A MIXED METHOD STUDY ON THE ROLE OF AUDIO FEEDBACK IN ACADEMIC WRITING

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Approval of the Graduate School

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I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Arts.

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ABSTRACT

A MIXED METHOD STUDY ON THE ROLE OF AUDIO FEEDBACK IN ACADEMIC WRITING

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This study aimed to investigate the role of audio feedback in academic writing achievement and to find out the graduate students' perceptions about improving their academic writing through audio feedback. The research was conducted with the graduate students at a foundation university in Istanbul, Turkey. In order to answer research questions, the study adopted mixed-method design. The statistical analysis of the achievement scores for two reflection assignments was carried out to see the impact of audio feedback and written feedback on academic writing achievement. Another source of data was obtained through the participants' first and second drafts of each assignment, which were analyzed to find out to what extent audio feedback has an impact on academic writing. The participants were given open-ended questions and also interviewed to explore their perceptions of audio feedback and experience of it. Lastly, to identify if there is a change in the graduate students' feedback preferences, a pre-test and post-test feedback preference survey was applied. The findings revealed that the graduate students achieved significantly higher scores for their academic writing assignments after they received audio feedback. The findings of document analysis suggested that both feedback types prompted effective revision process; yet there were no contrasting instances in overall. Furthermore, it can be assumed that the participants generally had positive perceptions of audio feedback even though some drawbacks were mentioned. Finally, there was no significant change in graduate students' feedback preferences. The study provides insights

about the practical applications of audio feedback in writing.

Keywords: Audio Feedback, Academic Writing, Student Perceptions

ÖZ

AKADEMİK YAZMADA SES KAYDI İLE GERİ BİLDİRİMİN ROLÜ ÜZERİNE KARMA BİR YÖNTEM ÇALIŞMASI

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Bu çalışma, akademik yazma başarısında sesli geri bildirimin rolünü incelemeyi ve yüksek lisans öğrencilerinin akademik yazmasını ses kaydı ile geri bildirim yoluyla iyileştirme konusundaki algılarını belirlemeyi amaçlamıştır. Araştırma, İstanbul'daki bir vakıf üniversitesindeki yüksek lisans öğrencileriyle gerçekleştirilmiştir. İlgili araştırma sorularını yanıtlamak için, karma yöntem tasarımı benimsenmiştir. Ses kaydı ile geri bildirim ve yazılı geri bildirimin akademik yazma başarısı üzerindeki etkisini görmek için lisansüstü öğrencilerin ders içerisindeki iki ödevden elde ettikleri başarı puanlarının istatistiksel analizi gerçekleştirilmiştir. Başka bir veri kaynağı olarak katılımcıların her bir ödevin birinci ve ikinci taslakları kullanılmış ve bunlar, ses kaydı ile geri bildirimin akademik yazma üzerinde ne ölçüde bir etkisi olduğunu belirlemek amacıyla doküman analizine tabi tutulmuştur. Ayrıca ses kaydı ile geri bildirim ve ilgili deneyimlerine ilişkin algılarını keşfetmek için lisansüstü öğrencilere açık uçlu sorular yöneltilmiş ve görüşmeler yapılmıştır. Son olarak, lisansüstü öğrencilerinin geri bildirim tercihlerinde bir değişiklik olup olmadığını belirlemek için ön test ve son test geri bildirim tercih anketi uygulanmıştır. Bulgular, lisansüstü öğrencilerinin ses kaydı ile geri bildirim aldıktan sonra akademik yazma ödevlerinde önemli ölçüde daha yüksek puanlar aldığını ortaya koymuştur. Doküman analizinin bulguları, her iki geri bildirim türünün de etkili bir düzenleme sürecini teşvik ettiğini göstermiş olsa da genel olarak belirgin sonuçlar ortaya koymamıştır. Ayrıca, bazı dezavantajlardan bahsedilmesine rağmen, katılımcıların genel

olarak ses kaydı ile geri bildirime dair olumlu algılara sahip oldukları varsayılabilir. Son olarak, öğrencilerin geri bildirim tercihlerinde önemli bir değişiklik olmadığı anlaşılmıştır. Çalışma, yazılı geri bildirim ve ses kaydı ile geri bildirimin pratik uygulamaları hakkında bilgi vermektedir.

Anahtar Kelimeler: Ses Kaydı ile Geri Bildirim, Akademik Yazma, Öğrenci Algılar

To My Mother and Father

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EFL	English as a Foreign Language
ESL	English as a Second Language
L2	Second Language

Chapter 1

Introduction

This chapter gives an overview of the thesis study which investigates the effect of audio feedback on graduate students' academic writing and their perceptions of audio feedback. The chapter starts by generally discussing theoretical background for academic writing as a language skill, the role of feedback and technology-enhanced feedback modes. It is followed by the statement of the problem and purpose of the study along with the research questions. After introducing the focus of the research, why this research and its contributions are important to the field is indicated and clarified. At the end of the chapter, some of the key terms are described in order to give a clear understanding.

1.1 Theoretical Background

Writing is one of the basic skills in foreign language learning providing a space where learners can express their ideas and become aware of the language by using it. Improvement in writing skills fosters the performance in language development (K. Hyland, 2003). In higher education and academic context, writing and writing skills play a key role in learners' intellectual development rather than a part of standard communication system. The main goal of academic writing is to enable writers to interact with other academics and scholars in the field and in other academic communities (Cotos, 2010; Greene & Lidinsky, 2012). Thereby, learners can show their academic discourse skills and their knowledge related to the field (Hinkle, 2004).

Explicit teaching of academic writing is necessary to ensure the participation of learners to the academic community (Swales, 1990; Hyland, 2000; Lau, 2004). That is also because students need to 'notice' and be familiar with different contexts and concepts of academic areas and discourse functions, which loads an important task on teachers' shoulders (Cortes, 2004). As one of the main instructional practice in writing, feedback serves as a 'noticing facilitator' in order to assist learners realize the gap between their

linguistic choices and the target language required for the specific writing genre (Wang & Jiang, 2015). On this wise, students can have the chance of monitoring their work, and this increases the potential of improvement of their output, which results in promotion of their writing skills in second or foreign language. Feedback has been seen as a significant part of developing and improving writing skills in a foreign language (Hyland & Hyland, 2006). Providing feedback for the development of writing skill has been commonly practiced by instructors in second language acquisition and foreign language learning for a long time.

According to Hattie and Timperley (2007), feedback is a piece of "information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one's performance or understanding" (p. 81). It is an unending interactive process between educator and learner so that it stimulates learning and teaching including two sides of these activities. Hattie and Timperley (2007) express that useful and proper instructor feedback is regarded as one of the most effective ways to foster and strengthen learners' learning process. Feedback functions as the error correction and grammar correction where learning and teaching activities take place (Wang & Jiang, 2015). As Rowe and Wood (2008) state, the effectiveness and the quality of feedback provided by educators has significance for accomplishing good quality of communication resulting in efficient teaching and learning atmosphere. This is only one of the various functions of the feedback proposed in the literature. Feedback creates space for the current and future assignments by making clarifications, demonstrating a grade and offering reasonable advice. In this sense, feedback by which instructors have the chance of showing his/her field related characteristics such as competence, expertise and control is more than one of the concrete elements of teaching and learning process (Carless, 2006).

It is undiscussable that feedback is needed for grammatical accuracy in learning process, but correcting grammatical structures is not enough for good writing. Learners should be provided feedback on whether they make use of proper linguistic choices in their writing as learners convey an intended message. Therefore, feedback provided to language learners needs to address and be responsive to the meaning of learners' writing (Chukharev-Hudilainen & Saricaoglu, 2016). Likewise, at higher education level, students can notice the parts which are appropriate for the intended message and in language use,

and the parts which need revision for improved writing with the assistance of feedback. As a result, students become aware of their weaknesses and strengths regarding their academic knowledge and writing skills (Singh, 2016). Building and developing ideas for academic writing is possible through the stimulation of critical thinking skills, which can be activated by quality and efficient feedback (Rowe & Wood, 2008). Concurrently, overall feedback on academic writing can lead to a sense of accomplishment in students.

Similar to above-mentioned functions of feedback in academic writing, several theoretical perspectives on the role of feedback for academic writing are proposed (Kumar & Stracke, 2007). They name those functions as referential function, directive function and expressive function. In referential function, feedback puts the focus on edition, organization and content of the students' academic writing whereas directive feedback is more in form of suggestions, questions and instructions. Expressive feedback, on the other hand, includes instructor's subjective comments and opinions.

The process model of writing suggests that instructor feedback and guided revision can help student writing to improve. The process approach to writing treats writing as a creative act which includes several stages, namely brainstorming, drafting, receiving feedback and revising rather than reproduction of a model text (Kroll, 2001). Moreover, the process model prioritizes theme and purpose of a text over structural features for improvement of that particular text and to promote learners' language development (F. Hyland, 2003). According to the process pedagogy, substantive revision is essential to develop writing competence (Sommers 1980; Fitzgerald, 1987; MacArthur, Schwartz & Graham, 1991); without learning to revise, one cannot improve his/her writing (MacArthur, 2007); and providing constructive feedback to stimulate global revision is (c) teachers' role in this model (Fitzgerald, 1992).

The development of Web 2.0 tools and new digital technologies allowed educators to engage in technology-enhanced feedback on student writing as an alternative to minimize the limitations of traditional written feedback (Grigoryan, 2017). Therefore, alternative feedback modes like audio/video recorded feedback and group podcasts have started to be used in language learning and teaching for evaluation of student writing (McCarthy, 2015).

The groundwork on technology-enhanced feedback is growing and suggests advantageous findings on behalf of technology-enhanced feedback in aspects of student engagement, the provision of personalized and detailed feedback and successful student-teacher bounding (e.g. Ice, Curtis, Phillips, & Wells, 2007; Merry & Orsmond, 2008; Lunt & Curran, 2010). In addition to the promising literature, Mayer's cognitive theory of multimedia learning includes some assumptions for technology-enhanced feedback. Mayer (2001) defined multimedia learning as "the presentation involving words and pictures that is intended to foster learning" (p. 3) and it holds two main goals which are remembering and understanding. In this sense, he claimed that using two modes (verbal and visual) of presenting information is better than using only one. Mayer (2020) identified fifteen principles of multimedia design to be taken into account while creating effective learning content which are respectively multimedia principle, coherence principle, signaling principle, redundancy principle, spatial contiguity principle, temporal contiguity principle, segmenting principle, pre-training principle, modality principle, personalization principle, voice principle, image principle, embodiment principle, immersion principle and generative activity principle. Some of these principles can be explained as:

1. Multimedia Principle: Learners achieve deeper learning when materials are designed with words and pictures rather than words alone.

2. Temporal Contiguity Principle: Simultaneous presentation of visuals and words leads to deeper learning.

3. Modality Principle: Better learning occurs when words are narrated rather than presented as on-screen text.

4. Redundancy Principle: Deeper learning occurs when words are narrated rather than presented as both narration and on-screen text.

5. Personalization Principle: Presenting information in conversational style rather than formal style leads to deeper learning.

These principles of multimedia design are assumed to advance the development of instructional materials as well as the delivery of feedback to learners as feedback is considered as a part of the content to be learned.

In accordance, Moreno and Mayer (2000) assert that information presented in conversational style or in first person will lead to a better and longer retention in instructional content compared to information introduced with formal style on behalf of the assumption of the personalization principle. Likewise, Kartal (2010) expresses that "according to the personalization principle, people learn better from computerized multimedia materials when information is presented informal (personalized), rather than formal (non-personalized), style of language" (p. 616). Of all types of technology-enhanced feedback, audio feedback is the concern of the present study. It is suggested that giving feedback in personalized language has the potential to be favored by students and to be more effective based on the insight about the personalization principle that the literature has offered.

1.2 Statement of the Problem

Writing carries major importance for academic communities and university studies as it fosters the development of higher thinking skills and language development (Graham & Herbert, 2010). Furthermore, feedback provided to writing tasks in academic settings has differences from feedback given in L2 writing classes (Soden, 2013). Thus, developing new strategies is required to provide proper feedback to students and to gain them advanced writing skills. As stated by Hattie and Timperley (2007), feedback has such a significant role that may improve and deteriorate learning process. Generally, instructors make use of written feedback by including handwritten comments on their submitted work, making use of text-based e-mails or adding comments to a Word document. However, providing written feedback may bring along some challenges for instructors such as time constraints (Higgins, Hartley, & Skelton, 2001; Rowe & Wood, 2008), and lower learner-instructor contact (Higgins et al., 2001) as well as lack of details and clarity of comments and examples (Duncan, 2007). Additionally, it may create miscommunication and emotional barriers between instructor and students (Carless, 2006).

Information technology has developed far more than ever in the recent years and the use of the Internet has widened. With these advances, the use of online tools and the

Internet are combined with language teaching and learning (Grigoryan, 2017). Combined with the shift to learner-centered approaches in teaching writing in a foreign or second language, technological tools have changed feedback practices. For the development of writing skills, instructor feedback is integrated through computer technologies as well as it is completed by peer feedback practices (Liang, 2010; Ravand & Rasekh, 2011; Yang & Meng, 2013).

Technological advances allow instructors and peers to create and deliver feedback in more economical and feasible way along with the advantage of multimedia including pictures, narration and animation. When second and foreign language education contexts are reviewed, some of the studies reveal that technology-mediated feedback is found to have positive effect on second and foreign language learners' writing development (Tuzi, 2004). In contrast to written feedback, tonal and supra-segmental features of the use of instructor's voice in any kind of technology-mediated feedback provide an advantage in terms of student engagement and involvement in the process of writing and the promotion of emotional connectivity between students and their instructor (Ice et al., 2007). As one of the types of technology-enhanced feedback, audio feedback is assumed to provide more detailed and personalized feedback compared to giving feedback as handwritten comments or on a Word document (e.g. Merry & Orsmond, 2008; Lunt & Curran, 2010). Audio feedback is found to be effective to include more complex points of writing and using the right volume and tone of voice helps students to notice problematic parts in their writing and make these clear-cut to be checked and revised (Merry & Orsmond, 2008). Since spoken files have the advantage of providing more details regarding student writing, audio feedback can easily convey in-depth comments and further suggestions rather than only drawing attention to problematic parts (Emery & Atkinson, 2009; Lunt & Curron, 2010; Rawle, Thuna, Zhao & Kaler, 2018; Rassaei, 2019).

However, there is still inadequacy of findings about the role of audio feedback in academic writing and its impact on the development of student writing in academic contexts. It is seen that most of the studies focus on written feedback and scarce research into different types of technology-enhanced feedback, especially audio feedback, for academic writing has been conducted. Therefore, this thesis addresses to the role of audio feedback in academic writing and students' perspectives of this experience.

1.3 Purpose of the Study

There have been many research studies carried out on feedback (F. Hyland, 2003; Yang, Badger & Yu, 2006; Lee, 2007). Some of these studies address to discovering the nature and function of feedback (F. Hyland, 2003). However, the key purpose of the study is to explore the role of the use of audio feedback in graduate students' academic writing in an educational setting. In particular, the study will examine if there is any difference in graduate students' academic writing achievement after they are provided with the audio feedback and written feedback. Additionally, the study will look at the difference between the impact of the audio feedback and written feedback on academic writing.

Another focus of this thesis is to provide insights into what students' perspectives of audio feedback and written feedback for academic writing are as how students approach to audio feedback carries importance as the effect of audio feedback and other technology-enhanced feedback types on language learning/acquisition process and on writing. Thus, this study hopes to enlighten the graduate students' experience of audio feedback and written feedback and describe their attitudes and preferences in regard to this issue.

It is important to note that the focus of the study is not the academic writing process, but rather the impact of the feedback mode provided to the students and its impact on academic writing. Even though the graduate students are expected to submit writing drafts during the research process, writing drafts will be used and analyzed to see the impact of provided feedback types and the significance of the potential difference on academic writing achievement.

1.4 Research Questions

This study aims to focus on the role of audio feedback in graduate students' academic writing and its impact on the development of academic writing in an ELT Master's Program at a foundation university in Turkey and their perspectives of audio feedback and this process. Correspondingly, the research questions of the study are:

1. Is there any difference in terms of graduate students' academic writing achievement as a result of written feedback and audio feedback?

2. To what extent does audio feedback have an impact on the development of graduate students' academic writing?

3. What are graduate students' perceptions of audio feedback compared to written feedback for academic writing?

4. Is there any change in graduate students' preferences towards audio and written feedback for academic writing in terms of a) usability of feedback, b) efficiency of feedback and c) students' feedback preference?

1.5 Significance of the Study

In the light of given theoretical background and literature review, the significance of the current thesis can be clarified in several points. As mentioned in previous sections, the effect and the use of technology-enhanced feedback in ESL and EFL still remains under searched and needs more attention. Most of the feedback studies investigated the traditional written feedback, which could be given as a simple text commenting or via e-mail. Regarding this, Watts (2007) expresses that the existing body of the literature is insufficient for providing evidence of the impact and the use of new media on feedback process. Moreover, technological advances lead to new aspects and dimension to the writing process, which can directly influence the instructor's feedback (e.g., Stapleton & Radia, 2010; Ene &Upton, 2014; McCarthy, 2015; Grigoryan, 2017; Lefroy, 2020). Therefore, the findings of this study can make contribution to the related literature by involving both traditional feedback and technology-enhanced feedback into academic writing process. Including the impact of the technology-enhanced feedback for academic writing, this thesis aims to shed light on how students perceive technology-enhanced feedback and written feedback.

Even though most of the technology-enhanced feedback studies mentioned in the literature were done at higher education institutions, the participant groups were generally from undergraduate students. Very few studies have been carried out with graduate level students. There is lack of research on comparing two different feedback modes for academic writing in that level. As Casanave (2002) and Morita (2004) state, L2 graduate students face the struggles resulted from adaptation to the oral and written discourse

culture of academic contexts. Therefore, they should be paid more attention while investigating technology-enhanced feedback practices. Besides, it is possible them to benefit from technology-related advances for their work as well as their native colleagues during the time that they are involved in complexities of academic writing genres in their L2. In addition to these, the absence of research on the impact of technology-enhanced feedback in EFL context in Turkey makes the current study necessary and significant in the field.

1.6 Definitions

Academic Writing: Academic writing consists of all of someone's written works that require knowledge on specific topic and is written for target audience formed by other academic people. It differs from other works in terms of purpose, audience, evidence, style, and process (Chin, Koizumi, Reid, Wray & Yamazaki, 2012).

Audio Feedback: Any feedback provided to students by speaking to a tool and recording voice rather than writing commentary or typing (Bless, 2017).

English as a Second Language (ESL): English as a second language is taught in context where English language is not the primary language of learners, but it is the official language or the medium of communication (Ellis, 2008).

English as a Foreign Language (EFL): English as a foreign language refers to instructional activities regarding linguistic input of English language provided to non-native speakers (Kim & Hall, 2002).

Feedback: Hattie and Timperley (2007) define feedback as a piece of "information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one's performance or understanding" (p. 81). As for higher education, feedback compromises the planned comments on student's work, which hold corrective function of concerned performance (Boud & Molloy, 2013).

Screencast Feedback: Screencast feedback is regarded as someone's recording of a video including computer screen or specified along with mouse movements, scrolling, typing and simultaneous audio narration (Thompson & Lee 2012; Henderson & Phillips 2014).

