

The Role of Teaching Software on Listening and Speaking Skills from the Perspective of English Public Speaking Training

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Abstract. Listening and speaking skills constitute pivotal components of English public speaking. Given the growing emphasis on English public speaking in the recent years within the English educational system, it is imperative to underscore the significance of these skills. While there has been a wealth of research concerning listening and speaking skills in English teaching for an extended period, studies with a specific focus on these skills within the context of English public speaking remain relatively scarce. These research endeavors primarily concentrate on students' capacity to develop listening and speaking skills and the pedagogical strategies adopted by teachers to facilitate such development. With the rapid advancement of computer technology, educational software has gained increased popularity in recent years, although the body of research in this area remains limited. Building upon the findings of previous research, this study investigates the realm of English public speaking training and aims to unveil the positive impacts associated with the utilization of teaching software on the enhancement of students' listening and speaking skills.

Keywords: English public speaking, application of teaching software, listening and speaking skills

1 Introduction

1.1 English public speaking

The significance of English public speaking has seen a substantial surge in relevance in the context of China's ongoing engagement with the global community. Proficiency in English public speaking equips individuals with the capacity to amplify China's voice and convey its stories, both domestically and on the international stage [4]. Therefore, as Lucas [14] noted, the prevalence of English public speaking activities has experienced a noticeable uptick within the Chinese English educational system. This expansion is evident not only within the curriculum but also in various competitions. Moreover, an increasing number of students of diverse age groups are actively engaging in the learning and practical application of English public speaking, paralleled by a commensurate growth in the volume of relevant research.

Through comprehensive class-teaching investigations, as observed by Nash [16] and Zhang [23], it has become apparent that despite the considerable enhancement of students' English public

speaking skills due to the proliferation of English public speaking training classes, a number of issues persist. Foremost among these issues is the prevalent anxiety experienced by students in relation to English public speaking. Even though these students recognize the contemporary importance of English public speaking, many remain hesitant to engage in practice, often as a result of personal aptitude or psychological factors, leading to slower progress in their learning journeys. Furthermore, Jennings [8] have advanced the argument that teachers themselves bear some responsibility for the sluggish advancement in students' English public speaking skills. They contend that certain teachers adopt overly traditional pedagogical approaches, merely adhering to textbooks and failing to establish basic communication with their students. As a result, trainees struggle to develop an enduring interest in English public speaking instruction. Notably, Tuspekova [21] have also illuminated how the excessively demanding expectations set by teachers can impede students' intrinsic motivation for learning. As these expectations often surpass students' actual capabilities, they end up fostering heightened anxiety towards learning. The research mentioned above has effectively identified some persistent challenges in English public speaking training, thereby underscoring the importance of educators' attentiveness to these issues and the development of tailored solutions.

1.2 Listening and speaking in English teaching

Listening and speaking skills play a pivotal role in the broader context of English language acquisition. As outlined by Pan and Zhang [17], listening ability represents a fundamental input mechanism in everyday communication, while speaking ability serves as an essential output behavior. Collectively, these two facets form integral components of effective communication. However, as revealed by Hwang [7], traditional English teaching methodologies have tended to disproportionately emphasize the development of reading skills, followed by writing and listening, with speaking often receiving the least attention. Consequently, students frequently exhibit inadequacies in these skills, notably in the domain of speaking, which at the same time lead to a mounting pedagogical challenge in these areas.

In pursuit of enhancing English listening and speaking competencies, a series of research endeavors have undertaken extensive investigations and have derived valuable recommendations. For instance, Salam [19] advocated for a pedagogical approach that aligns with the principle of progressing from easy to challenging content in listening ability instruction. They argue that educators should refrain from rigidly adhering to textbook patterns and, instead, adapt their teaching methods to align with students' unique learning contexts. Furthermore, Pan and Zhang [2020] underscored the significance of infusing listening training with real-life relevance. Their research indicates that some teaching materials and exercises tend to prioritize exam-oriented content at the expense of authentic daily life connections, a practice that may inadvertently diminish students' intrinsic motivation for learning.

