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Facultad de Filosofía, Letras y Ciencias de la Educación
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Effects of Using Visual, Auditory, and ICT Tools on Suprasegmental Features of Pronunciation in ESL/EFL Classrooms

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Autores:

Kevin Alexander Córdova Loja

Anthony Bryam Tello Guamán

Director:

Monica Patricia Abad Celleri

ORCID:  0000-0001-8381-5982

Cuenca, Ecuador

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Resumen

La presente síntesis de investigación tuvo como objetivo analizar los efectos de diferentes materiales de enseñanza - audiovisuales, auditivos y TICs - en la adquisición de características suprasegmentales del inglés, así como también analizar las ventajas y desventajas de este tipo de materiales. Para este propósito, se examinaron veinte artículos (todos empíricos, escritos en inglés y enfocados en características suprasegmentales del inglés) de acuerdo con los siguientes criterios: enseñanza de la pronunciación, enfoque, contexto, diseño de investigación y ventajas y desventajas de los materiales de enseñanza de pronunciación. Los resultados de este análisis indican que el uso de materiales de enseñanza audiovisuales, auditivos y TICs produce mejoras en el aprendizaje de características suprasegmentales; sin embargo, el uso de materiales audiovisuales supera al uso de los otros tipos de materiales, siendo los materiales auditivos los menos utilizados. Además, se encontraron algunas desventajas del uso de estos materiales de enseñanza. Por lo tanto, los profesores deben emplear materiales de enseñanza audiovisuales, auditivos y TICs para enseñar características suprasegmentales teniendo en cuenta las desventajas que su aplicación puede conllevar.

Palabras clave: material audiovisual, aprendizaje visual, característica suprasegmental



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Abstract

This research synthesis aimed at analyzing the effects of different teaching materials – audiovisual, auditory, and ICT materials – on the acquisition of English suprasegmental features as well as the advantages and disadvantages of these types of materials. For this purpose, twenty articles (all empirical, written in English, and focused on English suprasegmental features) were examined according to the following criteria: pronunciation teaching, focus, context, research design, and advantages and disadvantages of the pronunciation teaching materials. The results from this analysis indicate that the use of audiovisual, auditory, and ICT teaching materials yields improvements in the learning of suprasegmental features; however, the use of audiovisual materials outnumbers the use of the other types of materials, auditory materials being the least used. Moreover, some drawbacks of using these teaching materials were pinpointed. Therefore, teachers should employ audiovisual, auditory, and ICT materials for teaching suprasegmental features taking into consideration the drawbacks that their application may entail.

Keywords: audiovisul material, visual learning, suprasegmental characteristic



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Dedication

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Introduction

According to Fraser (2000), proficient pronunciation not only fosters mutual understanding among speakers but also conceals grammatical and lexical shortcomings; thus, its significance becomes paramount in the context of proficient communication. Although pronunciation comprises both segmental and suprasegmental aspects, many researchers have highlighted the importance of suprasegmentals for the development of intelligibility (Zarifi & Sayyadi, 2015). However, suprasegmental aspects have been overlooked in pronunciation teaching due to teachers' lack of knowledge of suprasegmental features, how to teach them, and insufficient teaching materials; consequently (Pourhosein & Banou, 2016). Therefore, this research synthesis aims to analyze the effects of using three different types of teaching materials (audiovisual, auditory, and ICTs) that can be useful for English teachers in teaching pronunciation to improve suprasegmental features.

This research synthesis is organized into five chapters. The first chapter provides an overview of the research, including a description, the background, the problem statement, the rationale, the research question, and the objectives. The second chapter covers the theoretical framework which describes crucial concepts such as English pronunciation, pronunciation strategies, and audiovisual, auditory, and ICT materials for teaching pronunciation; the literature review, which includes an overview of the research that has been carried out in the area of suprasegmental features, is also included in this chapter. The methodology is covered in the third chapter, which explains the inclusion of the criteria to select the studies and how the research was conducted. The fourth chapter details the analysis of the chosen studies divided into four different categories, which helped to address the research question and achieve the objectives. Finally, the fifth chapter includes the conclusions and recommendations of this research synthesis.

Chapter I: Description of the Study

1.1 Background

Teaching English as a second language (ESL) or foreign language (EFL) involves the development of learners' different skills, such as writing, listening, reading, and speaking, which also include different subskills. For instance, speaking is composed of mechanics involving correct grammar, vocabulary, and pronunciation (Kurum, 2016). Pronunciation knowledge involves not only segmental features, the perception and production of sounds, but also suprasegmental features, such as stress, intonation, and rhythm (Prashant, 2018).

Pronunciation may influence the flow and continuity of speech since poor pronunciation might lead to misunderstandings, requiring the listener to make a more significant effort to understand the speaker. Moreover, it can lead to low judgments of overall proficiency, especially by native speakers, who can assume that since the speaker does not have the pronunciation skills needed, he/she also lacks grammar and vocabulary knowledge (Backley, 2015). According to Fraser (2000), good pronunciation helps learners to be easily understood, outperforming grammar and vocabulary when these two are limited.

Furthermore, the importance of learners' knowledge of suprasegmental features for pronunciation has been underscored in ESL classrooms because they are linked to listeners' comprehension of speech and speakers' oral proficiency (Kostromitina & Kang, 2021). For example, these authors reported "that placing incorrect sentence stress or emphasizing every word in a run, regardless of its function or importance to the communicative purpose, can negatively affect listeners' comprehension" (p. 4). Thus, focusing on suprasegmental features in ESL classrooms is essential for helping learners improve their pronunciation skills.

Nevertheless, according to Burgess and Spencer (2000) and Breitreutz et al. (2001), pronunciation is among the most important yet neglected aspects of teaching and learning in ESL classrooms.

According to Yoshida (2016), pronunciation teachers should be knowledgeable of the following aspects:

- the suprasegmental characteristics of the English language, such as rhythm, intonation, and stress.
- appropriate teaching strategies that, apart from handling repetition, include visual, sound, and technological materials to generate a noticeable impact on students and thus improve their pronunciation.

Therefore, teaching strategies that include auditory, visual, and ICT tools emerge as an alternative way to teach pronunciation more dynamically. Moreover, implementing such materials in ESL/EFL classrooms can be effective for teaching pronunciation.