Video Feedback: Video feedback refers to when an agent makes a recording of himself/herself with the aim of providing feedback for student's assessment and performance by speaking to the camera (Lamey, 2015).

Written Feedback: Written feedback includes instructor's comments, questions and error corrections that are written or typed to students' assignments (Mack, 2009).

Chapter 2

Literature Review

The present chapter offers background information on writing, feedback and technology-enhanced feedback. In the first section, academic writing and approaches to writing are mentioned. Following this, feedback, formative feedback, strategies for effective feedback and feedback in writing are discussed. The last section of the chapter provides information on technology-enhanced feedback types by reviewing several studies on each feedback types.

2.1 Writing

Writing can be described as using the graphics symbols of linguistic utterances (Rogers, 2005). It involves different socio-cognitive processes such as composing, developing and analyzing ideas, rephrasing, implying and transforming information (Myles, 2002). Earlier, EFL and ESL primarily emphasized vocabulary development, grammar and reading comprehension rather than improving writing skills. It was argued that "writing was regarded as a tool to learn the other skills" (Reid, 1993, p.22). Probably, this was resulted from the idea of the fact that the language learning was once "to learn a language in order to read its literature or in order to benefit from the mental discipline and intellectual development" (Richards & Rodgers, 2001, p. 5).

The emphasis given to writing, however, has increased in the second and foreign language learning and writing has gained ground. Leki (2006) pointed out that the fundamental purpose of second and foreign language learning may shift to use writing to develop a second or a foreign language. Cumming (1990) stated that "composition writing elicits attention to form-meaning relations that may prompt learners to refine their linguistic expression—and hence their control over their linguistic knowledge—so that it is a more accurate representative of their thoughts and of standards usage" (p. 483). The

researchers proposed several features of writing as the reason for the significant role of writing in language learning. Williams (2012) mentions its slow pace, more lasting experience, and the necessity to use more precise and proper language among these features. Since the experience that a learner gains are more enduring and lasting, it stimulates cognitive processes and interactive moves, which promotes language acquisition. While writing, learners pay more attention to be precise in the use of linguistic forms and overall language features and this leads to using their explicit knowledge along with planning, monitoring and reviewing their text (Ravid & Tolchhinsky, 2002; Kim, 2011).

2.1.1 Academic writing. Academic settings demand writing skills to move from being the need for immediate communication to a keystone of intellectual development. As Weigle (2002) explains:

> The value of being able to write effectively increases as students' progress through compulsory education on to higher education. At the university level in particular writing is seen not just as a standardized system of communication but also as an essential tool for learning. . .. Writing and critical thinking are seen as closely linked, and expertise in writing is seen as an indication that students have mastered the cognitive skills required for university work (p. 5).

University students are naturally expected to be qualified enough to write plausible academic works. Although there may be variables like cognitive development, educational background and the level of proficiency in L2 that can affect the development of academic writing proficiency of ESL/EFL students, students develop their academic writing proficiency in classroom contexts (Hinkel, 2004). Additionally, the fact that they are less familiar with the conventions and requirements of academic writing in L2 makes it more difficult (Ballard & Clanchy, 1991). Besides, academic writing is claimed to be a cognitively complex for L2 learners since it equals to an active process of skill development and as the learners become more familiar with and internalize the target language, they are more likely to have less errors in time (Myles, 2002). In addition to these, Dong (1998) states that academic writing means to learn new rules and these rules may vary from one context to another. Hence, second and foreign language learners are

expected to have sufficient language tools such as grammar, vocabulary and punctuation and to compose proper academic texts and systematize coherent written academic discourse (Hinkel, 2002). On the other hand, even though L1 students are more fluent in grammatical structures and have better control of academic language in terms of vocabulary, it was found that they had poor academic writing skills (Hinkel, 2004). Still, the research of second language learning indicated that writing skills of one group differ than the other in such aspects as argument structure, sentence construction, and word choices (Silva, 1997).

Academic writing demands students to develop their ideas based on theoretical knowledge of a discipline or field along with addressing the reader's discoursal needs. (Kelley, 2008) and there are many components affecting students' writing in academic settings. These consist of the purpose, context (both academic and cultural), organization of the text, the position of the writer (Prior, 1995), the audience (Casanave, 2002), the domain and discipline and the expectations of academic community (Swales, 1990). Since writing is constituted on the relationships between writer, reader, text and actual context, writing in academic context properly does not require writing:

> in isolation but within networks of more and less powerfully situated colleagues and community members. They learn to forge alliances with those community members with whom they share values or whom they perceive will benefit them in some way and to resist when accommodating does not suit them (Casanave, 2002, pp.13-14).

It is necessary for the students in academic discourse to grasp the demands and prior knowledge of their audience, which will shape the content of their compositions. Since the audience have more knowledge than the writer for most of the time, they need to show familiarity and expertise rather than only reporting and discussing research findings (Burgess, 2002). It is suggested by Hyland (2002) that teaching academic writing needs to be constituted on the base of acquiring skills, language features and practicing tasks to use these appropriately depending on the purposes and understandings of particular disciplinary areas.

As the focus group of the present study is graduate students, it is essential to mention their experiences of writing in academic context. The proficiency in academic writing is decisive in one's academic success and involvement (Kelley, 2008) since it is supposed

to address the intellectual community where students are involved in active learning process. Therefore, some principles and rules must be determined so that students can achieve their success in those communities by using their ability to find their own academic voice. This process pushes graduate students to "access, evaluate, and synthesize the words, ideas, and opinions of others" (Al Fadda, 2012, p.124). In this sense, it was recognized that L2 students might suffer from an imbalance between their writing skills in the target language and their knowledge of discipline and sophistication (Hirvela & Belcher, 2001; Ivanic & Camps, 2001) and it was reported that they were actually aware of this gap (Silva, 1992). Even though many studies in the field indicated L2 graduate students' success in involvement in disciplinary communities of practice and academic writing (e.g., Silva, Reichelt, Chikuma, Duval-Couetil, Mo, Vélez-Rendón, & Wood, 2003; Gentil, 2005) their efforts in writing discipline-specific academic compositions, including theses and dissertations, with the help of only L2 writing courses aimed to gain general writing skills and sometimes conflicted with the demands of disciplinary writings were also acknowledged. Furthermore, a graduate course and its objectives for academic writing tasks remained implicit for most of the time contrary to undergraduate courses (Carson, 2001; Casanave, 2002; Raymond & Parks, 2002; Yang & Shi, 2003). In another study (Leki, 2006) the graduate students reported that they were expected to directly start writing their theses and dissertations despite the little practice of academic writing and inadequate amount of feedback provided by instructors in their disciplines.

2.1.2 Approaches to writing in EFL/ESL context. Three approaches to writing are suggested for an effective writing process by the researchers and the practitioners in ESL/EFL context. These approaches are respectively product, process and genre approaches and it is suggested that the type of students' competence level, the genre of writing, the curriculum and other factors will determine the best model in any learning context. Correspondingly, Gardner and Johnson (1997) express that "writing is a fluid process created by writers as they work…In actuality, the writing process is not highly organized linear process, but rather a continual movement between different steps of the writing models" (p. 36). In spite of the fact that the research suggested the overuse of the product and process approaches in writing process, genre approach has gained attention

and importance in ESL/EFL context in the last decade. The three approaches to writing are explained in the following parts.

2.1.2.1 The product approach. The product approach "usually involves the presentation of a model text, which is discussed and analyzed" (Klimova, 2013, p.148). In product approach, students are taught a sample of a particular type of text and are supposed to model the same construction for composing a new text. The Product Approach Model has four stages which are respectively familiarization, controlled writing, guided writing and free writing (Pincas, 1982; Steele, 2004). In familiarization stage, students study certain features of model texts and they use those features and skills as controlled practice. Students organize their ideas in the guided writing stage, and later they apply the structures, vocabulary and skills that they have learned until this stage as competent writer to produce a product. The product approach attributes more significance on the organization of ideas rather than ideas themselves and puts emphasis on end product (Steele, 2004). Badger and White (2000) argue that writing is regarded as engaging in learning the structure of language and writing development refers to an individual' final work of imitating an input, particular texts provided by teacher in the product approach.

2.1.2.2 The process approach. The process approach to writing is a model in which students are not expected to produce a final product in a single time, but rather they get involved in writing tasks with a cyclical approach including the stages of drafting, receiving feedback from their peers and/or instructors and revising their improving texts (Kroll, 2001). Contrary to the product approach, the process approach gives priority to act of writing and the promotion of language use with a variety of activities such as brainstorming and revising. Steele (2004) identifies eight stages of it as brainstorming, planning/structuring, mind mapping, writing the first draft, peer feedback, editing, final draft and evaluation. This model sees text as resource for comparison to evaluate final draft and it allows learners to produce more drafts than only one. Besides, the objectives of the approach focus on more global issues like theme and purpose of the text and developing that text rather than its structural features and it naturally fosters collaborative

learning. It assumes L1 and L2 writing similar which may lead to disregarding L2 learners' difficulties (K. Hyland, 2003).

2.1.2.3 The genre approach. According to genre-based approach, writing is regarded as a social and cultural activity in which the purpose of the writing is shaped by its context and the practices of the target community. Therefore, similar to the product-based approach, particular language and discursive features regarding a specific genre is explicitly taught to learners and is concerned with the final product (Paltridge, 2001). The genre-based approach comprises of three stages: introduction and analysis of a chosen genre, exercises for relevant language and discursive forms and the production of a text (Dudley-Evans ,1997) It is suggested that this approach promotes learners' later social communicative success (Paltridge, 2001). It targets more the reader of the text; thus, it highlights the conventions and expectation of readers in a particular discourse community that a writer needs to make use of to be accepted (Munice, 2002). K. Hyland (2003) states some of the disadvantages of this approach as the necessity of rhetorical understanding of a text for the writer and over-attention to written product along with overlooking to writing skills to compose a text. Besides, learner expression is ignored (Askehave & Swales, 2000).

2.2 Feedback

Feedback appears as one of the most essential instruments in teaching and learning contexts so that many definitions of feedback have been provided by researchers. According to Narciss (2008) feedback in any teaching context refers to "the post-response information" provided to learners in order to give information of the level of their current performance and learning so that it will enable students to realize whether their states correspond to the learning aims in a given context" (p.292). Hattie and Timperley (2007) define feedback as a piece of "information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one's performance or understanding" (p. 81). As for higher education, feedback compromises the planned comments on student's work, which hold corrective function of concerned performance (Boud & Molloy, 2013).

Some of the language learning theories and approaches constitute a strong backbone for the concept of that feedback is a prevailing notion in language learning and teaching. The theoretical support for feedback, indeed, dates back to behaviorism, one of the earliest language learning theories. The behavioristic approach sees language learning as observable changes in linguistic behavior of a learner and learning a new language is like adopting a new set of habits through imitation, practice, reinforcement and habit formation. According to behaviorist approach, feedback is recognized as reinforcement in language learning and teaching; for instance, learners are given positive feedback to assure the correct repetition of a linguistic behavior (Ellis, 1990; Lightbown & Spada, 2013). Noticing hypothesis (Schmidt, 1990, 2001), on the other hand, sees "noticing" as a crucial starting point to language acquisition and feedback acts in this process as a pointer to particular language features to be realized by learners.

According to the interaction hypothesis, the provision of feedback is crucial for instructional practice. It suggests that negative evidence as a result of given feedback promote learners' awareness of their learning gaps and restructuring of linguistic mental processes they go through, and student-instructor interaction triggers the facilitative role of feedback based on this assumption (Long, 1996). Likewise, sociocultural theory (Vygotsky, 1978) sees feedback as an essential part of learning. However, the importance it places on feedback is rather different with regard to its role in language learning process. Lantolf (2006) states that feedback facilitates bi-directional interaction between instructors and students and when feedback address to learner's current level of proficiency in language, learner can achieve higher level proficiency in that language. In a case study conducted by Nassaji and Swain's (2000), it was identified that feedback provided to a Korean learner was clearer and more understandable since it was based on the zone of proximal development (ZPD). It was also revealed in a more recent study that the students showed a development in their performance after they were delivered peer feedback in their written online synchronous interactions and feedback in the study was standardized according to the students' current proficiency level (Oskoz, 2009). Hence, both interactionist and sociocultural theories see feedback as an important element in teacher-learner and peer-to-peer interactions, not only emphasizing the relationship between expert and novice, but also as a way to raise awareness and achieve higher levels

of linguistic knowledge, thereby enabling learners to close linguistic gaps and move to the next level (Lantolf & Thorne, 2007).

Feedback has various functions in educational settings. Carless (2006) suggests that feedback acts like advice to improve current and upcoming assignments, show instructor's academic characteristics like expertise or authority, and demonstrates an explanation for a given score. Kumar and Stracke (2007) categorize the roles of feedback as three groups: referential, directive and expressive functions. Referential function considers editorial, organizational and content of student writing, directive feedback is in the form of suggestions and questions while expressive function of feedback includes marker's opinions, praise and criticism. In second language writing, feedback is the role of noticing facilitator since it is supposed to help students to realize the gap between their interlanguage and the target. Besides, it acts like output monitor to promote second language writing (Wang & Jiang, 2015).

2.2.1 Formative feedback. Assessment of students' performance may be either summative or formative. The focus of summative assessment is measurable outcomes of a performance, usually an overall score or grade. The formative assessment, on the other hand, emphasize the enhancement of learning outcomes and process to identify strengths and weaknesses for progress (Andrade & Cizek, 2006). Assessment of students' performance cannot be only dependent on summative assessment, especially in higher education context since learning process does and should continue after the point when students' performance on a specific assignment is evaluated. Formative assessment methods consist of observations, questions, portfolios, projects, discussions, or so on. As suggested by Harlen and James (1996) feedback is an integral part of formative assessment. Two types of formative feedback which are directive and facilitative is mostly used in teaching process (Black & William, 1998). Directive feedback gives specific information of learners' mistakes and improvements whereas facilitative feedback leads them in their perception and revision (Shute, 2007).

The negative effect of summative assessment and feedback which is general and given on student's work or performance to provide an overall score was pointed in the literature (Williams, 1997). Shute (2007) argued that formative feedback was regarded

positively by learners and that it enables students to notice the gap between their current level and the desire goals, reduces cognitive loading put on students' shoulders and guides them for correct task strategies. In his meta-analysis with over 1,000 studies, Hattie (2009) compared the impact of many influential factors on student achievement and drew the conclusion of that formative assessment and feedback are among the most predominant elements. Ramsdem (2003) highlights the importance of feedback in assessment as being "impossible to overstate the role of effective comments on students' progress in any discussions of effective teaching and assessment" (p. 187). Instructor's general comments such as 'good', 'shows insight' or 'well referenced' does not really help for the development of increased understanding. There remains a gap "for students to develop the capabilities to operate as judges of their own learning" (Boud & Molloy, 2013, p. 1). Feedback that leads student to become aware of gaps in knowledge and understanding enhances further learning rather than immediate tasks (Glover & Brown, 2006) along with an increase in students' confidence and self-esteem (Boud, 2007). Feedback that is common and predictable, on the other hand, can create an obstruction for the sustainability of learning because they do not provide specific information which will activate knowledge building and development of capabilities in learners (Carless, 2006; Thompson & Lee, 2012).

2.2.2 Strategies for effective feedback. The interaction between students and instructors is built with the provision of feedback in most of the educational settings, particularly in higher education institutions. Therefore, the quality of feedback is significant in the language learning process and crucial for learners' achievement (Gibbs & Simpson, 2004; Hattie & Timperley, 2007). Brown (2007) emphasizes the significance of quality feedback with the words of "the single most useful thing we can do for our students" (p. 1). As students are provided with effective feedback, the engagement of students with knowledge occurs in deeper level (Hatzipanagos & Warburton, 2009) and students gain necessary skills to have control of and maintain learning experience constantly (Boud, 2007). In order to reduce the gap between learner's current proficiency and desired outcomes, Hattie and Timperley (2007) proposed a model for effective feedback. As they suggested, three questions need to be raised and answered to provide

effective feedback: Where am I going, which is referred as feed up, how am I going which is called feedback and where to next or feed forward in their model (pp. 86-90). In order for feedback to be effective, learners should be informed about what is expected from them, feed up; should have knowledge of what they have done right or wrong based the assessment of their final product in relation to expected goals, feedback; and should be given advices what they need to progress, feed forward.

Apart from Hattie and Timperley's effective feedback model, some researchers have specified several strategies and conditions to provide effective and quality feedback to learners. According to Gibbs and Simpson (2004), successful feedback needs to be a) sufficient in aspects of quality and quantity, b) relevant to students' performance rather than students themselves and characteristics, c) timely; addressing present and further learning and assistance, d) appropriate to the purpose of the assignment and its criteria, e) appropriate; relevant to students' understanding of what they need to do, f) available to students, and g) acted upon by students (pp.17-24).

Similarly, Nicol and Macfarlance-Dick's (2006) identify the characteristics of effective feedback as clarifying positive sides of students' performance, creating a space for learner's self-assessment and reflection, providing detailed and quality information for students about their learning, encouraging teacher-student discussion and interaction, gaining positive attitudes and self-esteem, reducing the gap between students' present and future skills and performance, and provision of useful feedback to instructors in order to enhance instruction. The features that effective feedback in writing should have are specifically illustrated as manageability, meaningfulness, timeliness, and constancy by Hartshorn (2008). Manageability refers to how much time a teacher spends on giving feedback and meaningfulness emphasizes content over form so that students can concentrate on the communicative purposes of writing (McGarrell & Verbeem, 2007). As for timeliness, it is the promptness of feedback while constancy means continuous practice in order to achieve improvement in writing (Leki, 1990).

2.2.3 Feedback in writing. In the field of L2 writing, feedback corresponds to several different functions. Hyland and Hyland (2006) point out that feedback has a significant role in ESL students' writing progress and their motivation levels due to the

fact that it is a key factor to support students and boost their confidence in a learning environment. Apart from its assessment function, it also serves a pedagogical role "…by pointing forward to other texts students will write, assisting students to work out the text's potential and to comprehend the writing context, and providing a sense assisting students to work out the text's potential and to comprehend the writing context, and providing a sense of audience and an understanding of the expectations of the communities they are writing for" (p. 206). Effective feedback can help to promote the interaction between student-teacher and student-student and to produce revisions, resulting in the improvement of language learning and the contribution to the overall learning process (Kluger & Denisi, 1996; Séror, 2011). Instructor feedback is effective in understanding the pedagogical and evaluation intentions and expectations of the teacher and the institution, determining the amount of student participation in the learning process and assessing the revision responses expected from the learners (Parr & Timperley, 2010). The recent research in L2 context indicates that improvement of linguistic knowledge in writing is achieved when students completely new pieces of writing with the support of feedback (Ellis, Sheen, Murakami, & Takashima, 2008; Sheen, 2010) as well as in a drafting process (Ferris, 2006). Providing feedback to students, on the other hand, requires vigorous effort, meaning instructors need to specify the required revisions in terms of components of writing, errors to highlight, the explicitness, and the mode of feedback. As stated by Seker and Dincer (2014), the provision of feedback can assist an instructor to "…put emphasis on form, content, discourse, punctuation, or any other language item in writing in isolation or in combination with multiple aspects." (p. 73)

The extensive research in the L2 writing has examined feedback in terms of the source of feedback (instructor, peer, or both at once), the focus of feedback (the product or the process), the degree of explicitness (direct or indirect) of the feedback (e.g., Ferris & Roberts, 2001; Bitchener, 2008) Additionally, there have been studies on feedback regarding the syntactic form and pragmatic form of a writing (e.g., Ferris & Roberts, 2001; Elola, 2005). Some research, on the other hand, has been conducted to probe the mode of feedback (written or oral) (e.g., Haneda, 2004; Sheen, 2010); and the medium for the delivery of instructor comments (such as pen, paper, student-teacher conference or technology-integrated) (e.g., Ducate & Arnold, 2012; Tuzi, 2004). Apart from the

mentioned aspects, the writing research also investigated feedback in terms of its assessment role and the direction of the literature, in the last decades, diverted from summative feedback, which emphasizes the product, to formative feedback, whose focus is on the writing process and students' future practices as stated by Hyland & Hyland (2006).