In the realm of speaking ability training, Hwang [2008] emphasized the pivotal role of imitation. Based on their findings, students are encouraged to not only engage in repeated readings but also to mimic the pronunciation and intonation of English native speakers, a strategy conducive to heightened proficiency in everyday communication. Conversely, Al Murshadi [1] endorsed a holistic approach that intertwines listening and speaking training. His research posits that very few real-life communication scenarios revolve solely around speaking, as listening remains an integral component of effective dialogue. Therefore, teachers are encouraged not to separate listening and speaking in their pedagogical practices but to integrate communicative

methodologies for comprehensive enhancement of students' listening and speaking skills.

The proficiencies in listening and speaking assume a pivotal role in the context of English public speaking training. While some individuals may contend that public speaking primarily involves 'speaking' without 'listening,' Lucas [13] conducted a longitudinal study, revealing that speakers in public speaking must also cater to the needs of their audiences, as both parties engage in a communicative exchange during public speaking. Employing a communication model, Lei [10] further elucidated that words and phrases' selection, speech themes, and body language are all influenced by the audience's reception. Speakers, in turn, should adequately adapt themselves when delivering a speech, taking into account the audience's dynamic responses. Therefore, as argued by Mulyadi et al. [15], the training for English public speaking should not segregate the practice of speaking and listening skills.

Building upon this premise, a number of research have underscored the importance of integrating listening and speaking training within the framework of English public speaking classes. For instance, Farid [5] employed the use of videos in his English public speaking instruction, thereby creating a dynamic and immersive communicative environment. This approach not only served to enhance students' enthusiasm for practicing public speaking skills in their preferred topics but also helped mitigate their anxiety surrounding speech delivery. Wang et al. [22] placed a strong emphasis on the utilization of classical public speaking performances featured in videos throughout their teaching methodology. In numerous lessons, the educators in this study incorporated a multitude of exemplary public speaking instances from TED Talks, affording students the opportunity to mimic and refine their public speaking skills. This strategy facilitated the expeditious advancement of their English public speaking abilities.

1.3 Teaching software in English classes

Many instructional illustrations cited in the aforementioned studies incorporated multimedia elements, signaling the burgeoning prevalence of multimodal tools within the domain of English teaching. In fact, the progression of computer technology has witnessed the widespread adoption of educational software within conventional English classes. Numerous studies have ventured into this sphere. For instance, Jie and Sunze [9], in the course of their class observations, revealed the effective utilization of teaching software by an English teacher to augment her students' vocabulary retention skills. Their observations attested that previously mundane words and phrases took on a newfound intrigue and relevance in students' lives, courtesy of the assistance provided by the teaching software. This transformation kindled the students' enthusiasm for learning. Dong [2], conversely, illustrated another compelling instance of teaching software application within English lessons. Harnessing the capabilities of cloud computing, the software proficiently collated common writing errors and offered guidance on the appropriate use of words and grammar during students' writing exercises. By presenting these outcomes, students were better equipped to rectify their mistakes and cultivate new writing proficiencies.

The studies mentioned previously highlight the affirmative impact of integrating teaching software into English education. Nonetheless, it is worth noting that the majority of these software applications are primarily designed to target vocabulary acquisition, reading, and writing skills. This pattern can be elucidated, as articulated by Liang [12], by the recognition that the cultivation of listening and speaking competencies demands a more advanced level of

artificial intelligence (AI) embedded within teaching software and necessitates a heightened level of pedagogical expertise from educators. As a result, the implementation of such teaching software for listening and speaking instruction appears to be a more complex endeavor. Nevertheless, in tandem with the evolution of AI and computer technology, there has emerged a multitude of teaching software specifically tailored to English listening and speaking instruction [2].