After being implemented for some time with ESL learners, such tools have shown improvements in suprasegmental learning and, consequently, in their oral production. For instance, Saldiraner and Cinkara (2021) have recently highlighted the positive effects of using songs instead of textbooks when teaching pronunciation. In this study, the participants were asked to listen to specific song lyrics and sing along. The post-test results indicated a significant improvement in their motivation, vocabulary acquisition, and pronunciation comprehensibility. Yet, it should be considered that, in this study, the applicability of this tool is limited to only young learners, leaving aside other age groups such as adolescents and adults. Cartoons are another helpful material that have shown significant improvement in learners' pronunciation in ESL/EFL classrooms. For instance, Alghonaim (2020) found that children's exposure to cartoons at an early age can be crucial for developing proper pronunciation since cartoons are very interactive sources, which not only improve learners' pronunciation but also positively affect their motivation. Consequently, the participants unconsciously grasped specific patterns such as intonation, stress, and the rhythm of English, nearly acquiring a native accent. Although the study showed promising results in pronunciation, it considered only one specific case, a three-year-old child; therefore, the results cannot be generalized, and using cartoons in a classroom may not yield the same results with other learners. Nevertheless, cartoon usage can be considered an alternative strategy to actively engage the student in the learning process.

Implementing ICT tools in pronunciation teaching has become imperative since learners can develop a range of dialects and variants of non-native languages through technological tools (Anisimova et al., 2020). In fact, "learning with technology has become an essential part of education" (Anisimova et al., 2020, p. 200); they emphasize using YouTube since it is an essential tool for improving learners' pronunciation skills. In their survey research, the students mentioned the necessity of using pronunciation videos in their academic classes since they believe ICT tools are necessary to perceive a foreign accent more clearly.

Moreover, the students reported an improvement in their pronunciation skills thanks to using YouTube pronunciation tutorials. However, implementing technological tools should be balanced since pronunciation cannot be taught only with videos, so teachers are recommended to implement ICT tools hand in hand with other didactic materials to enhance learners' pronunciation skills.

1.2 Problem Statement

Even though pronunciation is a very important aspect of language learning, it has not been sufficiently addressed in ESL/EFL instruction for numerous reasons: a) uncertainty on the part of teachers when teaching pronunciation compared to other aspects such as grammar or lexis,

b) lack of knowledge on how to teach pronunciation to EFL learners, c) limited time allocated to pronunciation instruction in ESL classrooms, d) insufficient material or educational resources to teach pronunciation and e) the teachers' perspective on teaching pronunciation as a tedious or not-so-important aspect (Pourhosein & Banou, 2016).

Teachers' uncertainty when teaching pronunciation in ESL contexts is probably due to their lack of knowledge of strategies to teach pronunciation. In a study by Datko (2013), it was uncovered that student teachers at the university acquire knowledge to improve their own oral production but do not receive instruction on strategies to teach pronunciation per se.

Moreover, ESL/EFL teachers need more time to expose students to the language. For instance, in Malaysian secondary schools, Shah et al. (2017) stated that time constraints are reflected in the limited time and the many topics to be covered, which lead teachers to emphasize finishing such topics -that usually only focus on grammar and writing- and not on developing the learner's oral skills. Furthermore, the materials required to teach pronunciation are usually less readily available. Insufficient materials in EFL classrooms, such as textbooks on pronunciation, laboratories, computers, tape recorders, projectors, or audiovisual equipment, do not allow effective pronunciation teaching (Fatiloro, 2015; Nurkamto, 2003 as cited in Mumary, 2017). According to Pourhosein (2016), the lack of materials may impede teachers from basing their pronunciation teaching on explicit material, which makes the teaching process inconsistent.

Due to the previously mentioned factors, such as the lack of teacher training, the insufficient time allocated to pronunciation teaching, and the absence of materials suitable for use in classes, teachers may not give teaching pronunciation the attention it deserves. Additionally, Wei and Zhou (2002) supported the problematic situation of pronunciation teaching by stating that "pronunciation teaching is probably the most neglected aspect of English language teaching" since teachers consider it "not important at all" or do not know "how to teach pronunciation" (p.4). Therefore, teachers need the appropriate strategies and materials to encourage and improve their students' oral production. As Fraser (2000) pointed out, teachers should count on the necessary tools, methodology, and supplies to increase their knowledge of pronunciation instruction and be prepared to guide their students to achieve intelligible pronunciation.

Although pronunciation teaching has been gaining momentum in recent years in schools, it still can be limited by the factors mentioned above; therefore, since education is constantly evolving, and new pronunciation teaching instruments such as songs, cartoons, and ICT tools have shown to boost students' pronunciation skills, teachers should consider using these

modern strategies to foster students' pronunciation development and give pronunciation the attention it deserves.

Thus, this research synthesis aims to find out the effects of pronunciation teaching strategies that incorporate songs, cartoons, and ICT tools on learners' pronunciation, especially on suprasegmental features.

1.3 Rationale

The use of audiovisual materials for teaching pronunciation allows students to learn in a more dynamic way that does not involve only listening to information from a book but allows them to see, hear, and perform activities that will make them more interested in learning (Wulandari et al., 2008).

Several studies have supported promising effects of particular strategies for teaching pronunciation. For instance, Suwartono (2013) found that the inclusion of materials such as target language video clip samples and video recordings in the classroom can be beneficial for developing suprasegmental features without having to teach them explicitly, being also more engaging and more efficient. Likewise, Khoshsima et al. (2017) showed that complementing traditional pronunciation teaching techniques with ICT tools such as Computer Assisted Pronunciation Teaching (CAPT) software has a superior impact on the learning of suprasegmental features since those tools provide activities that are more focused on practicing without being explicit.

Therefore, the use of audiovisual material and technological tools can generate a significant impact on student learning and provide variety and dynamics in the classroom. However, these tools should not be overused to guarantee their effectiveness; otherwise, they will create a monotonous learning environment in which the same strategies and materials are used; in other words, these tools should complement the teaching processes (Yoshida, 2017).

Pronunciation teaching should be carried out by managing explicit instruction, which is based on the transmission of knowledge, and implicit instruction, which produces learning through exposure to subconscious input. The combination of these two instructions allows for the proper development of pronunciation skills (Naeini & Adni, 2017).

Through analyzing the effects of visual, auditory, and ICT tools on students' pronunciation, this research synthesis will provide insights for EFL teachers so that they can make informed decisions regarding pronunciation teaching.

1.4 Research Question

- What are the effects of using visual, auditory, and ICT tools on the suprasegmental features of EFL/ESL learners' pronunciation?

1.5 Objectives

1.5.1 *General Objective*

- To analyze the effects of using visual, auditory, and ICT tools on the suprasegmental features of EFL/ESL learners' pronunciation.

1.5.2 *Specific Objectives*

- To determine the advantages that visual, auditory, and ICT tools have on suprasegmental aspects of EFL/ESL learners' pronunciation.
- To determine the disadvantages of using visual, auditory, and ICT tools to develop suprasegmental features.