In order to deliver response to writing tasks in educational settings, individual oral feedback sessions have been regarded as the most favorable standard and have been investigated for many years (Black & William, 1998; Jordan, 2004). However, it was not convenient enough to provide feedback individually more than two or three minutes for excessive class sizes despite its interactional and conversational nature (Anson, Dannels, Laboy & Carneiro, 2016). The other practice of student access to quality feedback on their writing is written commentary provided by instructor as a response to students' papers, on which the large body of research of feedback on writing has been constituted (e.g., Straub, 1997; Stern & Solomon, 2006; Butler, 2011).

Similar to oral feedback sessions, written commentary has several limitations as well. Students may not exactly understand the instructor comments and may develop negative feelings toward seemingly critical responses. Besides, written feedback is limited in terms of quantity of delivered comments and quality of interaction between student and teacher (Straub, 1997; Beach & Friedrich 2006). A study (Stern & Solomon, 2006) examining teacher feedback on composition courses revealed that the instructor's written feedback included too general comments and was too brief because of time limits and could not promote an effective revision process during these courses. This challenge of written feedback as an integral part of writing courses was supported with the argument of a gap between the ideal and the reality occurring from heavy schedules, high numbers of students and lack of sufficient resources (Butler, 2011). It was also emphasized that producing clear and precise feedback is difficult along with making sure of it is brief and efficient to be practical (Carless, Salter, Yang & Lam, 2011; Crook, Mauchline, Maw, Lawson, Drinkwater, Lundqvist, Orsmond, Gomez & Park, 2012). This aligned with the students' statement of that written feedback impedes the clarity of feedback since it may be misinterpreted (Clinefelter & Aslanian, 2012). Similarly, Weaver (2006) points out that textual feedback remained vague, unclear, inconsistent for students as well as it did not

provide enough guidance. Receiving and using feedback is crucial in writing and learning process (Race, 2001; Gibbs & Simpson, 2004); however, it is obvious that written feedback may not be effective as imagined (Carless, 2006; Orsmond & Merry, 2011).

2.3 Technology-Enhanced Feedback

Feedback, especially instructor feedback, is regarded as one of the key elements and the most preferable option to provide support and guide students or learners in formal learning (Lizzio & Wilson, 2008; Garrison, 2009). It was notified that teachers and instructors mostly utilize written feedback to assess student performance, yet written feedback has been criticized due to its lack of details and clarity of comments and examples (Duncan, 2007). In addition to this, written feedback has limitations to provide students with personalized feedback in populous teaching environments and in circumstances where learner-instructor contact was restricted and the gap of time and location exists (Higgins et al., 2001).

With the rapid development of Web 2.0 tools and new digital technologies, there has been a turning point for instructors, and they have started to engage in multimodal feedback in order to eliminate or lessen the limitations of traditional written feedback (Grigoryan, 2017). Consequently, alternative feedback modes like audio/video recorded feedback and group podcasts have got attention and started to be used in the field of education, including language learning and teaching (McCarthy, 2015). The first studies with the inclusion of technological tools have focused on electronic feedback on students' writing (e.g., Tuzi, 2004; Ene & Upton, 2014) with track changes and inserting comments on students' Word documents. For example, Ene and Upton (2014) investigated the focus of electronic feedback given for academic purposes, with track changes and comments on an MS Word file. They found that the instructors mostly provided feedback regarding grammar and organization followed by vocabulary. However, it was also specified that the learners benefited from grammatical corrections rather than the others regardless of the context of feedback, which were either explicit or implicit. In another study on electronic feedback, Tuzi (2004) compared oral feedback to electronic one, finding that L2 learners never regarded electronic feedback as the primary source of changes they

made in their revisions even though they utilized it for additional information or increasing the impact of a specific section.

Audio or video recordings for feedback delivery on the other hand, have been used in higher education in recent years, and it has been pointed out that the use of these alternative modes have been effective to students for a range of reasons such as time efficiency (e.g. Nortcliffe & Middleton, 2008; Sarcona, Dirhan & Davidson, 2020) higher student engagement (e.g. Ice et al., 2007), personalization (e.g. Merry & Orsmond, 2008; Henderson & Phillips, 2015) and richer format (e.g. Cann, 2007; West & Turner, 2016). Alternative feedback modes allow instructors to give feedback to individual students, small groups of students, or even the whole class in more convenient way (Borup, West, & Thomas, 2015). Using alternative feedback modes for writing assignments together with or in place of written feedback can increase the student engagement and get them involved more seriously in the process (Ice et al., 2007). It is argued that the inclusion of multimedia tools in teaching is crucial and instructors need to acquire related skills as technology has become the language of students of the current generation to learn, understand and make use of a new thing (Mayer, Hegarty, Mayer, & Campbell, 2005). This new generation is called "digital natives" and technology is one of the most suitable strategies to motivate them (Prensky, 2005). Moreover, the inclusion of technology in the feedback process may "provide the innovative edge that can help students engage more effectively with their feedback" (Crook et al., 2012, p. 387).

In addition to the findings of the growing literature on technology-enhanced feedback, Mayer's cognitive theory of multimedia learning has some relevance to technology-enhanced feedback. Mayer (2001) defined multimedia learning as "the presentation involving words and pictures that is intended to foster learning" (p. 3) and it holds two main goals which are remembering and understanding. In this sense, he claimed that using two modes (verbal and visual) of presenting information is better than using only one. In order to develop effective learning content, Mayer (2020) underlined fifteen principles of multimedia design which are respectively multimedia principle, coherence principle, signaling principle, redundancy principle, spatial contiguity principle, temporal contiguity principle, segmenting principle, pre-training principle, modality principle, personalization principle, voice principle, image principle, embodiment principle,

immersion principle and generative activity principle. It is suggested that as the feedback is an inseparable element of learning content, the quality of feedback can be improved with the integration of these multimedia principles along with the development of instructional materials.

As seen, cognitive theory of multimedia learning and the existing groundwork seem to build on and justify the use of technology-enhanced feedback in learning and teaching context. Yet, technology-mediated feedback still remains under-researched in the field of language learning and teaching, especially for its effect on L2 learners' performance despite its potential advantages and the theoretical background.

2.3.1 Audio feedback. As previously mentioned, the text-based and technology-enhanced feedback have different qualities. For instance, the written language has some features such as spelling and morphological cues while tonal and supra-segmental features are available in technology-enhanced feedback. Regarding technology-enhanced feedback research, several studies have examined the students' attitudes towards and perceptions of audio feedback. Some of these studies found that the audio feedback has a broad acceptance among students since it is more detailed and personalized compared to written feedback (e.g., Merry & Orsmond, 2008; Lunt & Curran, 2010). Gould and Day (2013) investigated student perspective of audio feedback in a mixed method study revealing that most of the nursing degree students valued audio feedback as it was like a mini tutorial on their writing assignments and they felt a greater sense of personalization while listening to audio feedback. Contrary to these expressions, less students preferred audio feedback for assessment purposes. Several instructors shared varied opinions of audio feedback ranging from feeling shy during the provision of feedback to the practicality of its use. Northcliffe and Middleton's (2008) research reported that most of the students' preference for feedback concentrated on audio feedback and that providing feedback with audio files was appreciated for being less stressful and time consuming by the instructors. This was supported by Merry and Orsmond's (2008) study which compared written and audio feedback and the results illustrated that audio feedback was more favorable to discuss more complex points and to underline specific aspects by using the right volume or tone of voice. They further discussed that students valued audio

feedback rather than written feedback, seeing it is of good quality, easier to understand, more in-depth and more personal.

Lunt and Curran (2010) addressed the advantages of audio feedback which were sorted as practicality, quick timing, better quality and large number of details. Nevertheless, they also discussed the issue of using audio feedback for classes including students with hearing loss or impairment. They suggested that teachers need to be aware of their students' disadvantages and characteristics so well that necessary arrangements could be done before creating any problem in teaching environment. Similarly, Emery and Atkinson (2009) underlined the idea of that in-depth comments and review were provided via audio feedback as it included further suggestions to improve students' works other than only pointing problematic parts. The findings revealed students' preference of audio feedback over written feedback as they benefited more from audio feedback for improvement of their work. Ice et al. (2007) reported a greater understanding of comments in their research where students were given audio file feedback on their writings in asynchronous online university courses and interviewed for their utilization of the feedback. Furthermore, the students expressed increasing retention of content with the course and its application thanks to audio feedback and a feeling of being more cared by instructor. Lefroy (2020) carried out a case study to explore students' experience of audio feedback as a formative assessment by comparing it to written marking. The findings of the study suggested a greater preference of audio feedback over written feedback as it was believed to be more effective. This was associated with social and relational characteristics of audio feedback, allowing students to easily cope with criticism, fostering active participation and providing clearer and in-depth feedback. Additionally, successful promotion of emotional engagement and increased connectivity between students and their instructor were discussed and identified among the advantages of audio feedback considering learner experiences of feedback in higher education context (Rasi & Vuojärvi, 2018).

Rawle et al. (2018) examined the utility and effect of the audio feedback in their study, and the data was collected from both teaching assistants (TAs) and students. Similar to the previous findings, students reported that audio feedback was constructive and engaging, while both TAs and students expressed that audio feedback included more

personal comments than written feedback. In another study, Middleton, Northcliffe and Owens (2009) focused on the way audio feedback may be used as a tool for facilitating personal and autonomous knowledge and they emphasized that audio feedback allowed more than words, the things needed for deep communication and comprehension. In this regard, "tone, expression, pronunciation and emphasis add to the depth of this means of communication" (McCarthy, 2015, p.155). Likewise, audio feedback was found to be efficient in the revision process of students' assignments in an online learning environment (Rasi & Vuojärvi, 2018). Rassaei (2019) investigated the effects of computer mediated text-based and audio-based corrective feedback on L2 development and the results suggested that audio-based CF was significantly more effective to promote L2 development.

Even though the existing literature indicates positive reviews on audio feedback, several studies showed some contradicting results as well. For instance, a study by Fawcett and Oldfield (2016) with undergraduate students probed into experiences and expectations of audio and written feedback in a first-year degree course and no significant differences, in contrast to trend tendency of literature, were identified in students' experiences of audio and written feedback. Besides, they showed stronger preference for written feedback in the aspect of students' expectations of feedback types. Similarly, Sarcona et al. (2020) found in their study that the majority of students preferred written feedback for a variety of reasons including being more formal and concise, more constructive to improve their work, easier to grasp and more convenient to go over again in revision process although they also mentioned that they appreciated higher engagement and personal aspect of audio feedback as they felt being cared about by their instructor.

In a study by Morris and Chikwa (2016), the students preferred written feedback over audio feedback despite of their positive perceptions of audio feedback. The primary reason of this preference was the convenience of written feedback enabling students to reread and refer back more easily compared to relistening audio recording while preparing another assignment. Likewise, Brearley and Cullen (2015) stated that students experienced difficulties in matching teacher comments to the specific parts of their own work and in taking notes while listening to audio recording. Strobl (2015) explored students' perceptions of online feedback modes for a writing task in her research, and the

findings indicated a dichotomy between the participants' observed performance and an underestimation of their own progress, which resulted from a mismatch between their expectations of feedback modes and the characteristics of the feedback.

Most of the studies discussed so far have provided an evidence for potential benefits of audio feedback in a number of learning and teaching contexts including ESL and EFL environments. However, the review of related studies on audio feedback also suggested few unclear circumstances that may limit these advantages. Moreover, the existing studies have mostly looked into either students' or other teaching stakeholders' perceptions of audio feedback, and most of the previous studies have yet to systematically analyze the effect of audio feedback on writing, particularly academic writing. To address these issues and further evaluation may help to improve the utilization of audio feedback in learning and teaching context and to minimize possible limitations associated with it.

2.3.2 Video feedback. Considering alternative feedback modes to written feedback, it appears that audio feedback was regarded as the first alternative option to traditional textual feedback; however, video feedback has emerged as another possible choice for the provision of teacher commentary and is claimed to be an exponent of deeper and richer feedback to students. Abrahamson (2010) points out that video recordings can serve as a visual medium for demonstrations and they offer convenience to students to replay them whenever they wish since they may be stored as permanent records. Even though this claim remains uncertain in terms of the impact of video feedback on the improvement of student performance, it is stated that video feedback appeared more meaningful than text-based comments to the majority of students in various studies considering a number of advantages it possesses (Thompson & Lee, 2012).

Proponents of video feedback point out that providing feedback through videos enables students to listen to the comments for their work at their own pace, resulting in getting more benefit of them in their academic practice and having better understanding of the assessment results (Brick & Holmes, 2008). Furthermore, Kerr and McLaughlin (2008) add that video feedback has a visual dimension as well as it improves the student engagement with feedback (Crook et al., 2012). As for the communication between instructor and students, it "serves as a better vehicle for in-depth explanatory feedback

that creates rapport and a sense of support for the writer [student] than traditional written comments" (Thompson & Lee, 2012, Abstract). It is noted by Cann (2007) that students appreciate using videos for feedback delivery and a richer format for feedback can be provided by video recorded feedback rather than audio or written techniques. This idea is supported with the view of that video feedback can be easier to understand the messages it conveys and apply accordingly (West & Turner, 2016). Similarly, Bertolo, Carlton and Jones (2012) investigated the use of video recordings as a way of providing exam feedback and drew a conclusion of the fact that video feedback was a practical and convenient alternative to make the material more attractive and capturing for the students.

Another study by Turner and West (2013) explored students' and instructors' perceptions of using videos for giving feedback. Students received feedback as online videos which was considered as a part of the course assessment process. The findings of this mixed method research reported that considerable portion of students preferred video feedback along with the remark of personalization of assessment process and improvement of comprehension. Most of the students valued video feedback rather than written feedback and noted that they completely understood the feedback obtained, which clearly coincides with the claim of the fact that using technology can "provide the innovative edge that can help students engage more effectively with their feedback" (Crook et al., 2012, p. 387). In a similar study, student and instructor perceptions of text and video feedback in technology integrated courses is investigated (Borup et al., 2015). The analysis of the results showed that students and instructors found video-based feedback more supportive and longer. However, it seemed that both students and instructors favored text-based feedback rather than video-based one. Correspondingly, Hall, Tracy and Lamey (2016) probed into the benefits of video feedback for teaching the subject of philosophy. Based on the results of self-report student surveys, they argued that video feedback enables feedback provider to more easily explain and illustrate philosophical goals and methods so that it is favorable for formative feedback and increasing student engagement compared to traditional feedback modes. As for particularly teaching philosophy, it aids students to realize the significance of philosophy since it is possible to model the practice of philosophy subject. They made further

comment on that video feedback helps to remove the students' cognitive and affective barriers that they develop for learning the subject of philosophy.

As seen from the previous studies, a considerable amount of the existing literature on the video feedback has focused on student and instructor perceptions towards the use of it. Concerning the efficacy of video feedback on student writing, a quasi-experimental study was carried out by Grigoryan (2017) which investigated the effect of a combination of audio-visual and text-based commentary and text-based comments in online writing courses on the promotion of following student revisions and the overall writing improvement. The findings indicated that the group which was given multimodal response to their writing outperformed the text-only group in the comparisons of first and final drafts in areas of audience and purpose. Furthermore, the use of combination of audio-visual and text-based feedback showed statistical significance on the categories of content (p = .08) and final draft quality (p = .06) which was evaluated as a medium effect. Another study by Odo and Yi (2014) explored the use of Voice over Internet Protocol (VoIP) (e.g., Skype) software to deliver instructor's comments on international doctoral students' academic writing. The participants of the study who were enrolled in a TESOL Education program at a large urban university in the US had six feedback sessions during which the students engaged in think-aloud sessions. After each feedback session, they were expected to make revisions regarding their academic writing presented through several online modes. The data collection included semi-structured interviews as well. The participants reported that video feedback allowed more bi-directional and negotiated process of providing feedback and that they benefitted from those feedback sessions as micro-mentoring process. Besides, other findings of the study revealed that video feedback had the potential to facilitate the development of academic writing.

In addition to all, Henderson and Phillips (2015) carried out a research study exploring video feedback as an assessment tool for projects and writings of postgraduate and undergraduate students in the field of education. The participants were provided with five minutes-long video feedback discussing their work. The results of the study revealed that video feedback was favored by the majority of the students and instructors for being specific, reflective, motivating, time-efficient and appreciating effort and identity. As well as its strengths, the weaknesses of video feedback were also addressed. Namely, the

participants mentioned that they felt anxious when they started to watch videos and that they had hard time while matching instructor's comments to the points in the work. In contrast to all these positive reviews of video feedback and advocating results of the research, Rodway-Dyer, Knight and Dunne (2011) discussed that students perceived video feedback as less clear among three feedback mode (audio, video and written).

It can be implied from all these studies that video feedback as one of the current alternative feedback modes has certain benefits, for example, in terms of clarity of feedback, promotion of students' motivation and positive emotions and development of rapport between student and feedback giver; but it also holds some potential limitations such as feelings of uneasiness and impracticality to match comments to the parts of student work. Therefore, it is crucial to investigate the use of video feedback within a range of different learning environments to address these limitations and to gain new insights, especially focusing on L2 learning and teaching.

2.3.3 Screencast feedback. Screen casting which is rather a recent concept as a technology-enhanced feedback type describes digital video-recordings including both on-screen activities and recorded narration of them. The narration can be added either during the creation of videos or later when the recording has been completed (Carr & Ly, 2009). The original definition of screencast referred to "a video of screen activities, including mouse movements and clicks" (Peterson, 2007, p. 3). Video tutorials on YouTube teaching how to use a specific software or narrating a subject are some illustrations of screen casting technology. Along with its popularity with software developers, gamers, and information technology specialists, screen casting technology has grabbed the attention of the educators to integrate it to the educational settings and has been studied in EFL/ESL context due to its potential to create audiovisual records of a number of language-related tasks and actions completed by instructors and learners (Hamel & Caws, 2010; Mathisen, 2012).

