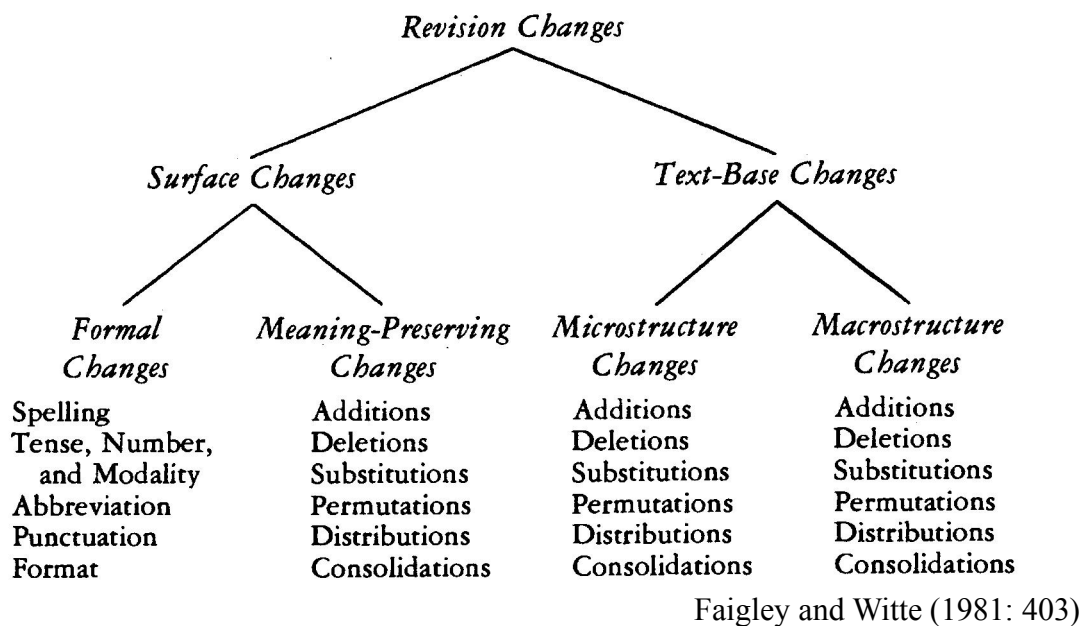
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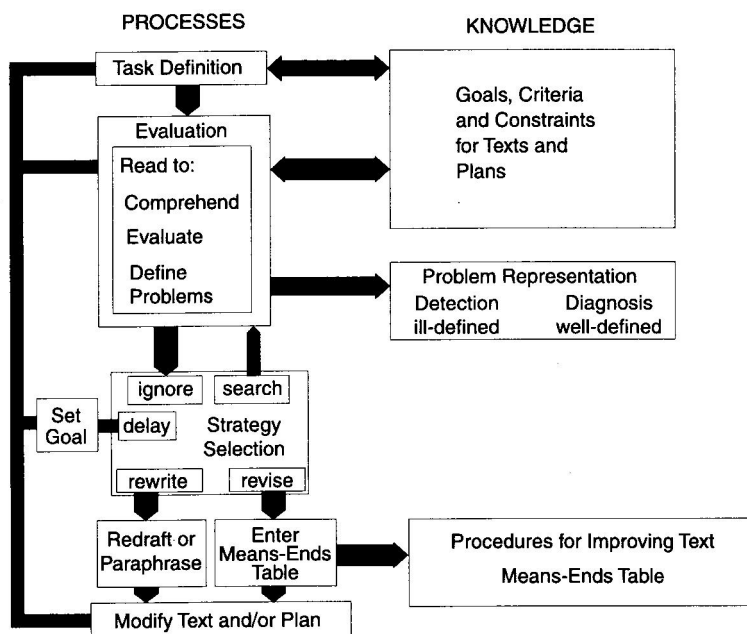
APPENDIX 1

A taxonomy of revision changes

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Revision Changes

Surface Changes *Text-Base Changes*

Formal Changes	*Meaning-Preserving Changes*	*Microstructure Changes*	*Macrostructure Changes*
Spelling	Additions	Additions	Additions
Tense, Number, and Modality	Deletions	Deletions	Deletions
	Substitutions	Substitutions	Substitutions
Abbreviation	Permutations	Permutations	Permutations
Punctuation	Distributions	Distributions	Distributions
Format	Consolidations	Consolidations	Consolidations

Faigley and Witte (1981: 403)

APPENDIX 2

Process model of revision

PROCESSES   KNOWLEDGE

Task Definition

Evaluation

Read to:
Comprehend
Evaluate
Define Problems

Goals, Criteria
and Constraints
for Texts and
Plans

Problem Representation
Detection   Diagnosis
ill-defined   well-defined

ignore   search
Set Goal   delay   Strategy Selection
rewrite   revise

Redraft or Paraphrase   Enter Means-Ends Table

Procedures for Improving Text
Means-Ends Table

Modify Text and/or Plan

Hayes et al. (1987: 185)