Chapter II: Theoretical Framework and Literature Review

2.1 Theoretical Framework

This chapter starts with definitions of segmental and suprasegmental features of English pronunciation. Then, it deals with pronunciation teaching strategies and auditory, visual, and ICT materials for teaching. These descriptions play a valuable role in understanding what will be discussed in the literature review section.

2.1.1 English Pronunciation: Segmentals and Suprasegmentals

According to Pourhosein (2016), “English Pronunciation is one of the most difficult skills to acquire and learners should spend lots of time to improve their pronunciation,” in order to achieve intelligible pronunciation for the purpose of communication (p. 1). Besides mentioning the crucial role of pronunciation for learners, the author emphasized the importance of paying attention to the sounds of syllables and words, stress, and the rise and fall of the pitch when speaking, among other features of pronunciation.

Establishing the difference between segmental and suprasegmental features is important to understand their influence on learners’ pronunciation performance. On the one hand, segmental features involve “all the consonant and vowel phonemes” (Sharma, 2021, p. 64). These features can be identified either physically or audibly and can be described by voicing, place of articulation, and mode of articulation of a sound (Sharma, 2021). On the other hand, Sharma (2021) stated that suprasegmental features apply to a group of sounds or an entire syllable of a spoken utterance rather than just a single sound and that suprasegmental features involve criteria such as “loudness, pitch, juncture and duration” (p. 67). Korkut and Çelik (2018) stated that suprasegmental features play a significant role in intelligibility and communication and have gained more attention in language education. Additionally, Zhang and Yuan (2020) reinforced the previous statement by saying that focusing on suprasegmental pronunciation instruction yields more significant improvements in comprehensibility compared to emphasizing segmental features.

2.1.2 Pronunciation Teaching Strategies

According to Yates and Zielinski (2008), pronunciation involves the composite knowledge of aspects linked to the production of individual sounds that denote meaning in speech (segmental aspects) and how these sounds are expressed orally, taking into account stress, rhythm, and intonation (suprasegmental aspects) to render oral production more precise and understandable. The author argued that pronunciation should be taught to lead students to acquire intelligible oral production instead of a native accent. Accordingly, it is advisable for teachers to use new technologies and adapt them to manage their students’ oral communication better.

According to Sarode (2018), teaching strategies are “methods used to help students learn the desired course contents and be able to develop achievable goals in the future” (p. 58). Teaching strategies should be analyzed to ensure that the appropriate strategy is applied according to learners' needs. In fact, Berk (2009) stated that teaching strategies should adapt to the transformation the world is imposing on the field of education and that strategies involving multimedia, visual literature, face-to-face interaction, and internet content creation can significantly impact today's modern digitized education. Nevertheless, these strategies should be employed based on students' needs, learning styles, and characteristics if they are to serve as tools to enhance the language learning experience.

Shabani and Ghasemian (2017) outlined three main methods for teaching pronunciation: the intuitive-imitative approach, the analytic-linguistic approach, and the integrative approach. These methods rely on explicit, implicit, and integrative intervention. On the one hand, the intuitive method employs videos, websites, and programs that aim to acquaint the learner with the rhythm of the language through listening and imitating sounds without having to resort to explicit theoretical material. On the other hand, the analytical method is based on the implementation of explicit language teaching material such as vocal charts, phonetic alphabet, and articulation descriptions that are complemented with the aid of interactive technologies such as websites or programs. Finally, the integrative method aims to make pronunciation a process to be taught as part of communication and not as part of a process to be taught separately. The integrative method gives greater weight to developing aspects linked to communication in society, dialogue, and oral proficiency than segmental and suprasegmental aspects. Despite differences, all three methods can use technology to enhance students' oral skills, underlying the value of supplementing pronunciation teaching with this type of resource in ESL/EFL contexts.

Wei (2006) mentioned some strategies for teaching pronunciation, such as “providing meaningful materials,” in which teachers adapt resources to use as examples to practice “linking, rhythm, stress or intonation” (p. 14). Another strategy the author mentioned is the “use of songs, games, and tongue twisters” (p. 14), which are directly related to student motivation. Finally, the last strategy mentioned is “assessing students' progress” (p. 14) which can be used to maintain their motivation toward learning pronunciation by assessing the learners' development.

2.1.3 Visual, Auditory, and ICT Tools for Teaching Pronunciation

Teaching aids have an essential role in language teaching since they help teachers to conduct their classes more interactively and dynamically. For instance, technology allows teachers to create a collaborative space for students, provide learners with real problems and scenarios,

and encourage students to think of different possible solutions (Ranasinghe & Leisher, 2009). According to Shabiralyani et al. (2014), visual aids are all those tools (images, pictures, maps, slides, videos, objects) that use the sense of sight as a receiver of valuable information to make the learning process more straightforward. Similarly, according to Abunowara (2016), auditory tools include TV commercials, cartoons, comedy shows, movies, radio news, documentaries, and music. These tools enable teachers to provide more authentic material and information in the target language.

Likewise, Floris (2014) stated that ICT tools are learning facilitators that include the internet, applications, cell phones, and other communication tools. These tools provide specific teaching exercises, up-to-date information, direct interaction, and authentic teaching material (videos, online newspapers, podcasts, newsrooms, and blogs), allowing the language learning process to develop according to the needs and pace of the learners. Using ICT tools has contributed to the management and organization of educational institutions; in addition, the speed and method of knowledge transfer from one person to another have increased thanks to e-learning (Talebian et al., 2014).

ICT tools enclose a diverse array of technological teaching resources such as “computers, electronic whiteboards, smartphones, and tablets,” which are referred to as recent digital technologies (Fauville et al. 2014, p. 251). Additionally, Samoylenko et al. (2022) have mentioned more examples of ICT tools specifically used for education such as “Captive, ESI, Cyber Listening Lab, Science News for Students, VoiceThread, Padlet,” among others (p. 57). Nevertheless, we will narrow our focus to software specifically designed for teaching pronunciation so that we can analyze the effectiveness of different software concerning suprasegmental features.

2.2 Literature Review

This literature review is intended to provide a brief overview of studies that have been conducted regarding visual, auditory, and ICT tools implemented in pronunciation teaching, especially for teaching suprasegmentals.

2.2.1 Audiovisual Aids for Improving Pronunciation

Since visual material usually comprises audio material as well, instead of exploring visual materials alone, audiovisual material will be analyzed. This type of material provides several benefits for students, such as the development of independent student learning, the increase of student proactivity, and an immersive environment in which the student encounters a context that is closer to the actual use of the language in practice (Kamelia, 2019).