As well as recordings of actions and processes of subjects and tasks, screen casting has been used as a current way to provide feedback on students' performance in the field of education and the research suggested that it holds variety of advantages compared to traditional ways of giving feedback to learners (e.g., Sugar, Brown & Luterbach, 2010;

Crook et al., 2012; Ali, 2016; Anson et al., 2016; West & Turner, 2016). As Evans (2011) pointed out, there is emerging groundwork indicating benefits of the use of screencast for improvement in learning and teaching. For instance, individualized screencasts were used to give feedback to assess learners in the study of West and Turner (2016) which aimed to find out students' preferences towards different modes of providing feedback. The results of the survey given to a large number of participants indicated a tendency (61% of the respondents) to prefer screencast feedback over written feedback. Along with this clear preference, the research participants stated the advantages of screen casting technology as the more clarity and less ambiguity than other forms of feedback, improved quality and quantity of provided feedback and greater rapport between students and instructor. They also mentioned that they felt more included in and had better and provided insight into the assessment process. Besides, screencasts provide space to instructor to demonstrate behaviors and operations as well as learners have the chance of displaying screencast content multiple times which is regarded more preferable and convenient (Sugar et al., 2010).

In another study conducted by Crook et al. (2012), the potential to enhance feedback experience of both instructors and students by using technology was explored. The feedback was provided with brief videos to students and instructors were given a post-use survey to complete. The results of the research enlightened a number of issues associated with feedback, varying from the quality of feedback to the level of students' engagement. The participant instructors mentioned various advantages of using video feedback such as feasibility of replaying videos, accessibility, similarity to face to face sessions and high level of student notice of feedback. They added that they would like to use videos to give feedback in their future classes as well. The students in the research also identified several benefits of video feedback, namely that it was more detailed and informative, underlined important points better compared to other ways of feedback (e.g., written or oral) and allowed for the visualization of the task.

Concerning writing, particularly in higher education context, recent technological tools has introduced and offered new ways to respond to students' work even though educators still make use of conventional methods of marginal and end comments on students' writing on either hard copy of papers or digital files marked up with comments.

As one of these contemporary tools, screencasts enable teachers to record their voice to assess students' writing and to physically point out specific features and highlights related to students' own works in order to progress their development as writers. Screen casting technology carries significant pedagogical implications for giving response to student writing in academic setting. (Anson et al., 2016). Regarding the pedagogical effectiveness of screencast technology on writing, a mixed-method research (Ali, 2016) was carried out to find out the impact of screencast video feedback on students' writings in an academic writing course. Roughly equal numbers of the participants were assigned to the experimental and control groups, which were provided with respectively screencast feedback and written comments regarding the content, organization and structure of their writings (higher order concerns). However, it was also noted that the experimental group were given written feedback for accuracy of their writings (lower order concerns). The findings of two writing tests revealed that the experimental group had better performance in the posttest in terms of higher order concerns and overall writing skill. In addition to two writing tasks, a questionnaire was also administered to the experimental group in order to explore the students' perceptions towards screencast feedback. The questionnaire results highlighted that the students in the experimental group remarked screen casting with positive adjectives such as supportive, specific, constructive and engaging. Nevertheless, several technology-related challenges like slow loading time and inability to download videos were also pointed out. Similarly, a case study (Denton, 2014) was conducted to find out whether screencast was more effective on the academic performance of undergraduate students in a teacher education course. The findings of the study suggested that the students benefited more effectively from screencast feedback for corrections on their writing assignments. Moreover, they expressed that screencast comments to their writings guided them to identify what they were doing right or wrong and that they would prefer to receive this type of response compared to traditional feedback types.

In addition to these studies, some studies aimed to understand to what extent instructors' written and oral feedback is affected by tool that is used and whether the medium of feedback has an impact on student revisions. For instance, a case study by Elola and Oskoz (2016) expanded existing literature of technology-mediated feedback and

investigated multimodal feedback and written feedback in an advanced writing course. On different drafts of a narrative essay, the students were given multimodal feedback with a screencast tool whereas written comments were provided on a Word document. As the results showed, the instructors' comments were different based on the choice of tool in terms of quality and quantity. The screencast tool allowed the instructor to include additional and longer comments regarding global aspects of the drafts like content, structure, and organization. In written feedback, on the other hand, it seemed that it was more explicit, and the focus of the instructor was on form. As for the preferences of the students, it changed according to different aspects of essay. They seemed more satisfied with screencast feedback in terms of content, organization while they preferred written feedback for form. Correspondingly, efficiency of screencast and written feedback in an ESL writing course was explored and compared in a mixed method study done by Cunningham (2019). The study employed observations and interviews as well as surveys and draft comparisons to illuminate students' perspectives of use of technology-enhanced feedback along with its potential impact. The findings elucidated that both screencast and text feedback were useful and successful for their writing performance. However, the students welcomed screencast feedback over written feedback, considering its clarity, practicality and increased comprehension. This was also supported by observations which revealed that screencasts allowed students to revise their writings in less time, and to remain in the target language whereas it was not the case with the text feedback.

In another study done by Anson et al. (2016) on facework, feedback interventions and different response modes to student writing, the participants perceived screencast feedback as beneficial to their learning process and found it helpful to their understanding of received feedback which facilitates positive connection between them and instructor as well as it develops transparency for the assessment process and teacher's identity, shows his/her feelings and supports assessment with the visuality and establishment of a conversational tone. As the research suggested, the screen casting, as a response mode, was assumed to attribute apparent, relational and emotional 'digitally mediated pedagogical identities' to students and instructors as a result of evaluation environment that it built so that students experienced more individualized learning process.

Most of the groundwork on screencast feedback have made comparisons of written feedback and screen casting. In several studies, on the other hand, text-based and screencast feedback were used together. For example, Mathieson (2012) explored students' perceptions of audiovisual feedback in online statistic and research methods courses by using screencast technology. The research found that students were more satisfied with combination of text and screencast in the process of receiving feedback as it was regarded as more effective way of interacting with instructor, perceived more real and personal and helped better to build sense of community.

As seen, the use of screen casting in the learning and teaching context has been mostly reviewed positively. However, screencast technology has some limitations as well as its considerable promises. These limitations are technical challenges such as producing, encoding, and transfer of large media files to students (Brick & Holmes, 2008). Even though the solutions like the use of DVDs or USB keys to transfer those screencast files, the inconvenience of attachment size of e-mail servers are still counted as an obstacle for teachers and students to adopt screencast technology in the class (Stannard, 2007; Silva, 2012). Surely, it may not be feasible and practical to use screencast for extensively large sizes of class because it takes longer time to provide screencast feedback on students' work or performance than written feedback (Mathieson, 2012).

2.3.4 Studies on a comparison of two different technology-enhanced feedback types. Although most of the groundwork on technology-enhanced feedback types compared one specific mode (audio, video or screencast) to written feedback, there have been several studies that included two different modes of technology use while providing feedback to learners and made comparison of them (McCarthy, 2015; Orlando, 2016; Luck, Lerman, Wu, Dupuis & Hussein, 2018). For example, McCarthy (2015), in a research project, evaluated written, audio and screencast (referred as video feedback in the study) feedback models which were used to assess summative tasks of digital media students at a university in Australia. The main aim of the study was to identify weaknesses and strengths of these feedback types and to find out which model contributed to students' academic performance more than the others. The data were collected in first year course with 77 students and through online survey to get insight into the participant students'

reflection of each models of feedback. The findings align with the previous studies in regard of that the advantage of audio feedback was to be personalized and screencast clarified assessment comments most. As for the disadvantages, the audio feedback seemed less powerful compared to screencasts and file size and downloading were specified as weaknesses of the latter. The written feedback was criticized for being less detailed. A noteworthy finding of the research was that the students preferred the audio feedback as the last option to receive feedback for assessment.

In another study, Orlando (2016) compared text, voice and screencast feedback types to explore instructors' and students' perceptions of all three feedback modes provided to weekly assignments. Most of the faculty members participated in the study chose screen casting over voice and text to provide feedback as they put forward that screen casting naturally address higher-level issues in writing whereas lower-level issues are more likely to be highlighted with text comments. Contrary to faculty members' preference, the students ranked text feedback as their highest preference rather than the screencast and voice feedback. The findings of a similar study to explore the use of digital feedback by providing written, audio and video feedback to students in three different subjects area for their written assignments indicated that audio and written feedback were considered as way more useful than video feedback. The main reasons of this positive perception of audio feedback were attributed to the depth, the clarity and the easiness to comprehension of commentary (Rodway-Dyer et al., 2011). However, it was striking to observe that the students incorporated feedback into their writing assignments when it was given via videos. The last study to be mentioned made use of two models of technology-enhanced feedback was carried out by Luck et al. (2018) and it examined written, vocal and video feedback in a teacher training program. Six special education teachers were provided with either of three models in three different experiments. Concerning the effectiveness of each model on teachers' performance, all feedback types were similarly effective to improve their role-playing sessions. However, all of the participant teachers chose vocal feedback as their first preference to receive comments from the researcher regarding their performance.

The existing literature have identified different views and conclusions regarding audio feedback, video feedback and screencast feedback. The general finding from these

studies is that technology-mediated feedback types have promising benefits such as provision of detailed and more meaningful feedback, higher student engagement in lessons, improved sense of rapport between students and instructors to promote language learning and writing. However, the studies also mentioned several drawbacks including technology-related problems and problems with referring comments to specific sections of writing. As seem, most of the studies delved into students/learners' and/or other stakeholders' perceptions of technology-mediated feedback and few studies looked into the effect of these feedback types. Furthermore, no research has been carried on the use of these alternative modes in graduate level with academic writing to the knowledge of the researcher. Therefore, it remains unclear if these potential benefits and drawbacks of technology-mediated feedback types would be generalizable to this language use context.

Chapter 3

Methodology

In this chapter, the methodology of the present thesis study is described. The detailed information regarding the participants, setting, data collection tools and procedures, data analysis of the study are given in the following sections.

3.1 Research Design

The present study aimed to explore the impact of audio feedback on graduate students' academic writing achievement and their perceptions of audio feedback. For the purposes of the study, it was conducted as a mixed methods research which is defined as a research method which focuses on collecting, analyzing, and mixing both quantitative and qualitative data and using their procedures in a single study or series of studies (Creswell & Clark, 2011). As well as deciding on adopting a mixed method approach for a study, choosing the appropriate design is also essential. Creswell (2012) classifies four major types of mixed methods designs as the convergent design, the embedded design, the explanatory design and the exploratory design. The convergent design collects and analyzes quantitative and qualitative data at the same time without any prioritization. In the embedded design, quantitative or qualitative data collection has the foremost importance while the other is to obtain complementary data. Quantitative data are followed by qualitative data collection and examination to explain the initial one in the explanatory design. As for the exploratory design, on the other hand, quantitative data is developed through the results of qualitative data to justify and build on it. Since the present study aimed to find out the effect of audio feedback on graduate students' academic writing and their perceptions of audio feedback, the convergent design and the explanatory design of mixed methods approach were employed, and the collection and analyses of quantitative and qualitative data were carried out at the same time without assigning any

prioritization to either of them at some part of data collection process while some of the semi-interview questions were shaped after the analysis of quantitative data.

A quantitative method was carried out in order to measure the statistical difference in graduate students' academic writing achievement based on the type of feedback provided and to see the statistical difference in their preference of audio feedback. Therefore, the graduate students' academic writing achievement scores were analyzed, and they were subjected to two surveys for their feedback preference scores. As for the qualitative part, the graduate students' second drafts of each reflection papers were analyzed based on an adapted draft analysis rubric developed by Hall (1990) in order to get insights into to what extent the students revised their academic writing assignments after they were given audio and written feedback as well as to discuss the impact of audio feedback with more reliable data. In addition, two open-ended questions and semi-structured interviews with the graduate students were included in the qualitative data collection process as the explanatory process was considered necessary (Table 1).

Table 1

Overall Representation of Procedures

Research Questions	Data Collection Instruments	Data Analysis
Is there any difference in terms of graduate students' academic writing achievement as a result of written feedback and audio feedback?	Overall Achievement Scores of Reflection Paper Drafts	Descriptive Statistics and Inferential Statistics (Mann Whitney-U Test)
To what extent does audio feedback have an impact on the development of graduate students' academic writing?	The Revisions in the Student Drafts	Document Analysis

Table 1 (cont'd)

What are graduate students' perspectives of audio feedback and written feedback for academic writing?	Semi-structured Interviews Open-ended Questions	Content Analysis
Is there any change in graduate students' preferences towards audio and written feedback for academic writing in terms of a) usability of feedback, b) efficiency of feedback and c) students' feedback preference?	Pre- and Post-Feedback Preference Surveys	Descriptive Statistics and Inferential Statistics (Paired Samples t-test)

3.2 Setting and Participants

In this section, the setting and the participants are explained in detail. The setting is divided into two sub-headings as contextual background and academic background.

3.2.1 Contextual background. The present study was conducted in the Graduate School of Educational Sciences at a foundation university in Istanbul, Turkey. The university has six campuses over Istanbul province. The institution hosts more than 25,000 students in undergraduate, graduate and associate levels along with over a thousand foreign students. It consists of nine faculties; one school of languages and three vocational schools four graduate schools provide post graduate education.

The Graduate School of Educational Sciences is located in the main campus of the university in Beşiktaş. This institute offers MA and PhD programs with thesis and non-thesis options in the field of education. Educational Technology, English Language

Teaching, Early Childhood Education and Guidance and Counseling are some of the offered programs. The mediating language of the programs are either Turkish or English. With the education and training they provide, the Graduate School of Educational Sciences aims to improve teachers, novice teachers and educators' theoretical knowledge of their expertise area and to enrich classroom activities with scientific approaches, to increase the quality of teaching practices and, thus, to increase the quality of teaching and learning environments for all partners in this process.

All the students at this foundation university are registered to an online learning platform called "itslearning" with the usernames and passwords given to them during their registration to the university. Instructors use itslearning platform to share course materials, to open discussion boards, to make announcements, to communicate with students and to assign course tasks. Students can upload their assignments and follow the schedule of their online class meetings as well as they access to the link to those meetings. Additionally, instructors can assess students' tasks by using several different scales and give feedback by either adding comments or recording their voice.

3.2.2 Academic background. The participants of the current study were enrolled in an elective course which was offered in master's degree during spring semester of an academic year. The aim of the course was to prepare in-service teachers and MA students to use computer technologies and other media into their teaching practices, to donate them with related theories, issues, practices and pedagogical implications of computer assisted language learning (CALL), to design instructional materials by using computer technology and make evaluation of these materials along with expecting students to be able to propose a proper research plan. The design of the course was mostly based on collaborative learning and project-based learning so that students had to work in groups for some projects in addition to their individual tasks.

As specified in the course syllabus, it required students to write two reflective papers, annotated bibliography, book review, and to do demonstrations and presentations of several apps and tools. Besides all of these, students were expected to find a research problem and prepare a research proposal regarding this problem at the end of the semester.

Students were to meet once a week with the instructor of the course between 7 to 10 pm, and the duration of these meetings was fourteen weeks in total. The course language was English, and students were expected to be proficient in English language to actively get involved in the discussions during these meetings. The instructor's lectures did not form the base of the class sessions, but did demonstrations, discussions and hands-on practice on computers and of tools. The course was hybrid, which meant that most of the meetings were face to face and in-class meetings whereas students log in an online platform through Adobe Connect to synchronously meet their instructor in the specified weeks. However, it was essential to mention that the weekly meeting of the course was completely moved to online platform after the first five weeks due to the outbreak of cases of the global pandemic coronavirus in Turkey.

3.2.3 Participants. Twenty-eight MA students who registered to the elective course explained above participated in this study. The ages of the participants, whose average was 29, varied between 22 and 44. Three of the graduate students were male while twenty-five of them were females. Three students enrolled in Educational Technology Master's Program with thesis, seven participants were students of English Language Teaching Master's Non-Thesis Program whereas eighteen were registered to English Language Teaching Master's Thesis Program. Considering teaching status of the participants of the study, seventeen of them were teaching at K-12 schools and eight of them were English instructors at either a state or a foundation university. Three participants stated that they did not teach at an institution during the time when the study was carried out. Even though this study did not primarily aim to investigate the role of whether or not they are actively teaching and the level at which they teach, demographic information regarding these variables were gathered in order to understand the profiles of the participants better (see Table 2). As for the feedback types that the participants were already familiar with, all participants stated that they were either given or used in their own classes written feedback. The other types of feedback they were familiar with included peer feedback, oral feedback, group feedback sessions and audio feedback. They experienced screencast and video feedback types at least.

Table 2

Demographic Information of the Participants in Numbers

	Number
Total (*N*=28)	
Gender	
Male	3
Female	25
Other	0
Age	
20-30	17
30-40	10
40+	1
MA Program	
English Language Teaching (Thesis)	18
English Language Teaching (Non-thesis)	7
Educational Technology (Thesis)	3
Teaching Level	
K-12	17
University Level	8
Not Teaching	3

3.3 Procedures

This section elaborates on which instruments were used to collect the data, which procedures were applied and how the data was analyzed for the purposes of this thesis study. The details of each tool and procedure, which were used and applied in the present study, are presented in the following sections.

3.3.1 Data collection instruments. As the present study used mixed method to collect the data to find out answers to the research questions, it triangulated the data

collection methods and tools. The data was collected by including both quantitative and qualitative data. Quantitative research methodology comprises numbers as an indication of recording performance, and approximate instruments, precision and validation are concerned (McMillan & James, 2001); whereas qualitative research methodology deals with the identification and explanation of concepts and relation between variables of a study (Fraenkel & Wallen, 2005). The use of a single method or data source may lead to a bias for a study so that this can be overcome by triangulation. Thus, the validity and reliability of a research can be increased and assured (Strauss & Cobin, 1998; Denzin, 1978). In the present study, the data were collected through student drafts, reflection paper assessment rubric, draft analysis rubric, open-ended questions, semi-structured interviews and two feedback preference surveys (as pre- and post-test) (see Table 3). The following sub-headings describe each data collection tool of the present study.

Table 3

Data Collection Instruments

Instrument	Notes
Student Drafts	Graduate students were expected to write two different reflective assignments with two drafts for each.
Reflection Paper Rubric	An analytical rubric was adapted to score graduate students' reflection papers
Draft Analysis Rubric	A multi-layered draft analysis rubric was adopted to carry out document analysis of student drafts for each reflective assignment.

Table 3 (cont'd)

Feedback Preference Survey	A feedback preference survey was developed by the researcher. It was applied as pre-test and post-test to 28 participants in order to find out if any difference exists.
Open-ended Questions	Two open-ended questions were given to graduate students as included in post-test feedback preference survey. 28 answers were collected.
Semi-structured Interviews	Five semi-structured interviews were carried out. Some of the interview questions were developed based on the quantitative analysis.

3.3.1.1 Student drafts. As one of the requirements of the MA course in the present study, the graduate students were expected to write two reflection papers. In the reflection papers, the students were expected to discuss a specific point by placing their own ideas within a framework and referring to the related articles and chapters. For each of the reflection papers, the graduate students were given writing prompts including a guiding question and short instructions (see Appendix A). Since these reflection papers were used in the current study, the students submitted the first and second drafts of their writings on a predetermined date. The word number of reflection papers was limited to 500 words in maximum and reflection paper rubric was uploaded to itslearning system to make them familiar with the expectations of an academic reflection paper.