The incorporation of audiovisual resources in the educational setting can facilitate the development and understanding of phonological and phonemic aspects of language, as well

as contribute to the oral proficiency of students (Handayani, 2017; Hismanoglu, 2012; Massi & Blázquez, 2012; Syafitri et al., 2018; Trota et al., 2022). For instance, Massi and Blázquez (2012) and Maharani (2017) have pointed out the acquisition of phonemic and phonological features respectively with the implementation of audiovisual aids. On the one hand, phonological and phonemic features can be picked through implicit imagery coupled with the descriptiveness of a text which allows the language to be better analyzed in a context that takes into account the intonation, stress, and rhythm of the language. On the other hand, the appearance of images without a text enables students to cultivate speaking roles and thus encourage speech and participation. Likewise, Hismanoglu (2012) pointed out that exposing students to internet-based video lessons resulted in a breakthrough in the acquisition of primary stress on compound adjectives, and verbs, and an improvement in stress recognition of the last, penultimate, and antepenultimate syllables of certain English words, which was a problem for the students.

In the same vein, Trota et al. (2022) analyzed the incorporation of cartoons in the acquisition of the British accent of preschoolers, aged 4-5 years. They were exposed to the British show entitled "Peppa Pig" which, due to the nature of the British accent, influenced their acquisition of the accent. However, the results cannot be generalized to other learner groups such as adolescents or adults.

Furthermore, Handayani (2017) pointed out that the use of films for teaching English pronunciation is slightly more beneficial than the use of traditional teaching methods. In this study, the researcher made use of the film "Avatar The Legend of Aang." Before watching the film, the students' pronunciation was tested on words from the film script, which in turn, the students were recorded and tested for intonation and stress. A post-test was then administered to note the influence of the film on the linguistic characteristics (intonation and stress) of the students. Although the results showed slight improvements in intonation and stress, they were not much greater than the improvements obtained using traditional methods. However, watching the film did indeed have an impact on the students' sense of involvement since they reported that they enjoyed being taught through a movie as it kept them engaged and encouraged them to replicate what they saw and listened to in the film. One drawback of this study might be the fact that the data was only gathered from one class. In addition, Wulandari et al. (2008) suggested that the usage of audiovisual materials can improve knowledge retention due to the presence of subtitles, characters' gestures, and voiceovers, which in turn aided in the learning of suprasegmental elements such as word stress.

However, Blonskytė (2014) noted that audiovisual aids can divert attention from linguistic learning when there are too many visual aids and not enough linguistic input, and since these

tools were so easily accessible, students could also feel overburdened when exposed to these types of materials for an extended period of time.

2.2.2 Auditory Aids for Improving Pronunciation

Some studies have found gains in suprasegmental learning when using auditory aids (Moradi & Shahrokhi, 2014; Radia & Yacine, 2021). Moradi and Shahrokhi (2014) reported the effects of using music in pronunciation teaching. The participants had to read song lyrics, listen to songs, repeat parts of songs in a fragmented manner, and memorize the songs with the only difference being that the control group read the lyrics without the rhythm of the music. The results showed that the experimental group made improvements in the acquisition of suprasegmental characteristics such as intonation and stress pattern recognition. Nonetheless, the study shows few limitations as it does not provide any evidence of the improvement of rhythm, accent, or tone. Moreover, because only female students participated in the experiment, the authors suggested including male students to see how music can improve male students' pronunciation skills.

Radia and Yacine (2021) conducted a study to learn English rhythm and stress through songs. The process of acquiring rhythm was based on listening to a portion of the song, dividing the portions of the song into metrical feet, and identifying the head of each foot. The findings indicate that students' acquisition of stress and rhythm improved. Although the study does demonstrate benefits for the development of rhythm and stress, it provides little support for the development of other aspects of language such as intonation and accent.

2.2.3 ICT Tools for Improving Pronunciation

ICT tools, such as the use of software and e-learning, have aided suprasegmental learning (Bozorgian & Shamsi, 2020; Gao & Hanna, 2016; Khoshshima et al., 2017; Nguyen & Takashi, 2022; Warisara, 2013). A study conducted by Bozorgian and Shamsi (2020) highlighted the advantages of MyET, which is the most well-known pronunciation software suitable for English learners of all ages in Iran. The software provides the correct pronunciation of drills or conversations, and the learners seek to replicate the correct pronunciation accurately since the main objective is to achieve successful imitation and produce desirable output. Through direct observation, reflective notes from researchers/teachers and learners, interviews, and the instant feedback and scores given to students by the software, the results revealed that the participants made a discernible degree of improvement in using suprasegmentals. For instance, some participants made evident progress in the use of stress and rising and

falling intonation, while other participants, in addition to increasing their suprasegmental skills, increased their self-awareness of the use of suprasegmental features, which led them to self-monitor and be self-conscious-of-their-pronunciation. The article emphasized that in comparison with segmental features, suprasegmentals have a more decisive influence on how listeners perceive the speech of non-native speakers. For instance, despite having subpar segmentation skills, one participant was more easily understood and made progress more quickly due to the proper use of prosody. Nonetheless, since the number of participants in this study was very small (5), the results cannot be generalized to different contexts. Additionally, Bozorgian and Shamsi (2020) recommended introducing this software to intermediate or advanced students and teaching them in a more comprehensive manner, which may involve more class time and sessions per week to obtain more insightful results.

Further studies, such as the one by Khoshima et al. (2017), have also provided evidence of the effectiveness of using ICT tools. The software used was Clear Pronunciation 2, and it covered five suprasegmental elements of pronunciation such as “word stress, consonant clusters, sentence stress, connected speech, and intonation” (p. 107). The software provided introductory videos for each unit, followed by exercises that provided immediate feedback on student performance. After 6 weeks, students improved specific pronunciation aspects such as consonant clusters, word stress, connected speech, sentence stress and intonation, and mainly, oral expression. This study also shows that teaching suprasegmental features can significantly affect how learners perceive and produce their speech as well as the speech of native English speakers. However, neither restrictions on using Clear Pronunciation 2 software nor its drawbacks were mentioned in the study.

Moreover, Nguyen and Takashi (2022) carried out a study on the effectiveness of integrating the software VoiceThread as an ICT tool to enhance non-native English learners' skills. According to the study, VoiceThread is an online multimedia tool that enables students to complete their assignments on time, better understand the material, and mainly increase their oral communication skills while feeling less stressed and anxious. VoiceThread allows learners to upload images, audio files, and videos; moreover, they can make comments using a variety of options, including microphone input, webcam recording, text input, phone recording, and audio file uploads. Data was collected through The Scale for Assessing Speaking Tasks, in which participants rated their speaking performance before and after the course. The Course Satisfaction Questionnaire (CSQ) was designed to collect data from the participants after the

course. Once the course was finished, the students showed improvement in all five areas of speaking competence (fluency, vocabulary, grammar, attitude, and comprehension). It is worth mentioning that 50% of the students demonstrated improved fluency, which is favorable because fluency is a domain in which suprasegmental features fall (Trofimovich & Baker, 2006). The study evidenced that using VoiceThread as a teaching tool can help students become more fluent in speaking English. However, a limitation of this study is the small size of participants. Therefore, larger sample sizes of participants in future research may elucidate more information about the influence of VoiceThread on teaching and learning language skills.

Gao and Hanna (2016) carried out a study in which they implemented one of the most well-known pronunciation software, New Oriental Pronunciation, to find out how the software can affect learners' attitudes toward pronunciation and their oral performances. The software provides clear key concepts and explains phonological terms about segmental and suprasegmental features. Therefore, the learners were able to work on segmental features, "listen to samples of vowels and consonants, learn methods of articulation, and practice sounds with exercises," and suprasegmental features, "record their productions or words, phrases, and sentences, practice words and phrases with exercises, practice sentence intonation, stress, and rhythm" (p. 207). Data collection was carried out through pre-tests and post-tests, pre-surveys and post-surveys, classroom observations, and a questionnaire about the software. The results indicate notable enhancements in both attitudes and performance. In fact, the two experimental groups and one control group showed improvements in suprasegmental features, even though the improvements in segmental features were even greater. The study also mentioned that teacher feedback is crucial for young learners with a low-intermediate level of proficiency and limited autonomous learning to enhance their pronunciation skills with the aid of the software. A limitation mentioned in this article is that the time on the tasks was controlled, which means that software-specific characteristics, individual pacing, and independent practice by learners in their own time were excluded from consideration. Another limitation was the small pronunciation improvement since each session lasted only 45 minutes per day and only lasted for two weeks.

Additionally, Warisara (2013) used an e-learning program in a study to dig into the enhancement of English stress and intonation pronunciation of students at Nakhon Ratchasima Rajabat University, Thailand. Since Thai students had issues with the

placement of stress in words and the correct intonation in phrases, an e-learning program was created to help students make their stress and intonation pronunciation better. A pronunciation test and a questionnaire to assess the students' attitudes toward the use of the e-learning program were used. All the participants took a pre-test to gauge their level of pronunciation, and a post-test to gauge their progress in pronouncing stress and intonation once they have learned and used the program's content. The results revealed that the participants improved their stress pronunciation as well as their intonation. Regarding the questionnaire, the majority of the participants believe that the e-learning program is good and can motivate them to significantly improve their stress and intonation pronunciation. Overall, the study demonstrated that the e-learning program can be a useful ICT tool to encourage learners to enhance their stress and intonation. The limitations that students had regarding stress and intonation were the pronunciation of words which consist of three syllables and phrases/sentences with rising intonation patterns. Limitations were also found in the e-learning program which according to the participants' questionnaire the content of the program should be more captivating, appealing, and pertinent to the objectives.

Chapter III: Methodology

A research synthesis, according to Cooper et al. (2019), is defined as the collection of characteristics observed in specific literature reviews. The current research synthesis intends to gather relevant data on the effects that audiovisual, auditory, and ICT tools exert on the development of English learners' suprasegmental features. In order to find suitable information, an in-depth research was conducted. Empirical studies were collected through relevant databases such as JSTOR, Taylor & Francis Online, ERIC, Research Gate, and Google Scholar. The following criteria were considered for selecting the sources. First, the articles had to be written in English and had to emphasize English suprasegmental aspects (rhythm, stress, pitch, intonation, and connected speech). Second, the studies had to be conducted in EFL or ESL contexts to have a broader range of information. Third, they had to be empirical since the data collected in these types of studies can serve to study the effectiveness of a solution using a qualitative, quantitative, or mixed methodology (Gamper, 2017). Fourth, in order to gather updated information, the studies had to be published no earlier than 2009. The following keywords were used for finding the articles: (a) auditory aids, (b) visual aids, (c) ICT Tools, (d) podcasts, (e) movies, (f) software, (g) music, (h) programs, (i) and pronunciation teaching. No limitations were placed on the type of research design; in other words, the studies could follow a qualitative, quantitative, or mixed approach. The studies were compiled and researched digitally due to the complexity of obtaining them physically. Finally, the data collected from the empirical studies was categorized and analyzed according to the following criteria: pronunciation teaching, focus, context, research design, and advantages and disadvantages of the pronunciation teaching materials.

The following journals were examined to determine which studies to analyze: International Journal of Humanities and Social Sciences; Arab World English Journal; Veda's Journal of English Language and Literature-JOELL; Transformative Dialogues: Teaching and Learning Journal; TESL Canada Journal; Computer-Assisted Language Learning Electronic Journal; The CATESOL Journal; TEFLIN Journal - a Publication on the Teaching and Learning of English; CALICO Journal; Journal of English and Education; Iranian Journal of Applied Language Studies; Language Learning Journal; Journal of Foreign Language Teaching and Learning; Journal of Studies in Learning and Teaching English; International Journal of Engineering Pedagogy; International Journal of English Linguistics; Journal of the College of Basic Education; Athens

Journal of Education; International Journal of Current Engineering and Scientific Research; Journal of Education and Practice; Indonesian Journal of Applied Linguistics; DOAJ: Directory of Open Access Journals - DOAJ; Journal of Education, Language Innovation, and Applied Linguistics; RELC Journal; The Language Learning Journal.

Chapter IV: Data Analysis

4. Data Analysis

In this chapter, 20 studies are analyzed according to the following categories: pronunciation teaching materials, focus, context, and research design, and advantages and disadvantages of the pronunciation teaching materials.

4.1 Pronunciation Teaching Materials

Table 1

Pronunciation Teaching Materials

Author/Year	Material	N
Alghonaim (2020); Alkadi and Nageeb Al Maktary (2022); Bataineh and Al-Qadi (2014); Damar (2014); Handayani (2017); Hismanoglu (2012); Namaziandost et al. (2018); Sinyashina and Balteiro (2023); Suwartono (2013); Trota et al. (2022).	Audiovisual Material	10
Fischler (2009); Herlina (2012); Moradi and Shahrokhi (2014); Radia and Yacine (2021)	Auditory Material	4
Bozorgian and Shamsi (2020); Gao and Hanna (2016); Khoshshima et al. (2017); Liu et al. (2018); Nguyen and Takashi (2022); Warisara (2013).	ICT Tools	6
Total		20

Table 1 shows the three teaching aids for English pronunciation that this research synthesis focuses on. As can be seen, the most notable characteristic is that auditory materials are used in four articles and ICT tools in six articles, whereas audiovisual materials (10 articles) represent the majority of the articles researched. A reason why audiovisual materials outnumber auditory materials and ICT tools could be the preference for using videos that show authentic material (in other words, material that is not designed for teaching pronunciation) since they are great tools for teaching and improving learners' pronunciation skills, specifically suprasegmental features (Alghonaim, 2020; Bataineh & Al-Qadi, 2014; Damar, 2014; Hismanoglu, 2012; Namaziandost et al., 2018; Sinyashina & Balteiro, 2023; Suwartono, 2013; Trota et al. 2022).