3.3.1.2 Reflection paper rubric. The instructor scored the students' drafts using an analytic scoring rubric to clarify what qualities the students' works needed to have so that

students would be able to understand the learning target and criteria for success. In the present study, it was used for formative assessment; therefore, it showed students what their next steps should be to enhance the quality of their performance in academic writing assignments (Black & William, 1998; Hafner & Hafner, 2003).

While choosing the rubric, the demands of reflection papers and academic writing context were taken into account. Therefore, the rubric was taken from the website of the School of Nursing at the University of Tennessee (retrieved from https://www.utc.edu/nursing) and adapted accordingly. In this adaptation process, the wording of the rubric, scoring and the content of each section were changed based on the content and the outcomes of the course. The adapted rubric describes the typical characteristics of reflection papers, ranging from a score of 0 to 10. The desired criteria of reflection papers were specified in the rubric. They were categorized under three sections and as organization, academic language and formatting. There were ten specified evaluation items in total, four of which were under the organization, and six of which were equally distributed to the academic language and formatting. The organization section was to check students' reflection papers from the aspects of the clarity of organizational paragraphs, the relatedness of its content to the given prompt and the topic, the paragraph organization and writing style and the referral to the literature of the field. Academic language section, on the other hand, evaluated students' use of academic language by taking into account mechanics, grammar, appropriate word choice, use of terminology and transitions to make the ideas flow, whereas use of APA style in writing, intext citations and references and the format of physical layout were scored under the formatting section.

According to the rubric, a score is given to each item under each section, and a score of "10" signified that the paper meets expectations of each specified points while a score of "8" meant that the paper showed most of the expected criteria in overall but there were some weaknesses and lack of clarity. A score of "5" described that the reflection paper had little compliance with the expectations and needed more attention and improvement. Finally, a score of "0" were given to the papers with obvious disregard of the expectations and excessive mistakes regarding that specific point (see Appendix B).

3.3.1.3 Draft analysis rubric. The second question of this thesis study aimed to find out the extent to which audio feedback have an impact on the development of graduate students' academic writing assignments. Therefore, a taxonomy developed by Tuzi (2004), which was originally based on Chris Hall's (1990) revision analysis rubric, was adapted to analyze the first and second drafts of each reflection paper and find out the revisions and changes made by the students after the provision of audio feedback or digital written feedback. Tuzi's (2004) taxonomy attempted to develop multi-layered approach including level, type, purpose and stimulus of revision in order to meet the needs of his study which was on the impact of e-feedback on L2 learners' academic writing. However, the present study tried to find out the impact of audio feedback on graduate students' academic writing. Thus, it made use of level, type and purpose parts of the rubric and modified the content of these components (see Table 4).

Table 4

The Draft Analysis Rubric for Student Revisions

Level	Type	Purpose
Paragraph	Add	Clarify intended meaning
Sentence	Combine	Grammar
Clause	Delete	Impact
Phrase	Move	New Information
Word	Replace	Surface (spelling, formatting, punctuation, capitalization)
	Rewrite	Structure
	Split	Not needed

Note. Appendix C gives explanations and examples of each component.

3.3.1.4 Feedback preference surveys. Two surveys as pre- and post-tests (see Appendix E) were applied to the graduate students enrolled in the MA course in which the audio feedback and written feedback were tested. The aim of the surveys was to find

out whether or not there was a significant difference in the graduate students' feedback preferences before and after they were given audio feedback.

The pre-test survey consisted of two parts: demographic information part, and a Likert scale for graduate students' feedback preference. The demographic part was included to get a better view of the participants' profile and had questions related to their gender, age, MA program, the status of their teaching and the feedback types that they are familiar with. The items in the demographic parts were not used for the quantitative analysis. The Likert scale was created by the researcher since the literature of audio feedback had more imprecise and general surveys and scales for students' feedback preferences. Therefore, 11 items were formed. The items were the statements on the usability and efficiency of audio feedback and students' general views of audio feedback. The items were constituted by grounding onto the rubric that was used to assess the students' reflection papers and the examples of perception scales in the literature. After the items were formed, the researcher consulted to an expert, who is working in the field of English Language Teaching and have studied on technology use in language teaching, to get his punditry. Later the items were adjusted considering the expert's comments.

To ensure the internal consistency of the study, Cronbach Alpha coefficient was reported after the pre-test survey was applied. For the field of social sciences, any coefficient of reliability value at or above .70 is acknowledged to be acceptable. The level of coherence is likely to decrease as the Cronbach Alpha coefficient approaches to 0 and to increase when it is around 1.00 (Yıldırım, 1999). The reliability coefficient values of three sections of the survey ranged from .68 to .89. The reliability coefficient for the whole survey is .86. Any reliability coefficient value between .41-.60 is considered to be relatively reliable, while if the reliability coefficient is between .61-.80, scales or surveys is considered to be reliable. Lastly, if the reliability coefficient is between .81-1; then, it is highly reliable (Nakip, 2013). Based on this information, it can be assumed that the survey in the present study is highly reliable as the reliability coefficient of it was reported as .86 (see Table 5).

Table 5

Reliability Statistics of Feedback Preference Survey

Cronbach's Alpha	*Cronbach's Alpha Based on Standardized Items*	*N of Items*
.86	.87	11

In order to determine if there was an item decreases the reliability of the survey, if-item deleted values were also calculated by using Statistical++ Package for the Social Sciences (SPSS) version 22.0 (Table 6). The values of item deleted mean scores and Cronbach's Alpha if-item deleted showed that all eleven items significantly contributed for acceptable internal consistency of the survey and thus, the reliability of the study.

Table 6

Values of Cronbach's Alpha If-item Deleted of Feedback Preference Survey

Items	*Scale Mean if Item Deleted*	*Scale Variance if Item Deleted*	*Corrected Item-Total Correlation*	*Cronbach's Alpha if Item Deleted*
Item 1	35.96	39.29	.50	.86
Item 2	35.61	41.80	.33	.87
Item 3	36.04	39.81	.63	.85
Item 4	36.0	37.48	.65	.85
Item 5	36.0	37.63	.77	.84
Item 6	36.0	38.67	.71	.84

Table 6 (cont'd)

Item 7	35.86	40.65	.57	.85
Item 8	35.64	38.24	.67	.85
Item 9	36.46	40.55	.46	.86
Item 10	36.32	38.74	.64	.85
Item 11	36.18	41.41	.35	.87

The graduate students were expected to choose from a scale from 5 to 1 with the labels of "strongly agree, agree, somewhat agree, disagree and strongly disagree". As for the post-test survey, it had the same items in the pre-test with small adjustments in tense since it was given to the graduate students after two feedback types were provided. Differently from the pre-test survey, two open-ended questions were added to the end of the survey to start qualitative data collection for student perceptions of audio feedback. The completion of pre-test survey took approximately five minutes whereas the other lasted around 15 minutes due to inclusion of the open-ended questions which will be explained next.

The surveys were created on Google Forms to be more practical and contemporary. The participants were reached through the researcher's participation to the sessions of the MA course and were all informed about the steps of the research and ethical considerations. The links of the surveys were shared with the participants.

3.3.1.5 Open-ended questions. Apart from investigating the impact of audio feedback on graduate students' academic writing, the present study aimed to find an answer to what the graduate students' perceptions of audio feedback for their academic writing were. As the explanatory process was concerned to illustrate on the graduate students' perceptions, two open-ended questions (see Appendix E) were added to the end of the post- feedback preference survey. These open-ended questions were directed to obtain reflective and in-depth answers from the graduate students in relevant to the process

of receiving audio feedback and its effectiveness in terms of quality of feedback and usefulness of it in learning.

3.3.1.6 Semi-structured interviews. Along with the open-ended questions, which were raised to understand how the graduate students approached the audio feedback after receiving it, semi-structured interviews (see Appendix D) were done with five of the participants to address the graduate students' perceptions in the present study in a full making-meaning experience and to see how graduate students experienced audio feedback because interviewing is a "process of selecting constitutive details of experience, reflecting on them, giving them order, and thereby making sense of them that makes telling stories a meaning-making experience" (Seidman, 2006, p.7). The interview questions were formed after the statistical analysis of the achievement scores of the reflection assignment drafts and the pre- and post- feedback preference surveys. The interviewees were asked nine questions in total; yet they were sometimes directed follow-up questions as the interviews were planned as semi-structured. The interview questions generally aimed to reveal the participants' reflections and opinions of audio feedback in comparison to written feedback by reaching their specific and individual comments. In accordance with the findings of these analyses of achievement scores and feedback preference surveys, the interviewees were also asked to discuss their viewpoints on these findings. The participants were interviewed online via Zoom Conference application and these Zoom meetings were automatically recorded and saved to the researcher's computer. Each interview lasted around 20-25 minutes. Each interviewee was sent a consent form to fill before starting the interview. The language of the interviews was English to get more clear answers for the questions since all procedures of implementation was carried out in English language and the participants' level of English is advanced enough to express their reflective thoughts and personal experience in detail as non-native speakers. The recordings of the interviews were transcribed, and content analysis was applied for further discussion.

3.3.2 Data collection procedures. In this part, the sampling procedure, details of feedback types, implementation process and ethical considerations taken into account during the research process are presented.

3.3.2.1 Sampling procedure. Sampling is the procedure of selection of a representative portion of participants rather than entire population to predict characteristics of it (Ary, Jacobs, Sorensen & Walker, 2013). It has two types; probability sampling which refers to random selection, and non-probability sampling which means non-random selection, mostly based on criteria or research purposes (Cohen, Lawrence, & Morrison, 2007). The current study employed convenience sampling as the sampling procedure, which is categorized under non-probability sampling types. The fact that the researcher was one of MA students at the graduate school where the implementation was done and was working at the mentioned university facilitated this type of sampling.

Following the sampling procedure, the feedback groups were randomly assigned, and it involved two periods by two feedback provision, in which the subjects in Group A were provided audio feedback while the ones in Group B was given digital written feedback for the first reflection assignment and vice versa for the second reflection assignment.

3.3.2.2 Implementation. As mentioned in the previous sections, the data was collected through students' reflection paper drafts, assessment rubric, draft analysis rubric, pre- and post-test feedback preference surveys, open-ended questions and semi-structured interviews. As the aim of the study was to the effect of audio feedback on graduate students' academic writing, the graduate students were assigned to write two reflection papers, which were one of the genres that students should be familiar with and be able to properly write in academic settings, especially in graduate studies. To this end, the students were given two different writing prompts for reflection papers on itslearning platform and the students uploaded their reflection papers to itslearning to be assessed by the instructor. With the first writing prompt, the students were asked to discuss the characteristics of 21st century learners and the use of digital tools and technology by framing their ideas based on CALL and referring to in-class readings. The second writing

prompt asked the graduate students to develop an argumentation on the use of the digital tools in language teaching in different levels by taking into consideration different learning environments and digital materials.

The students were provided either audio or written feedback regarding their reflection papers, after which they were expected to submit their second drafts with revisions they would make. Considering the fact that each reflection assignment consisted of two drafts, the students actually submitted four drafts in total (see Table 7). Both audio and digital written feedback was provided by the instructor of the course to assess the first drafts of each reflection assignment and to stimulate students' revisions in the second drafts.

Table 7

The Details of Reflection Assignments

Reflection Assignment	Writing Prompt	Drafts	Submission Deadlines
Reflection Assignment I	"What are the characteristics of 21st learners (today's students) and what do you think of the use of digital tools and technology in our century in terms of their both ideal and real role and effectiveness?"	First draft Second draft	March 8th, 2020 April 3rd, 2020

Table 7 (cont'd)

Reflection Assignment II	"How have the digital tools been integrated into language teaching today at classroom, institution and state level by considering different learning environments (Web 2.0, Games, VR and AR etc.) and variety of digital materials to be used in those environments?"	First draft Second draft	April 12th, 2020 April 25th, 2020

The participants of the study were randomly assigned to two study groups, namely, Group A and Group B. Group A received audio feedback while Group B was provided digital written feedback after the students submitted their first drafts of the first reflection assignment. The type of feedback was switched for these groups, and Group A was given digital written feedback whereas the instructor delivered his comments through audio feedback for the second reflection assignments of Group B. In this way, both groups experienced both types of formative feedback for their academic writing assignments.

3.3.2.3 Feedback. The current study aimed to find out the effect of audio feedback on graduate students' academic writing. Therefore, the participants of the study were provided either audio feedback or digital written feedback for their first drafts of two reflection paper tasks and were expected to submit their second drafts after they revised them. Each feedback type is explained in detail below.

3.3.2.3.1 Digital written feedback. Digital written feedback in the present study refers to the type of feedback that is provided by the instructor's inserted comments regarding the graduate students' first drafts on the assessment section of itslearning platform. The course instructor assessed the drafts submitted to itslearning platform and included his comments based on the reflection paper rubric. The particular parts that were extremely problematic and needed to draw attention were also mentioned in the comments and the relevant feedback was included (see Appendix H).

3.3.2.3.2 Audio feedback. Audio feedback in this study can be described as the type of feedback that is given by the instructor by recording his/her voice during assessment of assignments on itslearning platform. As technology-enhanced feedback type, audio feedback was chosen and used to provide feedback as an option to digital written feedback since itslearning platform enables instructor to deliver feedback in both modes. Thus, no other application was used to record audios and feedback process become more standardized. Likewise, in the provision of the digital written feedback, the audio feedback also included comments depending on the components of the scoring rubric, and particularly poor parts were highlighted in the voice record (see Appendix H).

3.3.2.4 Ethical considerations. This chapter has presented and discussed the research design, data collection tools and the procedure so far. This part will elaborate on the ethical considerations in the present study. As Creswell (2012) points out, obtaining permission before collecting the data, protecting the anonymity of individuals by keeping their identity confidential as well as viewing the data confidentially and not sharing it with third parties are essential steps to be taken for the acceptability of the research (p.169). It is further stressed that if participants do not want to partake in the study, even when they consented to participate beforehand, the researcher is expected to understand it (Creswell, 2012, p.170).

The participants of the study were approached by the researcher by attending to the meetings of the MA course. For the first time, the researcher introduced herself and explained the thesis study, its aims and the procedure she would follow to the participants. She spared time for the participants' question related to the study and mentioned the

confidentiality of the collected data and that the participation to the study was totally voluntary and they could withdraw from the study whenever they felt so.

An official and concrete procedure was carried out while all of the participants were kindly requested to fill the online surveys for pre- and post-tests that were applied to see whether there is a significant difference in graduate students' feedback preferences. A short information section explaining the research aim and confidentiality issues was included before demographic information part. The points that the researcher emphasized during her talk in the lesson were included to ensure that the study was carried out within ethical boundaries and with the participants' own willingness.

A consent form (see Appendix F) was prepared and sent to each participant before semi-structure interviews in order to ensure their approval in official way to use the data collected in the interviews as well as to inform the participants about all the terms and ethical issues. It was clearly stated in the consent form that participation in this study was entirely voluntary, and they may withdraw from the study at any given time if they feel uncomfortable and change their minds. Before starting the interviews, the researcher introduced herself and asked some general and daily-life questions in order to get to know the participants and to build a rapport with them. The topic, purpose, and nature of the study was explained in detail to the participants once again. The details regarding the interviewing process such as the duration and the number of questions were told as well. As the interviews were carried out in semi-structured nature, it was also mentioned that the interviewees may be asked some further questions depending on their answers. Furthermore, the participants were aware of the fact that they may choose not to answer the questions they do not feel comfortable with.

The privacy and confidentiality were assured by assigning numbers to the participants such as P1, P2, P3, etc. to keep their names anonymous in the thesis. The participants were also provided with the guarantee of the fact that any information that may reveal their identity will be not shared with the third parties.

3.3.3 Data analysis procedures. This section provides information about the analysis of quantitative data and the analysis of qualitative data procedures separately and in detail.

3.3.3.1 Analysis of quantitative data. As mentioned, and explained in detail in the previous sections, the quantitative data of the present study was collected from the graduate students' overall achievement scores, which were given to each draft and based on the reflection paper assessment rubric, and pre- and post- feedback preference surveys. The gathered data during these procedures was statistically analyzed and interpreted with the use of Statistical++ Package for the Social Sciences (SPSS) version 22.0.

3.3.3.1.1 Analysis of achievement scores. To assess whether there was any difference between the effects of written feedback and audio feedback on graduate students' academic writing achievement, the achievement scores of the reflection assignments' first and second drafts were used. First of all, the descriptive statistics were computed and, then the assumption of the normality for the first draft and second draft scores in order to apply parametric or non-parametric tests in accordance. Finally, the relevant analyses were performed.

Shapiro-Wilk (S-W) Test was administered to test the normality of the data since the data of written feedback (n=26) and audio feedback (n=25) were small in terms of size. If the significance value (or p-value) of Shapiro Wilk Test is greater than .05; then, the distribution of the data is assumed to be normal whereas if it is below .05, the data shows significant deviation from a normal distribution (Elliott & Woodward, 2007). The results indicated that the distribution of the data was sufficiently normal for the achievement scores of the first drafts (p = .84) whereas the data obtained from the achievement scores of the second drafts did not have a normal distribution (p = .03). As the results suggested, a parametric Independent Samples T-Test was used to test the achievement scores of the first drafts while the achievement scores of the second drafts were tested with a non-parametric Mann Whitney U Test for the analysis.

After the normality tests, an Independent Samples T-Test was used to see if there was any significant difference between the graduate students' scores before they were given feedback regarding their reflection assignment. Since there was not any statistically significant difference between the graduate students' scores in the first drafts of two assignments, Mann Whitney-U Test was conducted to compare the effect of the audio feedback and the digital written feedback on the graduate students' reflection assignments

and to see if the scores of audio feedback group and digital written feedback group differed significantly in their second drafts.

3.3.3.1.2 Analysis of pre- and post-test feedback preference surveys. To find out whether there was any difference in the graduate students' feedback preferences, the feedback preference survey was developed and applied as pre-test and post-test (included two open-ended questions for the qualitative data). As the survey items were five-point Likert scale, the number values from 1 to 5 were assigned to each response to perform the statistical analysis. Correspondingly, the number values were determined as 1 for "strongly disagree", 2 for "disagree", 3 for "somewhat agree", 4 for "agree" and 5 for "strongly disagree". These assigned numbers were entered to SPSS 22. The mean scores of each item of pre-test and post-test were computed to carry out the analysis. The normality of the data was tested by using Shapiro Wilk (S-W) Test on SPSS 22 due to the fact that it is used for small sample sizes (n=28). The results of Shapiro Wilk Test revealed that the data of the post-test items (p= .06) and the data of the pre-test items (p= .66) has normal distribution as the p values are greater than .05 (Elliott & Woodward, 2007). Accordingly, a parametric Paired Samples T-test was applied to find out whether the graduate students' feedback preference changed after they were provided with both digital written feedback and audio feedback. Additionally, the same tests were applied to whether there was any difference in the graduate students' feedback preferences in terms of usability, efficiency and preference sections of the surveys. The results of the analyses were interpreted for further discussion.

3.3.3.2 Analysis of qualitative data. The qualitative data collected from the graduate students' drafts of two reflection tasks, the open-ended questions and the semi-structured interviews were analyzed in two different procedures. First of all, document analysis was carried out for the reflection paper drafts based on the draft analysis rubric explained in the section of data collection tools. Later, content analysis was applied to open-ended question given in the post-test survey and semi-structured interviews done with the graduate students.