Table 1 also reveals that auditory materials alone constitute the least used aids to boost the acquisition of suprasegmental features of the English language; therefore, little information regarding the effects of auditory materials alone has been gathered, and it was a challenge to find articles that include these materials. From all the four studies that used auditory materials, Fischler (2009), Moradi and Shahrokhi (2014), and Radia and Yacine (2021) made use of songs (rap and English songs) as auditory materials whereas Herlina (2012) used English words presented to the participants in audio-form as auditory material, then the participants had to repeat them as accurately as possible after they listened to them. As can be seen, most of the studies used songs as the primary auditory material for targeting and improving suprasegmental features, which indicates that English songs seem to help EFL learners use suprasegmentals more effectively (Radia & Yacine, 2021); moreover, songs did not only improve learners' suprasegmental features but also helped the participants to recognize stressed syllables and their sense of autonomy was enhanced by their acquisition of metacognitive skills (Fischler, 2009).

4.2 Focus, Context, and Research Design

Table 2

Focus, Context, and Research Design

Country	Author and Date	Focus	Context	Research Methods
Algeria	Radia and Yacine (2021)	Sentence Stress, and Rhythm Acquisition	30 Second Year Bachelor's Degree Students	Quantitative Method
China	Gao and Hanna (2016)	Sentence Intonation, Pitch, Stress, and Rhythm Acquisition	60 participants (34 females and 26 males)	Mixed Method
China	Liu et al. (2018)	Pronunciation and Intonation Acquisition	32 participants	Mixed Method

Indonesia	Handayani (2017)	Pronunciation, Intonation, and Stress Acquisition	2 Classrooms (60 students)	Mixed Method
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Indonesia	Herlina (2012)	Word Stress Acquisition	30 participants (22 females and 8 males)	Quantitative Method
Indonesia	Suwartono (2013)	Stress and Intonation Acquisition	24 participants	Mixed Method
Iran	Bozorgian and Shamsi (2020)	Stress, Rhythm/Timing, and Intonation Acquisition	5 participants (3 females and 2 males)	Mixed Method
Iran	Khoshshima et al. (2017)	Sentence and Word Stress, Consonant Clusters, Connected Speech, and Intonation Acquisition	7 participants	Quantitative Method
Iran	Moradi and Shahrokhi (2014)	Stress and Intonation Acquisition	30 participants (all females)	Quantitative Method
Iran	Namaziandost et al. (2018)	Stress, Intonation, and Rhythm Acquisition	38 participants (all males)	Quantitative Method
Japan	Nguyen and Takashi (2022)	Word Stress, Rhythm, and Intonation Acquisition	12 participants	Mixed Method
Philippines	Trota et al. (2022)	Accent Acquisition	2 Preschoolers (females of 4-5 years old)	Qualitative Method

Saudi Arabia	Alghonaim (2020)	Accent and Intonation	1 child-participant (2 years)	Mixed Method
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		Acquisition		
Saudi Arabia	Alkadi and Nageeb Al Maktary (2022)	Stress Acquisition	2 participants	Quantitative Method
Saudi Arabia	Bataineh and Al-Qadi (2014)	Intonation and Stress Acquisition	32 participants	Quantitative Method
Spain	Sinyashina and Balteiro (2023)	Word Stress Acquisition	40 participants (13 females and 9 males)	Mixed Method
Thailand	Warisara (2013)	Word Stress and Sentence Intonation Acquisition	40 participants	Mixed Method
Turkey	Damar (2014)	Stress and Intonation Acquisition	44 participants (32 females and 12 males)	Mixed Method
Turkey	Hismanoglu (2012)	Word Stress Acquisition	30 Turkish EFL learners (25 females and 5 males)	Qualitative Method
United States	Fischler (2009)	Word and Sentence Stress Acquisition	Six participants (different backgrounds)	Mixed Method

Table 2 details information concerning the location, focus, context, and research design of the analyzed articles. From all the 20 studies analyzed, most of the studies were conducted in Iran (4), followed by Indonesia (3), Saudi Arabia (3), China (2), Turkey (2), Algeria (1), Japan (1), Philippines (1), Spain (1), Thailand (1), and the United States (1). Hence, in Asia, there could be more possibilities to find studies focused on pronunciation compared to the other continents. In contrast, only one study was found on the American continent, which might suggest a potential need for increased research in suprasegmental learning in America.

Besides, only one study was carried out in a Spanish-speaking country (Sinyashina & Balteiro, 2023), which also suggests that more research is needed in this context.

Second, as can be shown in Table 2, of all the suprasegmental features, word and/or sentence stress and intonation are the most analyzed since these features are found and studied in almost all the studies. This might indicate that stress and intonation are crucial suprasegmental features to develop. Word and/or sentence stress and intonation have been studied using audiovisual, auditory, and ICT tools to determine the impact of those materials in developing learners' suprasegmental acquisition. For instance, Damar (2014) made use of videos to inquire about the development of learners' stress and intonation. In contrast, Moradi and Shahrokhi (2014) used music as the main material to improve stress patterns and intonation. Bozorgian and Shamsi (2020) made use of *My English Tutor* (MyET) application to explore the enhancement of suprasegmental features, especially on stress and rising and falling intonation.

Third, Table 2 reveals that a significant proportion of participants were females rather than males. As can be seen, each of the studies analyzed shows that the percentage of female participants was constantly higher in comparison to the percentage of males.

Finally, concerning the research method used, Table 2 shows that half of the studies used a quantitative methodology, the other half, a mixed methodology, and only two of them, a qualitative methodology. This indicates that to examine the improvement of suprasegmental features most of the studies used a Quantitative Method which provides empirical evidence of the effects of the materials used in the study. In addition to the quantitative method, half of the studies employed a qualitative method, and interviews were conducted in order to gather data concerning participants' opinions, feelings, and experiences (Bozorgian & Shamsi, 2020).