3.3.3.2.1 Document analysis. After the graduate students submitted their second drafts for each reflection assignment and they were assessed and scored in terms of overall achievement, the first and second drafts were analyzed to find out the revisions and changes they made after they were provided either audio or digital written feedback. The analysis of the student drafts started by collecting all the first and second drafts of each reflection task. The researcher analyzed all the drafts for each reflection task by comparing each draft with the subsequent revision to identify the changes. All the changes were noted down by taking into account the components of the draft analysis rubric. Finally, all of the analyzed data was logged into a database. In order to prevent the researcher bias, the researcher grouped the drafts into categories of audio feedback and written feedback after the document analysis for all drafts was completed.

3.3.3.2.2 Analysis of open-ended questions and semi-structured interviews. One of the main goals of this thesis study was to reach some conclusive findings on the graduate students' perceptions of audio feedback for their academic writing tasks. While doing so, the researcher gathered data from open-ended questions given with post-test feedback preference survey and semi-structured interviews done with five participants. Following the data collection, each interview data was transcribed by the researcher, and all of the students' answers to open-ended questions was read thoroughly. After this first step of analysis, content analysis was implemented to reach some common codes and themes. During content analysis process, the researcher utilized both vivo coding and open coding for the interview data and answers to open-ended questions. A list of the coded words was prepared, and similar codes were categorized under several main themes by omitting the codes that were not placed in a category from the list. Then, both the interview data and open-ended questions data were gone through by the researcher once again in order to see whether an extra code emerged or left unseen. The explanations and interpretations of the findings of the interview data and open-ended questions data were supported through some quotes from the students' answers to open-ended questions and interviews.

3.3.4 Reliability and validity. Ensuring the quality of the research is crucial. In this sense, both reliability and validity are significant criteria that need to be considered when a study is conducted.

Reliability means that "scores from an instrument are stable and consistent" and is related to the data tools used to collect the data. Reliability of a study is assured with the consistency of the results (Creswell, 2012, p.159). However, ensuring reliability is relatively hard to attain because of potential human and instrumental errors of measurement even if conditions are ascertained to be stable. In the current study, some attempts were taken in order to improve stability and consistency of the results and to increase the reliability of the research.

First of all, the reliability values of pre- and post- feedback preference surveys were calculated since the items of these survey were created by the researcher and there was not enough time to carry out a piloting study for these. As given under the data collection tool section, the reliability score, as Cronbach's Alpha coefficient, was calculated as .86 for feedback preference survey. Apart from that, the data triangulation was employed to enhance the accuracy and consistency of the findings. Both the quantitative and the qualitative data were used to confirm the correspondence between the results. While document analysis of revisions in the students' drafts strengthens the findings of statistical analysis of overall achievement scores, semi-structured interviews were carried out to affirm the results of statistical analysis of achievement scores and feedback preference surveys. The primary concern regarding the reliability of the current study is pre- feedback preference survey which was given to the participants before the implementation as it may have created a bias for the implementation and the post-test applied after it.

Validity is the other significant criterion which refers to "the development of sound evidence to demonstrate that the interpretation (of scores about the concept or construct that the test is assumed to measure) matches its proposed use …" (Creswell, 2012, p.159). As suggested, high validity indicates that the research findings represent what they are supposed to. Therefore, some strategies were applied to strengthen the validity of the current study.

Mixed methods and triangulation of data collection were used as a strategy to ensure the validity of the research as well as the data collection tools were standardized to achieve

more accurate and representative results. Therefore, audio and digital written feedback were delivered based on the components of the reflection paper rubric in order to be in accordance with overall achievement scores. Besides, the graduate students were randomly assigned to the feedback groups after the sampling procedure. The sample size, on the other hand, may pose a threat to the validity of this study. As mentioned in the participants section, the present study gathered data from 28 graduate students in total, which implies that the number of the respondents in the present study is relatively small to have representative of the target population. Thus, the findings cannot be generalized; consequently, the external validity of the research is limited.

3.3.5 Trustworthiness. In addition to the validity and reliability of the present study, the rigor in the qualitative data was also secured. While doing so, four criteria were adopted: credibility, dependability, confirmability and transferability (Rallis & Rossman, 2009). Credibility of the research was assured by data and methodological triangulation; that is, the study is a mixed-method study which collected data from different sources. For the qualitative part of the study, the graduate students' reflection paper drafts, draft analysis rubric, open-ended questions and semi-structured interviews were employed.

Besides, the researcher performed more steps than only data and methodological triangulation in order to improve the rigor in the study. The credibility of the findings was ensured by debriefing and member checking in the process of data analysis. The interviewees were contacted by the researcher to confirm member checking, and they were provided explanations about the findings of the study so that it was to understand if the researcher made a mistake in what she concluded and what they meant in the interview. The correction and adequacy of the data were confirmed by three participants. For the debriefing step, the researcher got help from one of her colleagues from a different university, who is also an MA student in English Language Teaching program. The interview data and open-ended questions data were checked by her colleague, and s/he provided comments on the interpretation of all the data, which was followed by the necessary arrangements in the code lists and the interpretation of the data. For the document analysis, several drafts were analyzed by another rater who is a PhD student in English Language Education at the same university with the researcher. The analyses of

these drafts were compared to the researcher's and high congruence was tracked. Dependability and confirmability were achieved by documenting the research procedures including procedures of data collection, data analysis and interpretations of the interviews. Lastly, transferability was attained by providing detailed description of the context. Thick descriptions of the participants and setting were provided in the relevant sections. In this sense, accurate, detailed, and complete descriptions of the context and participants were provided.

3.4 Limitations

This study has some limitations to be taken into consideration. First of all, the number of the participants was relatively small (*n*=28), which may limit the external validity of the study because the number of participants may not represent the whole population to see the impact of audio feedback on the graduate students' academic writing. A higher external validity and more reliable results could be ensured for quantitative findings of the study with a greater number of participants; thus, the generalizability of the study could be increased. Additionally, convenience sampling was adopted as the type of sampling, which means that the sample of this study might not be representative of the target population. Furthermore, the revision process and drafts of graduate students' writings were limited to two drafts. Thus, the findings of this study should be considered as suggestive rather than conclusive, and attempts should be made to replicate and expand the findings into further research in the field of language learning and teaching. In addition to all these, the collection of data step had to give a pause due to the outbreak of the cases of the global pandemic by COVID-19 in Turkey, which, consequently, led to a cease in formal education in Turkey for several weeks until all educational institutions moved to the distance education. Therefore, there happened to be a longer time gap between the first draft of the first reflection assignment and the provision of feedback for it. This might affect the revision process for the second drafts as the graduate students might have had difficulty to recall their argumentation at the first place.

Chapter 4

Findings

This chapter illuminates the findings of the current study which mainly intends to find out the effect of audio feedback on graduate students' academic writings and their attitudes towards technology-enhanced feedback. The following sections of the chapter provide the results of quantitative analysis and qualitative analysis in detail.

4.1 Findings of Quantitative Analysis

The quantitative data obtained from the graduate students' achievement scores in their first and second drafts of their reflection assignments and the pre-test and post-test preference surveys were analyzed using Statistical++ Package for the Social Sciences (SPSS) version 22.0. The normality tests were administered to all quantitative data to decide on whether to use a parametric test or non-parametric test. Then, an Independent Samples T-test was applied between the first drafts of the audio feedback group and written feedback group to test the homogeneity of both groups. Later, Mann Whitney U Test and Paired Samples t-tests, in addition to the descriptive statistics of the reflection assignments, were conducted to the data obtained from the achievement scores to understand whether the audio is more effective on academic writing achievement compared to written feedback. The descriptive statistics of each reflection assignment are also given for further examination. Paired Samples T-test was used to analyze the ordinal data of pre-test and post-test preference surveys to examine if there was a change in the graduate students' feedback preferences in terms of usability, efficiency and preference after the implementation.

4.1.1 Achievement scores. One of the main goals of the current study was to explore whether there is any difference between the effects of written feedback and audio feedback

on academic writing achievement. In order to achieve this aim, the graduate students' achievement scores which were graded after their first and second drafts of the reflection assignments were grouped as the audio feedback group and the digital written feedback group regardless of the number of the assignment as this research targets to compare the effects of the two types of feedback on academic writing rather than to evaluate the gradual change in each assignment. In order to achieve that, the descriptive statistics of two academic writing assignment was provided in Table 8 and Table 9 respectively.

Table 8

Descriptive Statistics of the Achievement Scores for the First Reflection Assignment

	N	*M*		*SE*		*SD*	
		First Draft	Second Draft	First Draft	Second Draft	First Draft	Second Draft
Digital Written Feedback Group	13	70.92	84.54	2.36	1.21	8.51	4.35
Audio Feedback Group	13	67.61	87	3.17	1.66	11.45	5.99

The results of the first reflection assignment reported in Table 8 indicates that the graduate students who were assigned to receive the written feedback got higher grades for their first drafts (*M*=70.92; *SE*=2.36; *SD*=8.51) than the ones assigned to receive the audio feedback (*M*=67.61; *SE*=3.17; *SD*=11.45). After the graduate student were provided the written feedback and the audio feedback; however, it is seen that the graduate students who received the audio feedback achieved higher scores (*M*=87; *SE*=1.66; *SD*=5.99) for the second drafts of the first reflection assignment in comparison to the students who were given the written feedback (*M*=84.54; *SE*=1.21; *SD*=4.35).

Table 9

Descriptive Statistics of the Achievement Scores for the Second Reflection Assignment

	N	*M*		*SE*		*SD*	
		First Draft	Second Draft	First Draft	Second Draft	First Draft	Second Draft
Digital Written Feedback Group	13	70.31	86.15	2.43	2.49	8.76	8.97
Audio Feedback Group	12	71.42	90.92	3.40	1.56	11.77	5.42

Table 9 summarizes the descriptive statistics results of the second reflection assignment. According to these results, it can be concluded that the graduate students who were to receive the audio feedback got slightly higher scores for the first drafts (*M*=71.42; *SE*=3.40; *SD*=11.77) of the assignment when they were compared to the graduate students who were provided the written feedback (*M*=70.31; *SE*=2.43; *SD*=8.76). In the second drafts of the assignment, likewise, the students who got the instructor feedback in the written form obtained relatively lower scores (*M*=86.15; *SE*=2.49; *SD*=8.97) than the students who listened audios for the feedback (*M*=90.92; *SE*=1.56; *SD*=5.42).

Based on these results, it can be assumed that the graduate students benefitted from the audio feedback on their academic writing assignments more efficiently rather than the written feedback on the basis of the academic writing achievement scores. The descriptive statistics of the achievement scores in the first and second reflection assignments are provided to see the impact of audio and written feedback in each assignment in detail. However, a further analysis was needed to see whether there was a statistically significant difference between the role of these two feedback types on academic writing achievement scores. Therefore, a between-groups design (Hatch & Lazaraton, 1991) was employed to

see the difference between the achievement scores of two groups, and Mann Whitney U Test was carried out on SPSS 22.

The achievement scores of the first drafts of the audio feedback and the digital written feedback groups were compared in an independent t-test to see whether there was statistically significant difference to test the homogeneity of both groups. The details of the independent t-test can be seen in Table 10.

Table 10

The Independent T-test Applied to the Achievement Scores of the First Drafts

	M	*N*	*SD*	*t*	*df*	*Sig.*
Written Feedback Group	70.23	26	8.15			
Audio Feedback Group	69.84	25	11.78	.138	49	.89

p< .05

The results of Levene's F test ($F(49)= 3.72$; $p=.06$) demonstrates a satisfying assumption of equality of variances. Furthermore, the findings of the independent t-test showed that there was no statistically significant difference between the achievement scores of the graduate students that were given audio feedback for their first drafts ($M=69.84$; $SD= 11.78$) and the students who received the digital written feedback for their first drafts ($M= 70.36$; $SD= 8.29$); $t(49)= .137$, $p= .89$.

As there was no statistically significant difference between the graduate students' achievement scores of the audio feedback group and the digital written feedback group in terms of their first drafts, a between-groups design (Hatch & Lazaraton, 1991) was adopted and a Mann Whitney U test was performed in order to test the hypothesis that there was a statistically significant difference between the effects of audio feedback and

digital written feedback on the graduate students' academic writing achievement. The detailed results of Mann Whitney U test are shared in Table 11.

Table 11

Mann Whitney U Test for Achievement Scores of the Second Drafts

	N	*U*	*Z*	*Asymp. Sig. (2-tailed)*
Written Feedback	26			
Audio Feedback	25	209	-2.19	.03

$p < .05$

As demonstrated in Table 11, the Mann Whitney U test was associated with a statistically significant difference ($z = -2.19$; $p = .03$) between the achievement scores that were graded after written feedback and audio feedback. In other words, there was a significant difference the scores of the written feedback (M=85.08; SD=6.82) and the audio feedback (M=89.16; SD=5.92). Based on these statistical findings, it can be inferred that audio feedback yielded more effective and positive results on the graduate students' academic writing achievement compared to written feedback. Cohen's d was estimated at -0.63 (r = -0.30), which signals a large effect based on Cohen's (1992) guidelines.

The statistical analysis of achievement scores graded after written feedback and audio feedback showed that audio feedback was more effective in improving the graduate student' reflection papers, which affirms that audio feedback has better impact on the graduate students' academic writing achievement.

4.1.2 Pre- and post- test feedback preference surveys. Another aim of the present study was to find out whether there is any change in graduate students' preferences towards audio and written feedback for academic writing in terms of usability, usability and preference. Therefore, as stated in the previous chapter, a preference survey as a Likert scale was developed with three sections and 11 items in total. It was administered to the graduate students before and after they received audio and digital written feedback for

their reflection assignments. The three sections of the surveys compared two feedback types in terms of usability and efficiency of these feedback types and the participants' overall preferences. The answers of the pre-test and post-test preference surveys were analyzed to address the graduate students' feedback preference before and after the implementation. Table 12 describes the results of the descriptive statistics of pre-test and post-test feedback preference surveys.

Table 12

Descriptive Statistics of Pre- and Post-test Feedback Preference Surveys

	N	*M*	*SE*	*SD*
Pre-test Feedback Preference Survey	28	3.60	.08	.26
Post-test Feedback Preference Survey	28	3.91	.06	.20

As shown in Table 12, it is seen that the scores of post-test feedback preference survey was slightly higher (*M*=3.91; *SE*= .06; *SD*= .20) than the scores of pre-test preference survey (*M*=3.60; *SE*= .08; *SD*= .26). Based on these results, it can be deduced that the graduate students preferred audio feedback even before the implementation, and this preference did not differ after the process; in fact, the tendency to prefer audio feedback over written feedback increased to some extent as indicated in the post-test results.

Even though the descriptive statistics of pre-test and post-test feedback preference surveys provides an idea for the results of the study, a further analysis is required to draw a clearer conclusion to understand whether there was a significant difference between the graduate students' feedback preference on the statistical base. Such being the case, a repeated-measures design (Hatch & Lazaraton, 1991) was employed. Prior to deciding on the test and conducting the analysis, the assumption of normality of the data was checked and was found to be sufficiently normal. Therefore, a parametric Paired Samples t-test

was used for the analysis. The detailed results of Paired Samples T-test are given in Table 13.

Table 13

The Results of Paired Samples T-test for Pre- and Post-Test Feedback Preference Surveys

				95% Confidence Interval of the Difference				
	M	*SD*	*SEM*	*Lower*	*Upper*	*t*	*df*	*Sig. (2-tailed)*
Pre-test Preference Scale – Post-test Preference Scale	-.31	1.06	.20	-.72	.10	-1.53	27	.14

$p < .05$

As seen in Table 13, the results of Paired Samples T-test were not associated with a statistically significant effect. Namely, there was no statistically significant difference between the graduate students' feedback preferences scores before the implementation and the scores after the implementation; $t(27) = -1.53$, $p = .14$. The results suggest that the graduate students feedback preferences were towards audio feedback before the implementation and this inclination did not change to hold a statistically significant difference after the process even though their preferences of audio feedback were slightly higher in post-test survey in numerical sense.

A further analysis was carried out to see if there was a significant difference between the scores of pre-test preference survey and post-test preference survey in aspects of usability of feedback, efficiency of feedback and students' preferences of feedback

type. The analysis results of each aspect can be seen in Table 14, Table 15 and Table 16 respectively and in detail.

Table 14

The Results of Paired Samples T-test for Pre- and Post-test Feedback Preference Surveys in terms of Usability

				95% Confidence Interval of the Difference				
	M	*SD*	*SEM*	*Lower*	*Upper*	*t*	*df*	*Sig. (2-tailed)*
Pre-test Usability – Post-test Usability	-.37	1.00	.19	-.76	.02	-1.95	27	.06

$p < .05$

Based on Table 14, the results indicated that there was no statistically significant difference between the scores of pre-test preference survey (M= 3.75; SD= .82) and the scores of post-test preference survey (M= 4.12; SD= .81) in terms of usability of feedback; $t(27)$= -1.95, p= .06. The mean scores of the pre-test preference survey imply that the graduate students regarded audio feedback more usable for academic writing compared to digital written feedback and this view was remained in the post-test preference survey with a higher score in favor of audio feedback.

Table 15

The Results of Paired Samples T-test for Pre- and Post-Test Feedback Preference Survey in terms of Efficiency

				95% Confidence Interval of the Difference				
	M	*SD*	*SEM*	*Lower*	*Upper*	*t*	*df*	*Sig. (2-tailed)*
Pre-test Efficiency – Post-test Efficiency	-.16	1.25	.24	-.65	.32	-.68	27	.50

p< .05

According to the statistics results regarding efficiency of two feedback types in Table 15, it is clearly demonstrated that no statistically significant effect was seen in the scores of the pre-test preference survey (*M*=3.63; *SD*= .74) and the scores of the post-test preference survey (*M*=3.80; *SD*= .96); *t*(27)= -.68, *p*= .50. As indicated, the graduate students believed that audio feedback is more efficient than digital written feedback in the context of academic writing even before they received both types of feedback and they sustained this assumption after the process.

Table 16

The Results of Paired Samples t-test for Pre- and Post-Test Preference Survey in terms of Preference

	M	*SD*	*SEM*	*95% Confidence Interval of the Difference*		*t*	*df*	*Sig. (2-tailed)*
				Lower	*Upper*			
Pre-test Preference – Post-test Preference	-.41	1.31	.25	-.92	.10	-1.66	27	.11

p< .05

Referring to the results in Table 16, it is seen that there was no statistically significant difference between the scores of pre-test preference survey and the scores of post-test preference survey; t(27)= -1.66, *p*= .11. Depending on the scores of the pre-test (*M*=3.45; *SD*= .77), it can be inferred that the graduate students showed an inclination towards preferring audio feedback rather than digital written feedback. A suggested in the results of the post-test preference survey (*M*=3.87; *SD*= .98), this inclination increased after they received both audio and digital written feedback for their academic writing.

As seen, the statistical analysis of pre-test preference survey and post-test preference survey via Paired Samples T-tests on SPSS demonstrated that there was no statistically significant difference between the graduate students' preference before and after the implementation, which means that they preferred audio feedback in comparison to digital written feedback in the pre-test and there was no change in their preference in the post-test along with an increase in the scores. Additionally, the frequencies and percentages of the item responses in both surveys are given in Appendix G in order to get more detailed and elaborated insight into the graduate students' preference of audio feedback over written feedback.

4.2 Findings of Qualitative Analysis

The qualitative data of the current study was collected from the graduate students' drafts of two reflection papers, the open-ended questions that were given to the graduate students with the post-test preference survey and semi-structured interviews with five participants after the implementation. In order to utilize draft analysis, the students' first and second drafts of each reflection papers were examined based on an adapted rubric from a similar study. The content analysis was performed to the analysis of the data obtained from the open-ended questions and semi-structured interviews to illuminate the participants' perceptions and experience of audio feedback. Hand-coding was used to analyze the data collected from the open-ended questions and the semi-structure interviews; thereafter, conceptual themes emerging from recurring words and expressions were categorized and discussed under several headings and related excerpts were identified to support these conceptual themes.

4.2.1 Document analysis. The graduate students submitted 26 first drafts and 26 second drafts for the first reflection assignment, and 25 first drafts and 25 second drafts for the second reflection assignment. The papers of the students who did not submit a second draft for any assignment were excluded. Besides, one paper for each assignment were also excluded as the second drafts were written starting from zero instead of making revisions based on the provided feedback.

Using the draft analysis rubric detailed in the previous chapter Methodology, the first drafts and the second drafts were compared, and subsequent changes in layers of levels of revision, type of revision and purpose of revision were identified for each set. There was a total of 770 recorded revision changes. Table 17 summarizes the numbers of changes made in five levels of revision after the students were digital written feedback and audio feedback.

Table 17

Analysis of Levels of Revision

	Paragraph	Sentence	Clause	Phrase	Word	Total
Written	14	189	34	87	62	386
Audio	29	172	31	67	85	384

The data in Table 17 indicates that the numbers of recorded revision changes after written feedback (*n*=386) and audio feedback (*n*=384) were similar. It is seen that there was not a huge difference between the numbers of the revision changes made after the provision of written feedback (*n*=189; 34) and the revision changes after the audio feedback (*n*=172; 31) in sentence level and clause level respectively. When the numbers regarding paragraph level and word level changes; however, it is clearly demonstrated that the graduate students made twice as many changes in these levels following the audio feedback (*n*=29; 85). As to phrase level revision changes, more instances were observed throughout the revision sets subsequent to the written feedback (*n*=87).

Table 18

Analysis of Types of Revision

	Add	Combine	Delete	Move	Replace	Rewrite	Split	Total
Written	138	18	101	23	49	46	6	381
Audio	147	14	93	17	58	47	13	389

In Table 18, the numbers of changes for seven different types of revision are given. It is pointed out that there were not large difference between the numbers of instances following the audio feedback (*n*= 389) and the written feedback (*n*=381) in regard to the types of revision. Based on the numbers of revision changes in Table 17, it can be inferred that both the audio feedback (*n*=147;14;93;17;58;47) and the written feedback (*n*= 138;18;101;23;49;46) created similar numbers of instances in terms of revision types add, combine, delete, move, replace and rewrite respectively. A different case was encountered for revision type split; in that, it is shown that the number of splitting instances after receiving the audio feedback (*n*=13) were higher twice as the one after receiving the written feedback (*n*=6).

Table 19

Analysis of Purposes of Revision

	Grammar	Impact	Meaning	New Info	Not Needed	Structure	Surface	Total
Written	18	106	58	68	102	43	4	399
Audio	16	109	38	64	92	49	3	371

Table 19 shows the number of revision changes made for seven different purposes. As demonstrated in the table, slightly more revision changes in total occurred in the graduate students' second drafts after they were provided the written feedback (*n*=399) compared to the audio feedback (*n*= 371). When each purpose of revision was gone through, it can be concluded that the graduate students, regardless of feedback type, formed similar numbers of revision changes in categories of six revision purposes which are grammar, impact, new information, not needed, structure and surface. The only contrasting occurrence is noted with the purpose of clarifying meaning as the written feedback led to higher number of revisions made to clarify meaning (*n*=58) rather than the audio feedback (*n*=38).

To put it concisely, it can be mentioned that the audio feedback prompted more revision changes in paragraph and word levels whereas the written feedback created a higher number of instances in phrase level in the graduate students' second drafts. Concerning the type of revision, it is seen that both feedback types did not produce diverse numbers of revision changes except for one type of revision, which is split. A similar situation is recognized for the purpose of revision since a disparity in the numbers of revision changes is noticed only in the revisions made to clarify meaning. Shortly, it can be assumed that both feedback types led to very alike revision changes in overall in aspects of the level of revision, the type of revision and the purpose of revision.

4.2.2 Open-ended questions. The present study raised a question to identify the graduate students' perceptions of audio feedback; therefore, two open-ended questions were asked to the participants as a part of the post-test preference survey. The questions aimed to understand the participants' experience of audio feedback and written feedback during the implementation and to find out to what extent the participants perceive audio feedback is effective in terms of quality and usefulness of feedback in learning context.

The written answers to the questions were analyzed by the researcher and particular themes emerged as a result of this analysis. The emerging themes were checked with the researcher's colleague, who is also an MA student and researcher in English Language Teaching program, in order to ascertain the credibility of the study. The emerging themes are verbal features in audio feedback, audio feedback is time-consuming, audio feedback is detailed and personalization. Each theme is detailed with complementary excerpts from the participants' answers under the following headings.

4.2.2.1 Verbal features in audio feedback. Eight participants mentioned in their answers that audio feedback delivered quality feedback as it seemed to be clearer by means of verbal features and tonal clues. These clues such as the instructor's intonation and word or sentence stress helped the graduate students to quickly detect what parts of their writing needed more attention. Besides, the emphasis on certain points in the audios enabled the students to realize their mistakes easily and to figure out the instructor's intention while including that certain comment and underlying meaning of the message.

However, in written feedback, such clues and hints do not exist, and it may sometimes be hard for them to interpret the intended message:

[…] I believe that getting audio feedback has helped me to improve the overall quality of my paper. I felt satisfied with this audio feedback experience because it enabled me to realize the weaknesses in my paper much more easily because the instructor's voice guided me to the problematic parts […] (S23, Open-Ended Questions, 07.05.2020).

Actually, receiving audio feedback was a powerful option for me to understand how I should change my writing. I do not know why but it was comparably better for me. I guess my processing channels made sense of the feedback message when it was auditory. I feel like it helped me to pinpoint the issues I need to take care of in my paper more than written feedback… With audio feedback, an instructor can convey his/her feedback thoroughly […] (S19, Open-Ended Questions, 07.05.2020).

The graduate students' statements clearly show that audio feedback was considered to be more useful and clearer with the presence of verbal features and tonal clues in the instructor's voice which helped them to detect the problematic parts and to embrace their own weaknesses more easily.

4.2.2.2 Audio feedback is time-consuming. In their written answers, four participants of the current study mostly pointed out that the audio feedback did not seem practical as they had to listen the audio files many times to intimidate what changes was needed for the improvement of their reflection papers, which caused them to spend more time than expected to achieve overall understanding of the feedback. Similarly, it was also asserted that the audio feedback was hard to follow to acquire particular points regarding the necessary corrections in their papers and listening to the same audio was considered time-consuming compared to the written feedback. The following excerpt clearly shows that the graduate students regard audio feedback time-consuming, and the process to make use of feedback and to revise is delayed:

[…] It wasn't useful for me to follow. I need to listen to it many times to see what I need to improve in my paper. I didn't feel comfortable and fully focused (S2, Open-Ended Questions, 07.05.2020).

[…] it takes time to listen so it may not be practical… I had to listen to the feedback many times so it was a bit hard to follow (S6, Open-Ended Questions, 07.05.2020).

On the other hand, in audio feedback to remember the feedback I listened it over and over and this is a bit difficult […] (S17, Open-Ended Questions, 07.05.2020).

[…] audio feedback is not effective and it is time consuming for me… since I have to listen to it more than one time and I was lost (S1, Open-Ended Questions, 07.05.2020).

As these short excerpts pointed out, audio feedback was considered time-consuming by the graduate students. It was not practical to listen audio files more than once to catch the weaknesses of their individual works, and they felt lost and confused at some points. Therefore, it can be assumed that written feedback was regarded more practical and easy to follow from these aspects.

4.2.2.3. Audio feedback is detailed. The graduate students expressed that detailed and more inclusive feedback on their academic writing assignments was achieved through the provision of the audio feedback. As stated by them, it was more comprehensive than written feedback since it included more in-depth comments and suggestions for their writing assignments in comparison to the written feedback. Such being the case, it was confirmed that the audio feedback was more detailed and informative so that feedback could be constructive and supportive for the students to see their flaws and assets and to improve their academic writing. Witten feedback, on the other hand, is relatively inadequate to support graduate student for the development of their academic writing and address directly the weak parts of their works. Some of the participants shared their opinions as the following:

[…] I believe that at this level, audio feedback is far more effective. There is so much that a person can miss when they are just highlighting errors. I recognized that in the audio feedback given, even while the instructor was recording the feedback, suggestions and ideas were being inserted candidly. So, in essence, the feedback was clearer and more informative (S16, Open-Ended Questions, 07.05.2020).

I feel positive about audio feedback since detailed feedback given in a few minutes compared to writing comments, which take a lot longer. More opportunity to be constructive and supportive […] (S24, Open-Ended Questions, 07.05.2020).

These sentences indicate that audio feedback provides more details and suggestions since people can express much more while speaking than they do in writing. Thus, using audio feedback guides the graduate students in their academic writing process which was enriched with more constructive and supportive points in instructor commentary.

4.2.2.4 Personalization. It is frequently observed in the graduate students' comments that the audio feedback was believed to be more personalized by cause of hearing the feedback giver's voice, which, as in their expression, happened to be 'a different experience' for them. As seen from the sharings below, additionally, the participants affirmed that they felt more motivated and encouraged when they heard the instructor's voice to develop their academic writing:

[…] Oral feedback gives a more sincere tone though, it was personalized for sure… Audio feedback is probably more personalized and hearing the voice of the teacher can encourage students to produce better texts (S3, Open-Ended Questions, 07.05.2020)

[…] it (audio feedback) motivated me more compared to written feedback. Hearing the voice of the feedback giver was a different experience for me […] (S23, Open-Ended Questions, 07.05.2020)

As much as enhancing students' motivation, audio feedback seems more comforting for the students when they heard their lecturer's voice as, probably, it was not so different than a conversation they would have in a physical place. As for personalized feedback, the participant finally stated that audio feedback contributes to strengthen the instructor-student relationship. The following excerpts show us that the participants believe audio feedback to better at comforting and improving student-instructor connection:

When I get audio feedback from my lecturers, I feel comfortable since I hear their voices. Moreover, it enhances the relationship between learners and lecturers […] (S26, Open-Ended Questions, 07.05.2020)

I really enjoyed having audio feedback. I felt like talking to my instructor and felt better than when I had written feedback… intonation of the teacher/instructor affects your mood. You can understand the intention better with audio feedback […] (S18, Open-Ended Questions, 07.05.2020).

As clearly stated by the participants, audio feedback enabled student to get personalized feedback, which made them feel valuable and decreased affective emotions regarding the instructor comments and their academic writing assignments.

In short, the emerging themes and sample excerpts from the answers to open-ended questions indicated that the participants held mostly positive attitude toward the audio feedback and this experience. It was considered to provide more detailed feedback and instructor comments, to be helpful to detect the significant parts and underlying message in the feedback and to be more personalized in comparison to written feedback. Despite these positive reviews, the need for listening audios more than once and the difficulty in matching instructor commentary and writing sections were pointed as time-consuming. Therefore, it can be assumed that there may be few drawbacks of the audio feedback that needs to be paid attention while integrated it in language learning and teaching environment.

4.2.3 Semi-structured interviews. In addition to the open-ended questions, semi-structured interviews with five participants were conducted to explore the graduate students' perceptions and experience of audio feedback in depth. The analysis of the interview data yielded three main themes, which are verbal features in audio feedback, conversational tone of audio feedback and technology oriented. Each theme is explained in the following headings and some excerpts from the participants' interviews are given to illustrate them.

4.2.3.1 Technology-oriented. The interviewees expressed that audio feedback seemed very intimate since the graduate students were considerably involved in distance education due to the global pandemic inasmuch as online platforms and web tools. Similar to the fact that the students were quite engaged in online platforms, computer tools and technology itself, one other reason of audio feedback to be more effective was because it

is auditory. So much as young generation, many people prefer listening to podcasts or watch videos over reading in order to gain information about anything; therefore, listening to audios to receive feedback on their reflective assignments was favored more than reading written feedback. It was also underlined that audio feedback was more motivating, and it allowed the graduate students to reflect more, thereby, internalize the feedback because they associated it and their experience with technology. It was suggested by the participants that students can benefit from audio feedback to provide peer feedback to one another and can be more involved and enjoy learning process. One of the interviewees added that the graduate students probably felt more connected to the lesson, active and be more connected to the course thanks to audio feedback and its technologically advanced nature. The following excerpts illustrates the participants' opinions better:

> […] We are living in a technological age. We are, actually, we like experiencing things with the technology, technological things. So, audio feedback is a part of this. So, when we, you know, were exposed to this technological advancement and technological thing with the help of audio feedback, we felt…it helped us felt we are using technology, we are using it on the behalf of education. I think everybody felt it helped our motivation, it helped our process of reflection […] (P3, Interview Data, 19.06.2020)

> […] Because of the distance education in pandemic period, we are so much integrated with the technology. So, I don't think anybody will ask questions like "what is audio feedback?" and that may be the reason why they favored audio feedback over written one in the surveys. Cause they know it and they think positively about it…And people are more into technology. Compared to reading something, they prefer listening or watching. So, audio feedback is advantageous at this point […] (P2, Interview Data, 18.06.2020)

In addition to the mentioned advantages of audio and video feedback, the participants also pointed out several challenges of audio feedback, which are mostly technology-related drawbacks. These challenges were intelligibility of the given feedback, technical problems and inconvenience of receiving audio feedback. The participants expressed that the quality of the recording needs to be good enough to hear the instructors' words and intonation. Otherwise, it may cause a problem for delivering quality feedback

to students. They also mentioned that instructors need to use compatible tools which will help students to listen audios regardless of technical features of devices they use. Additionally, the participants draw attention to the inconvenience they experienced when they received audio feedback. They stated that audio feedback was problematic in revision process as they did not understand what was meant in a particular part of feedback or the reply is usually more extended than in written feedback. They had to go back and listen to the audio feedback again. They expressed that going back, finding that particular part and listening twice or three times was rather annoying and time consuming. The written feedback, on the other hand, was much more convenient to refer back and match the instructor comments and the problematic parts of their reflection papers. Some of the interviewees shared his/her opinions as below:

> […] I need to focus on each part that he talks. Otherwise, I felt lost when I listened to it for the first time…You need to listen several times to understand the point of the feedback, the point the instructor mean…what he means in that part… Moreover, I realized your mobile phone should be compatible with this technology if you don't want to listen it from the computer […] (P4, Interview Data, 21.06.2020)

In brief, audio feedback was told to have some technological drawbacks like the compatibility problems with audio player applications and technical problems for voice intelligibility. However, in spite of these drawbacks, they expressed that positive results in achievement scores and feedback preferences may be because of high engagement in the use of computer and its tools as a demand of technology age and existing global pandemic nowadays.

4.2.3.2 Verbal features in audio feedback. Most of the participants found audio feedback more informative compared to written feedback thanks to verbal features in the audio feedback. First of all, they mentioned instructor's intonation and sentence stress as verbal clues to clarify the meaning of feedback. They claimed that the instructor's voice and intonation clarified what the instructor meant on a particular part so that they could actually infer what s/he wants to point out. The graduate students were also able to identify their mistakes regarding reflection assignments better with the help of audio feedback than

they did with the written feedback. Moreover, the participants reported that they had unclear idea of feedback when they received the written feedback, and they had follow-up questions regarding the underlying message in the feedback and were in need of further explanations from their instructor. Some of the participants shared their experience as the following:

[…] You can hear the voice and intonation of the teacher. For me, it's very important. I can feel that his, that person satisfied with my, for example, assignment or not. Or how he or she is thinking about my job… In written one, I always asked questions in my mind. "Sir what you mean by this or that?" Audio feedback it is pointed out because you hear that person's voice…I understood what is my mistake. Because of the intonation of the professor, I understood I did not do something that terrible. (P1, Interview Data, 03.06.2020)

[…] At the time when I got audio feedback, my feedback was more detailed. I realized where I need to make changes, especially together with the intonation of the instructor. I was able to take notes point by point and it was clear because his voice pointed my mistakes, problematic parts […] (P2, Interview Data, 18.06.2020)

One participant claimed that audio feedback allows students to follow the provided feedback more easily because of the presence of instructor's intonation, and it also helps students to feel fewer negative emotions when they hear their own mistakes. It was also mentioned that written feedback may be discouraging for them and other students as the comments in written feedback may seem more criticizing and harsher compared to audio feedback, which leads to loss of motivation for the course and academic writing.

[…] The fact of voice in audio feedback makes our weaknesses softer, and it is easier to follow to give a proper feedback. Written feedback may be discouraging for us, students…In written feedback, when you read comments, tone of written language may seem harsh and students or we may feel down. But audio feedback is more detailed, and you know you are cared and feel more valuable thanks to your instructor's voice. […] (P3, Interview Data, 19.06.2020)

To conclude, it is seen that many points regarding verbal features in audio feedback were common with the ones the participants stated in their answers to open-ended questions. A highlighted point regarding verbal features in audio feedback different from

open-ended questions was that the graduate students appreciated audio feedback to soften the comments focusing on their weaknesses and the parts that need improvement whereas written feedback was thought to convey these messages in harsher and criticizing way.

4.2.3.3 Conversational tone of audio feedback. The last theme emerged from the semi-structure interviews is conversational tone of audio feedback. The interviewees claimed that audio feedback was more comfortable for both feedback giver and feedback receiver as it sounded like an actual conversation between their instructor and them. They also explained that instructors may feel more relaxed while giving audio feedback as they do not need to limit themselves in their explanations as they do in written feedback. One of the participants also claimed that since giving and receiving audio feedback is similar to having a conversation, people, feedback providers in this context, express themselves much better:

> […] Listening to audio feedback was like talking to my instructor on the phone. It felt different, but it was also good for me. I could feel more comfortable with his comments […] (P2, Interview Data, 18.06.2020)

> […] I think audio feedback helps people understand each other very well because it's like talking to one another. For my case, my instructor, he was so comfortable to explain strong and weak points, I understood better. In written format, we may not explain ourselves at best. In conversation manner, it is easier. I may not express my ideas well in written for example…Teachers and students feel more comfortable because of this conversation manner. […] (P5, Interview Data, 21.06.2020)

Their further comment was that the graduate students felt motivated because they were able to feel their instructor's comfort and warmth in his/her voice with audio feedback. On participant stated that hearing instructor's voice made it easier to follow the feedback and the comments on the mistakes/weaknesses in their assignments were not recognized as harshly criticized thanks to the conversational manner of the audio feedback. The comments provided in written way may sometimes be discouraging for students and peers, however, this possibility is lower in audio feedback. Audio feedback

made students to feel more valuable and directly in position of an addressee. Therefore, it was believed to develop the rapport between students and instructors:

> […] It's been a pleasant experience to hear my professor's voice in an audio while learning about my paper. It felt personal to me… Also, audio feedback helps to build a positive rapport with your instructor and teacher I think. As most of the people agree, face to face connection or talking to someone directly is stronger way of understanding each other compared to writing. Also, we can hear the tone of that person's voice which makes us calm or excited [..] (P4, Interview Data, 21.06.2020)

> […] Audio feedback was more motivating because it was talking to your instructor in person. Hearing teacher's voice is like talking to him. This makes you feel more valued and it felt what you do is valuable. And this increased my motivation. […] (P3, Interview Data, 19.06.2020)

As the findings of the semi-structured interview and the sample excerpts suggested, conversational mode of audio feedback resulted in better comprehension of feedback and the development of the rapport between the graduate students and the instructor as well as it increased the graduate students' motivation for academic writing assignments.