4.3 Advantages of the Pronunciation Teaching Materials

Table 3

Advantages of the Pronunciation Teaching Materials

Author/Year	Material	Advantages	N
Alghonaim (2020); Bataineh and Al-Qadi (2014); Damar (2014); Hismanoglu (2012); Namaziandost et al. (2018); Sinyashina and Balteiro (2023); Suwartono (2013); Trota et al. (2022)	Audiovisual	<ul style="list-style-type: none"> • Early exposure to the target language leads to the development of proper pronunciation skills (accent and intonation) at a faster pace. As well as authentic videos (cartoons, films, everyday English videos, captioned videos, etc.) have 	8

		a positive effect on the	
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		improvement of participants' suprasegmental skills such as intonation and word stress patterns.	
Fischler (2009); Moradi and Shahrokhi (2014); Radia and Yacine (2021).	Auditory	<ul style="list-style-type: none"> Use of music (rap and English songs) improves participants' suprasegmental features, especially word and sentence stress patterns and intonation. The use of English audio tracks has also enhanced suprasegmental features such as word stress, rhythm, and intonation. Songs also improved participants' autonomy and helped to identify stressed syllables. 	3
Bozorgian and Shamsi (2020); Gao and Hanna (2016); Khoshsiman et al. (2017); Liu et al. (2018); Nguyen and Takashi (2022); Warisara (2013)	ICT Tools	<ul style="list-style-type: none"> Improvement in suprasegmental features such as stress, intonation, and rhythm is accomplished through the use of software designed for learning pronunciation. It is also evidenced that the best way in which improvements were made was when it was a combined instruction (human-aided and software-aided instruction). 	6
Total			17

Table 3 shows the classification of the studies based on the advantages of each type of material. In this section, 17 of the 20 studies were analyzed as they provided detailed information on the advantages of using audiovisual, auditory, and ICT materials on suprasegmental features.

In Table 3, it is noticeable that most studies reported advantages, which are mostly based on the improvement of stress and intonation features through audiovisual materials. To exemplify this, studies conducted by Alghonaim (2020), Hismanoglu (2012), Namaziandost et al. (2018),

Sinyashina and Balteiro (2023), and Trota et al. (2022) concluded that the use of authentic

audiovisual materials (i.e., videos series or movies and/or cartoons), promoted the learning of suprasegmental characteristics such as stress, intonation, and rhythm, which may constitute a difficulty for Asian learners. Nevertheless, the effectiveness was observed as long as the materials were genuine and were appropriately exposed to learners.

In addition, the studies conducted by Damar (2014), Handayani (2017), and Suwartono (2013) determined that the incorporation of films in language education appears to be particularly effective in enhancing motivation, enthusiasm, and overall participation in the language learning process; plus, demonstrating efficacy across adult and teens. Moreover, Trota et al. (2022) highlighted the importance of positive reinforcement through little rewards since it plays a part in increasing motivation, which is a key factor in the participants' language acquisition. Regarding the advantages of using auditory materials in the studies analyzed, Table 3 shows that most of the studies that made use of auditory materials had advantages in improving learners' suprasegmental features. For instance, Fischler (2009), Moradi and Shahrokhi (2014), and Radia and Yacine (2021) concluded that the use of songs (rap and English songs) had a positive effect in enhancing participants' intonation and stress patterns. Moradi and Shahrokhi (2014) evidenced that the experimental group outperformed the control group regarding suprasegmental articulation, including intonation and stress pattern. Fischler (2009) noted that the use of songs yields positive effects on enhancing participants' sense of autonomy through the development of metacognitive skills due to the use of songs meanwhile Radia and Yacine (2021) stated that songs help learners to recognize stressed syllables since they highlight English stress patterns.

Finally, Table 3 also shows the advantages of using ICT tools to improve learners' suprasegmental features. All of the six articles that made use of ICT tools in their studies reported advantages in enhancing suprasegmental features, which indicates that ICT software and programs are very practical tools for teaching pronunciation (Bozorgian & Shamsi, 2020). To illustrate this, the results of Khoshsima's et al. (2017) study demonstrated that using *Clear Pronunciation 2* software improved learners' suprasegmental features such as word and sentence stress, connected speech, and intonation. These results were due to the application of a mixed methodology in which both the teacher and the software were involved in teaching pronunciation. In the same vein, the evidence gathered from Gao and Hanna's (2016) study showed that the combination of human-aided instruction and computer-aided instruction was the most effective way to teach pronunciation since the results of the post-tests were higher than the other groups.

4.4 Disadvantages of the Pronunciation Teaching Materials

Table 4

Disadvantages of the Pronunciation Teaching Materials

Author/Year	Material	Disadvantages	N
Alkadi and Nageeb Al Maktary (2022); Handayani (2017).	Audiovisual	<ul style="list-style-type: none"> Using audio scripts and handouts required longer periods to master stress patterns Films did not make a significant difference when improving suprasegmental features. 	2
Herlina (2012)	Auditory	<ul style="list-style-type: none"> English words presented to the participants in audio form did not enhance learners' ability to produce English word stress correctly. 	1
Gao and Hanna (2016)	ICT Tools	<ul style="list-style-type: none"> Only software-aided instruction did not have a positive effect on improving learners' sentence intonation, pitch, stress, and rhythm as compared to human-aided instruction and combined instruction. 	1
Total			4

However, as illustrated in Table 4 only four studies presented clear evidence of the disadvantages of using audiovisual, auditory, or ICT material for teaching pronunciation.

First, regarding the audiovisual material, two studies highlight drawbacks associated with the use of this type of material: for instance, Alkadi and Nageeb Al Maktary (2022) observed that when instructing sentence stress through shadowing, students did not fully master it since they required a more prolonged exposure to the technique. Furthermore, the authors highlighted that learning through this imitative technique is an extensive and non-linear process influenced by students' level of interest. In the same vein, Handayani's (2017) results showed that focusing on pronunciation, intonation, and stress through movies does not significantly yield positive effects on improving suprasegmental features.

In the same vein, Herlina (2012) stated that the use of English words presented in audio form as auditory material (using the auditory priming method) did not achieve the desired level of improvement since it was almost the same as in the control group. Herlina (2012) claimed that the poor level of improvement was due to some factors such as the small sample of participants followed by some methodological problems such as the lack of a pre-test, which could have yielded a different outcome.

Lastly, Gao and Hanna's (2016) study showed a disadvantage at the moment of using the *New Oriental Pronunciation* software. The participants were enrolled in three different groups: a control group (human-aided instruction), a first experimental group (computer-aided instruction), and a second experimental group (combined instruction). At the end of the study, the results demonstrated that computer-aided instruction alone was less effective than human-aided instruction. The participants acknowledged, in their survey responses and classroom behavior, the limitations of both computer-aided instruction and human-aided instruction alone; therefore, the combined instruction was the best alternative to achieve greater improvement in participants' suprasegmental features.

Chapter V: Conclusions and Recommendations

5.1 Conclusions

This research study aimed to explore how audiovisual, auditory, and ICT tools impact the acquisition of suprasegmental features. This goal was accomplished through a thorough analysis of 20 studies which provided insights into the advantages, disadvantages, methodologies, and overall effectiveness of these tools in the acquisition of the aforementioned features. After conducting the analysis, the subsequent conclusions were derived.

Concerning the research question, "*What are the effects of using visual, auditory, and ICT tools on the suprasegmental features of EFL/ESL learners' pronunciation?*," the 20 studies indicate the effectiveness of visual, auditory, and technology-based materials in promoting suprasegmental learning such as accent and stress in the case of audiovisual materials, rhythm and intonation in the case of auditory ones, and word stress, sentence stress, and intonation regarding the use of ICT materials. The acquisition of these features involves engaging in activities that encompass imitation Alghonaim (2020), repetition Radia and Yacine (2021), and exposure to authentic resources that make use of language in its most natural form (Trota et al., 2022). Indeed, the incorporation of audiovisual and auditory materials has enabled students to acquire the accent and stress of the English language effortlessly without the need for explicit instruction. Meanwhile, the utilization of ICT tools implies their suitability in a supplementary role, given that technology itself cannot fully replace human instruction. For instance, as was seen in the study of Gao and Hanna (2016), only using the pronunciation software did not yield positive results, but it was the combination of teacher instruction and software instruction that yielded the best results for improving suprasegmental features. Therefore, the most impactful and well-supported resources that generated the best results in terms of enhancing participants' suprasegmental features are audiovisuals and ICT materials. Audiovisual materials were the ones that were found in most of the studies (with 10 studies). Regarding the first specific objective that deals with the benefits of audiovisual, auditory, and ICT materials on suprasegmental aspects of pronunciation, the studies analyzed reported advantages when using different types of materials (audiovisual, auditory, and ICT materials): improvement in suprasegmental features such as word and sentence stress, intonation, rhythm, accent, pitch, and connected speech. For instance, from the studies that made use of audiovisual materials, the results showed that using authentic materials such as cartoons and Internet-based video lessons with young learners do promote the learning of word stress, intonation, pause and juncture, and English accent acquisition (Alghonaim, 2020; Hismanoglu, 2012; Namaziandost et al., 2018; Sinyashina & Balteiro, 2023; Trota et al., 2022).

In fact, Trota et al. (2022) concluded that early exposure to cartoons along with positive reinforcement to participants improves their acquisition of the English accent. Moreover, some studies also evidenced improvements in learners' involvement in the teaching process as well as increases in their motivation (Damar, 2014; Handayani, 2017; Suwartono, 2013). Likewise, concerning auditory materials, most of the studies concurred with the fact that the use of songs is beneficial for teaching pronunciation since suprasegmental improvements, especially in stress patterns and intonation features, were determined (Fischler, 2009; Moradi & Shahrokhi, 2014; Radia & Yacine, 2021). Finally, regarding the advantages of using ICT materials, one study indicated that participants "had improvement in connected speech, sentence stress, word stress, and intonation" after using the pronunciation software (Khoshshima et al., 2017, p. 118). The rest of the studies also highlighted the advantages of using ICT materials which stated that ICTs are powerful and efficient tools for teaching and improving suprasegmental features (Bozorgian & Shamsi, 2020; Liu et al., 2018; Nguyen & Takashi, 2022; Warisara, 2013); however, Gao and Hanna (2016) pointed out the need to combine human-aided instruction with computer-aided instruction.

Regarding the second specific objective that deals with the drawbacks of the use of audiovisual, auditory, and ICT tools for teaching suprasegmentals, some disadvantages were pinpointed. As reported by Alkadi and Nageeb Al Maktary's (2022) study, shadowing English words by using audio and continuous repetition entailed learning concentration issues. In the same vein, Handayani (2017) and Herlina (2012) indicated that the expected results of using audiovisual and auditory materials respectively were not achieved and the participants' suprasegmental features such as intonation and word stress did not improve. Additionally, Gao and Hanna (2016) highlighted that no improvements were found when using only computer-aided instruction for teaching word stress, sentence stress, rhythm, intonation, and pitch.

Some implications for the teaching field can be drawn. Teachers should be concerned about the teaching of suprasegmental features since they are crucial for the development of proficiency in communication (Bataineh & Al-Qadi, 2014; Suwartono, 2013); therefore, the curriculum for teaching EFL/ESL should prioritize teaching suprasegmental features (Damar, 2014) which can be done by using different materials such as English TV programs, which can increase student motivation and improve oral communication (Namaziandost et al., 2018). Furthermore, due to the effectiveness of using music for improving stress and intonation patterns, EFL teachers should employ music to help learners improve pronunciation, stress, and intonation patterns (Moradi & Shahrokhi, 2014). Additionally, regarding the use of ICT materials, English teachers must receive sufficient and effective training before integrating

technology (pronunciation software) into the class as well as sufficient preparation for teaching pronunciation and improving their pronunciation (Gao & Hanna, 2016; Nguyen & Takashi, 2022). ICT materials should be integrated into English classrooms since they can aid both teachers and students in teaching and learning suprasegmental features at all proficiency levels with the help of instant feedback; in fact, ICT materials help students lower their anxiety, boost their confidence, and save time and money (Bozorgian & Shamsi, 2020; Khoshshima et al., 2017; Liu et al., 2018).

5.2 Recommendations

Based on the insights synthesized in this research, the following recommendations can be considered. First and foremost, since it is evident that there is an emphasis on the benefits of the use of audiovisual and ICT materials for teaching children, pre-teens, teens, and adults, teachers should utilize these materials when teaching suprasegmentals to learners of all ages. Nevertheless, incorporating these materials along with explicit instruction is advisable for both young and adult learners, given that this combination might provide greater benefits (Khoshshima et al., 2017; Hismanoglu, 2012; Bozorgian & Shamsi, 2020).

Secondly, there is a need for research focused on the application of these materials within Latin American contexts to assess their effectiveness of teaching suprasegmental features since gathering empirical information from these contexts will provide a greater understanding of the significance of suprasegmentals for English language learning, which can contribute to the development of more effective instructional practices. Even though audiovisual studies showed efficacy with children, pre-teens, teens, and adults, it is important to highlight that the number of children participants was limited (Trota et al., 2022; Alghonaim, 2020; Alkadi & Nageeb Al Maktary, 2022). This suggests a need for further research specifically concentrating on the utilization of these materials with children to determine the influence of such materials on their learning process. Finally, since not enough studies that use auditory tools alone were found, more research is needed to determine their effects on fostering the development of suprasegmental features.

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