Similar to the findings of the open-ended questions, the findings of semi-structured interviews revealed that the graduate students held positive perceptions of the audio feedback as shown in the emerged themes. In that, the comments of the participants specified that the conversational nature of the audio feedback and verbal clues in it contributed to the quality of the feedback provided and the increase in their motivation. Besides, it was seen that the graduate students appreciated audio feedback due to its association with technological aspects and the distance education period which they have experienced recently. To put it shortly, it can be inferred that the audio feedback was favored more for academic writing by the graduate students.

Chapter 5

Discussion and Conclusion

5.1. Discussion of Findings for Research Questions

The present study mainly aims to assess the effectiveness of audio feedback on academic writing and to compare its effect to the effect of written feedback by focusing on graduate students' academic writing. This study also explored how graduate students' view audio feedback compared to written feedback. Finally, the study attempted to find out whether there is a change in graduate students' feedback preferences after they are received both audio and written feedback. While doing so, the research employed bot quantitative and qualitative data collection tools and analysis methods. To achieve this, the study benefitted from graduate students' achievement scores in two reflection assignments, their first and second drafts, open-ended questions, semi-structured interviews and a preference scale which was developed by the researcher and applied before and after the implementation period. This chapter of the thesis discusses the findings of the study in the framework of the relevant research questions.

5.1.1. Discussion of the findings of RQ1: Is there any difference in terms of academic writing achievement as a result of written feedback and audio feedback?

The purpose of the first research question was to investigate whether there was any difference in terms of academic writing as a result of written feedback and audio feedback. In order to find an answer to this research question, the graduate students' academic writing achievement scores that were graded for the first and second drafts of two reflection assignments were analyzed. The results of Mann Whitney U Test showed that there was a statistically significant difference between the graduate students' scores after they received audio feedback and written feedback. In other words, it was seen that the graduate students achieved higher scores following the provision of audio feedback on their academic writing.

Based on these results, it can be assumed that audio feedback is more effective to promote writing achievement than written feedback, and the role of it seems positive in the development of academic writing. This was supported by a prior proposition in the literature; in that audio feedback was proved to be effective in terms of the number of successful revisions that it yielded (Rasi & Vuojärvi, 2018). A similar application of the audio feedback along with the other technology-enhanced feedback types in assessing teacher performance was associated with the improvement of their performance, which resulted in high preference of audio feedback over all the other feedback types (Luck et al., 2018). Improvement in academic writing achievement in the current study can be attributed to the nature of audio feedback to have in-depth comments on student work and to be clearer with the presence of verbal features, which were referred as clues by the participants. This belief of the participants is similar to the suggestion of the study by Rodway-Dyer et al. (2009), which acknowledged that audio feedback and written feedback were more effective in the development of written assignments in comparison to video feedback. The efficiency of the audio feedback was associated with the depth, the clarity and the easiness to comprehension of commentary. In addition to all, the technology-enhanced feedback types may be presumed to lead better student performance in writing as the results of the present study is parallel to the study carried out by Ali (2016) whose findings revealed that the group provided screencast feedback performed better in writing tests in comparison to the group who received written feedback.

In brief, it can be concluded that the graduate students benefitted from audio feedback in their academic writing process and audio feedback was proved to have more significant role in and critical contribution to the graduate students' academic writing achievement in comparison to written feedback, which aligned with previous research reports' conclusions.

5.1.2 Discussion of the findings of RQ2: To what extent does audio feedback have an impact on the development of graduate students' academic writing? Another main aim of the current research was to identify to what extent does audio feedback have an impact on the development of graduate students' academic writing. Therefore, a document analysis was carried out for each graduate students' submitted first and second

drafts of two reflection assignments. While doing so, an adapted draft analysis rubric was used to frame the analysis within a standardized procedure.

As regards to the level of revisions, the findings suggested that audio feedback yielded twice as many revisions as written feedback in paragraph level, and the graduate students made more revisions in word level after they received audio feedback. It was seen that written feedback had higher numbers of revisions in phrase level than audio feedback. Considering these instances in different levels of revision, it can be inferred that audio feedback prompted more revisions in macro-level writing in contrast to written feedback which was supported by the findings of one of the first technology-mediated feedback practices studies which found that the majority of the student revisions stimulated by e-feedback was in paragraph and sentence levels (Tuzi, 2004).

With respect to the types of revision, it was identified that only noticeable difference was observed with revision type "split" out of seven types, which were higher in numbers following the provision of audio feedback. Other types of revision had nearly same numbers of revisions for both feedback types. Therefore, it is possible to say that both feedback types led to very similar changes in terms of the types of revisions made in all student drafts.

As a final point, when the purposes of revision were gone through, it was recognized that only contrasting instance was with the changes made to clarify meaning of a sentence or an expression in the text; in that, the graduate students benefitted from the written feedback more in this sense compared to the audio feedback. No other striking results were spotted in regard to the purposes of revision. This finding contradicts to the conclusion previously reached in a study by Tuzi (2004) suggesting that most of the changes in the student drafts after e-feedback centered on clarifying meaning in the existing text and adding new information. The finding of the present study may suggest that the graduate students utilized written feedback more to finding and generating ideas into the existing text, and correspondingly the larger blocks of text like examples and explanations was included rather than smaller elements like grammar and word changes.

According to the findings indicated above, it can be speculated that both feedback types were effective in terms of the number of succesful revisions that the graduate students made to their reflection assignments, and prompted higher numbers of revision

instances. Nonetheless, both feedback types could not produce diverse numbers of revisions in most of the sub-categories of three criteria of revision process even though a few contrasting occurences were encountered in different criteria of revison process. The related literature, on the other hand, indicated that students the students benefited more effectively from technology-enhanced feedback for the corrections on their writing assignments (Denton, 2014) and more revisions were made by the learners after the provision of the audio feedback (Rasi & Vuojärvi, 2018). It is likely to suppose that the graduate students concentrated on the content of the feedback rather than the type of feedback while revising their reflection assignments.

In short, audio feedback and written feedback led to successful revision processes with a number of prompted changes; however, no other contradicting instances than the ones in few sub-levels were generated by both feedback types in terms of the levels of revision, the types of revision and the purposes of revision.

5.1.3 Discussion of the findings of RQ3: What are graduate students' perceptions of audio feedback compared to written feedback for academic writing?

Exploration of the graduate students' perceptions of audio feedback compared to written feedback on academic writing was another one of the major component of the recent study. To achieve that, the graduate students were asked two open-ended questions in the post-test survey and semi-structured interview were carried out with five of them. Several main themes emerged as a result of the content analysis of these quantitative data.

The graduate students' answers to the open-ended questions mostly gathered around four main themes which are verbal features in audio feedback, audio feedback is time-consuming, audio feedback is detailed and personalization. By the end of the content analysis, the themes of verbal features in audio feedback, conversational tone of audio feedback and technology oriented emerged from the data of semi-structured interviews.

The graduate students reported that the verbal features such as intonation, emphasis and expressions in audio feedback allowed them to easily catch the important points and clearly understand what the instructor meant in a certain part so that they believed that they benefitted from the instructor's comments better after they receive audio feedback. This finding aligned with Merry and Orsmond's (2008) study in which students favoured

audio feedback for highlighting problematic sections of their works with the help of changes in teacher volume and tone of voice. As Northcliffe and Owens (2009) proposed, these features in audio feedback contribute to greater comprehension of the information in feedback. Additionally, it was mentioned that receiving feedback in audios allowed students to feel less negative about their work and the given feedback thanks to tonal clues in the instructor's voice. Similarly, Lefroy (2020) suggested that students were able to cope with the critism in instructor comments when they were provided feedback as audio recording.

Audio feedback was considered to be more personalized by the majority of the participants as hearing the feedback giver's voice made them to feel being cared by their instructor leading to a stronger connection between themselves and their instructor. In align with this finding, preceding groundworks suggested that students were exposed to more personal comments and thus they felt greater sense of personalization through audio feedback (Merry & Orsmond, 2008; Gould & Day, 2013).

The graduate students mostly appreciated audio feedback for being more detailed and informative than written feedback since the feedback giver can fit many details while speaking compared to writing comments and suggestions. Such being the case, it was expressed that audio feedback was more comprehensive to include additional suggestions and details to support the improvement of their works. With this finding, the present study confirms earlier claims in that audio feedback can convey large amounts of details regarding one's work (Lunt & Curran, 2010; Merry & Orsmond, 2008; Lefroy, 2020). It adds that audio feedback supports students by offering in-depth comments and suggestions rather than only indicating weaknesses of the submitted work (Emery & Atkinson, 2009).

In addition to all the mentioned points above, the graduate students stated that listening to instructor comments and suggestions for their works as audios felt like having a conversation with their instructor. It was claimed that this conversational mode of audio feedback enabled the instructor to explain himself better, which was associated with better comprehension of feedback and the development of the rapport between the graduate students and the instructor. This finding can be attributed to Middleton, Northcliffe and Owens' (2009) assertion in that deep communication between students and instructors can

be promoted by the social characteristics of audio feedback and other elements rather than only words.

Most of the interviewees underlined the technological aspects of audio feedback. They expressed that the graduate students may be positive to receive audio feedback due to high engagement in the use of computer and its tools as a demand of technology age and existing global pandemic nowadays. Besides its association with the demands of time, the participants also mentioned several challenges related to technological aspects that may be experienced while providing audio feedback. These included the compatibility problems with audio player applications and technical features for voice intelligibility. Similar but same experiences of technology-related issues were discussed in the previous studies (e.g. Merry & Orsmond, 2008; Rawle, Thuna, Zhao & Kaler, 2018).

Despite these positive reflections on audio feedback, most of the participants also specified that audio feedback is more time-consuming than written feedback during the revision process because they had to listen more than a time, go back to match a certain part of feedback to the related section in the writing and take some notes while listening to feedback. Accordingly, they needed to spend more time to revise their assignments. These responses aligned with previously published reports indicating that written feedback was more convenient to reread the comments and correction and refer back whenever students want to (Morris & Chikwa, 2016); and that students experience difficulties in finding related part in audio to revise a certain section in their writing (Brearley & Cullen, 2015). Contrary to the current results, Northcliffe and Middleton (2008) reported that audio recordings were considered by instructors to be less time-consuming than written feedback for the provision of feedback.

As seem in the findings, although there exist several drawbacks that need to be taken into consideration, it can be deduced that the graduate students mostly held positive perspectives of audio feedback and the experience of it, especially for the clarity that it offered with the help of verbal clues.

5.1.4 Discussion of the findings of RQ4: Is there any change in graduate students' preferences towards audio and written feedback for academic writing in terms of a) usability of feedback, b) efficiency of feedback and c) students' feedback preference? In the current study, the pre-test and post-test feedback preference surveys provided insight into whether there is any change in graduate students' preferences towards audio feedback and written feedback on academic writing in terms of usability of feedback, efficiency of feedback and students' feedback preference. The results of the statistical analysis of the surveys pointed out that there was no statistically significant difference in the graduate students' preferences considering all three aspects. In that, the graduate students preferred audio feedback for academic writing as demonstrated in the pre-test results, and this tendency did not change to written feedback, even sligthly increased after they experienced both feedback types for their reflection assignments. Therefore, it can be inferred that the graduate students in the current research had more positive perception of the audio feedback and preferred it over written feedback even before the implementation even though a statistically significant difference was not come across.

This result of the present study is consistent with the findings of Northcliffe and Middleton (2008), who reached the conclusion of that students preferred audio feedback. Similarly, Emery and Atkinson (2009) found that students preferred audio feedback over written feedback as it was believed to provide in-depth feedback and include more than simple comments to contribute to students' works so that they achieved better improvement of their works. As one of the recent studies on the current topic, Lefroy (2020) also suggested in her research that audio feedback was considered to be more effective for formative assessment, and therefore students showed a greater preference of audio feedback over written feedback.

In the current research, the reason for the graduate students' preference of audio feedback over written feedback may be related to its efficiency in the revision process with the help of tone, expression and emphasis in audio recordings. Besides, as also indicated by some participants in semi-structured interviews, familiarity with the technology-enhanced tools in education and language learning and high level engagement

in computer and its tools due to distance education period during global pandemic may have contributed to such an outcome.

Despite the alignment with several studies in the literature, there are also contradictions with this result of the current study. For example; Fawcett and Oldfield (2016) pointed out that students preferred written feedback over audio feedback and they did not find any significant difference between two types of feedback. This was supported by the findings of Sarcona, Dirhan and Davidson's (2020) study by mentioning that students' preference of feedback was in favour of written feedback because it was regarded to be more formal, concise and constructive to understand the comments in the feedback. According to Morris and Chikwa (2016), students' preferred written feedback over audio feedback in their study as written feedback allows students to reread and refer back without difficulty whereas it is not that easy with audio feedback.

To conclude, it could be said that the graduate students were positive about audio feedback before the implementation and preferred it over written feedback. However, a slight increase in their preference scores in the post-test survey was not associated with a statistically significant difference. Therefore, there was no significant change in the graduate students' preference towards audio feedback and written feedback; in that, it remained same.

5.2 Practical Implications

In the present study, it was revealed that audio feedback yielded positive results for graduate students' academic writing achievement although major differences between audio feedback and written feedback in revision process was not observed. Moreover, most of the positive findings regarding student perceptions of audio feedback that previous research reported was confirmed by the current research. Still, this research can only suggest several speculated recommendations for how audio feedback can contribute to the development of learner/student writing in dimensions of language learning and teaching.

Considering the significant difference that audio feedback created on graduate students' academic writing achievement, it is possible to say that using audio recording to provide feedback will go some way to addressing their needs to have better standards of

feedback for their individual works. As in the recent study, instructors and teacher should determine and have a set of criteria or rubric for assessment; thus, they can consistently provide comments and suggestion for each written work.

Taking into consideration the existing previous research reports on technology-enhanced feedback types, using a combination of audio recording and written feedback may be much more effective to meet students' expectations regarding the feedback for their academic writing and to guide them on improving their academic writing as well as it may address the limitations of using only either audio feedback or written feedback for students' work.

If audio feedback does, in fact, strengthen the communication and connection between students and instructors as suggested by the participants, it may be used to support students' affective behaviors towards writing and relevant course. It may also help to reduce issues such as low confidence in writing, attrition and self-regulation skills.

Furthermore, contrary to written feedback, audio feedback has the potential of reducing misinterpretation of instructor/teacher commentary, which allows students to internalize and transfer the information to their writings in a more efficient way. Using audio feedback consistently may further thorough transfer of knowledge. In that, students may apply what they achieve in one audio for a certain assignment to other writings as well.

As it is used for instructor commentary, audio recordings may be also used to give peer feedback in learning and teaching contexts so that collaborative learning can be promoted, and the bond between students/learners may be strengthened as recognized for student/instructor rapport. Besides, engagement in providing feedback to peers may appear more appealing to students as they are already involved in technological tools and applications due to their identity of "digital natives" (Prensky, 2001).

Although the participants mostly favored audio feedback, less inclination to it was also associated with some of them. This may relate to the difficulties in relistening audios to refer to weak sections in writing assignments and matching comments and suggestions to certain parts of their works. To address this issue, audio-visual feedback, in other words, screencast feedback which combines audio clips and visual representation of student work may be utilized.

5.3 Conclusions

The study has probed into and attempted to propose well-grounded results on the role of audio feedback in academic writing achievement at graduate level whilst it has provided insights for the graduate students' perceptions about improving their academic writing through audio feedback. The overall results of the data collected through several different tools appeared to be in favor of audio feedback. Nevertheless, some shortcomings and minor exceptions were also included in the results of the current research.

To begin with, the comparison between audio feedback and written feedback showed that there is statistically significant difference between the graduate students' scores after they receive audio feedback and written feedback. In other words, audio feedback was more effective in terms of academic writing achievement.

The document analysis of graduate students' drafts, on the other hand, suggested that both audio feedback and written feedback did not produce critical differences in the revision process of academic writing assignments other than in a few layers. In this sense, it was noticed that both feedback types were effective in yielding higher numbers of revisions; however, one of them was not superior to the other when overall numbers of the revision instances were explored.

As regards to the participants' perceptions of audio feedback, the main themes emerged from the content analysis of open-ended questions and semi-structured interviews included verbal features in audio feedback, audio feedback is time-consuming, audio feedback is detailed, personalization, technology-oriented and conversational mode of audio feedback. The graduate students mostly held positive views on audio feedback and their experience of it throughout the research process. Most of the students stated that audio feedback was more effective for including in-depth comments and verbal features which were not associated with written feedback. Additionally, they appreciated audio feedback as it felt more personalized and like an actual conversation with the instructor. Contrary to these positive responses, the graduate students also mentioned that audio feedback can be impractical and time-consuming in the process of matching teacher comments to the problematic section of their writings.

With respect to feedback preferences, finally, no significant change was identified in the graduate students' feedback preferences towards audio feedback and written feedback. Despite non-existence of significant change, it was seen that the graduate students preferred audio feedback over written feedback prior to their experience of audio and written feedback in the current research.

The current research has contributed to the existing groundwork by inquiring the practicality of one of the technology-enhanced feedback types, audio feedback, in academic writing context with the combination of different research tools. Along with congruence with the previously suggested conclusions, the findings of the present study offer recommendations for the enhancement of feedback process in writing.

5.4 Recommendation for Further Research

The present study represented an investigation to the role of audio feedback on graduate students' academic writing at a foundation university and their perceptions of audio feedback. The sample size of the present study was limited to 28 graduate students as it was carried as a part of one master's course. A study with a larger group of participants would be conducted to assess the impact of audio feedback on writing; furthermore, including instructors' perceptions and analysis of given audio feedback could offer differences and it could be considered as a part of a future study.

Likewise, the current research utilized only two writing assignments and was limited to a short period of time. Thus, longitudinal studies tracking students/learners' writing process over a long period of time are needed to be conducted to explore whether thorough transfer of knowledge occurs, and if so, how audio or any technology-enhanced feedback type does or does not promote this process.

It would be beneficial to probe into learners/students' expectations and experiences of audio feedback and its quality with different types of skills (such as speaking) and a variety of tasks (such as research projects and group presentations). Such type of research also provides an opportunity to understand whether students/learners'

feedback experience is affected by the level of provided feedback (micro, macro or global).

Finally, investigations concerning the impact of audio feedback on issues such as student engagement and reflectivity rather than only focusing on the practicality of feedback types would enrich the existing literature.

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APPENDICES