2 Research Context and Methodologies

This study focuses on two English classes under the instruction of the same teacher. These classes consist of freshman students at the university, totaling 82 individuals, comprising 49 female and 33 male students. The English proficiency of these students is at a fundamental level, as they were unable to qualify for advanced English classes following their initial placement test upon entering the university. Notably, these students lack any prior experience in English public speaking training. The teacher possesses extensive experience in English public speaking instruction, spanning multiple years, and has been incorporating teaching software as an instructional aid for over a year. It is worth highlighting that, in the current semester, the teacher has introduced a novel teaching software, referred to as 'CX-Teaching,' into her curriculum for the first time. The software's primary objective is to facilitate the development of her students' English public speaking proficiency.

This study entailed continuous observation of these two classes throughout a single semester. The teacher structured the entire semester into four units, during which the researcher acquired students' performance statistics recorded by the CX-Teaching software at the end of each unit. Simultaneously, questionnaires were distributed to elicit students' feedback on their learning experiences. This study adopts a mixed-methods approach, combining both quantitative and qualitative research methodologies. Regarding the data derived from students' statistics through the teaching software for the four units, the research entailed data organization and computation [18]. For the questionnaires distributed across the four units, the researcher collected and subsequently extracted keywords from students' responses to open-ended questions [3]. By analyzing these research statistics, this study has generated a series of conclusions, as delineated below.

3 Data analysis

CX-Teaching is an English listening and speaking training assistant system that harnesses the power of AI and cloud-computing technology. For enhancing listening skills, it offers a diverse range of exercises spanning various difficulty levels, encompassing multiple-choice questions, cloze exercises, short-answer questions, and more. Given that the observed students are all freshmen, the teacher opted for College English Test-4 and 6 listening exercises to suit their proficiency level. In the realm of speaking skills, the software provides two distinct practice modes: listening-speaking exercises and speaking-only exercises. These modes incorporate a wide array of question types, including picture description, question answering, mock conversations, and more. To cater to the specific needs of the English public speaking course, the teacher selected the listening-speaking mode to sharpen students' listening and speaking

proficiencies. In this mode, students engage in active listening to content pertinent to the theme of their public speaking and subsequently deliver their speeches. The teaching software employs cloud-computing technology to promptly calculate the time students spend contemplating before commencing their speeches. Simultaneously, it analyzes the content incorporated into students' speeches.

Upon registration, students gain access to a comprehensive library of public speaking videos. Moreover, their viewing history is meticulously recorded by the system. Following the completion of their speeches, the system automatically tallies the instances where students have incorporated quotations or imitations of words or other information from the videos they've previously viewed. All the statistics provided by the teaching software mentioned above play a pivotal role in supporting the analysis of students' listening and speaking abilities within the context of English public speaking training.

3.1 The significant improvement of English listening ability

Based on the statistics collected over four units of the current semester, as depicted in Figure 1, it is evident that students' listening ability has exhibited improvement through the utilization of the CX-Teaching software. In the initial stages, although the accuracy in answering questions was relatively low, this figure witnessed a consistent rise from Unit 2 onwards, accompanied by a decrease in the number of students who achieved lower scores. Remarkably, by Unit 3, the number of students with accuracy levels below 50% reached zero, while those scoring within the 70-95% accuracy range exhibited steady growth. These statistics align harmoniously with students' responses to questionnaires, as detailed in Table 1, where keywords underscore students' perceptible cognitive shifts in response to completing listening tasks.

While it is true that the number of students achieving 95% accuracy or higher experienced a relatively slower increase, this is attributed to the intrinsic challenges posed by the listening task and the students' foundational English proficiency, given their status as freshmen. Nonetheless, it remains unequivocal that the application of the teaching software has contributed significantly to the enhancement of students' listening abilities.

Table 1. Key words of students response to the questionnaire concerning listening ability

Unit 1	difficult	exhausted	give up
Unit 2	difficult	hope	tired
Unit 3	better	hope	improvement
Unit 4	improvement	easier	better

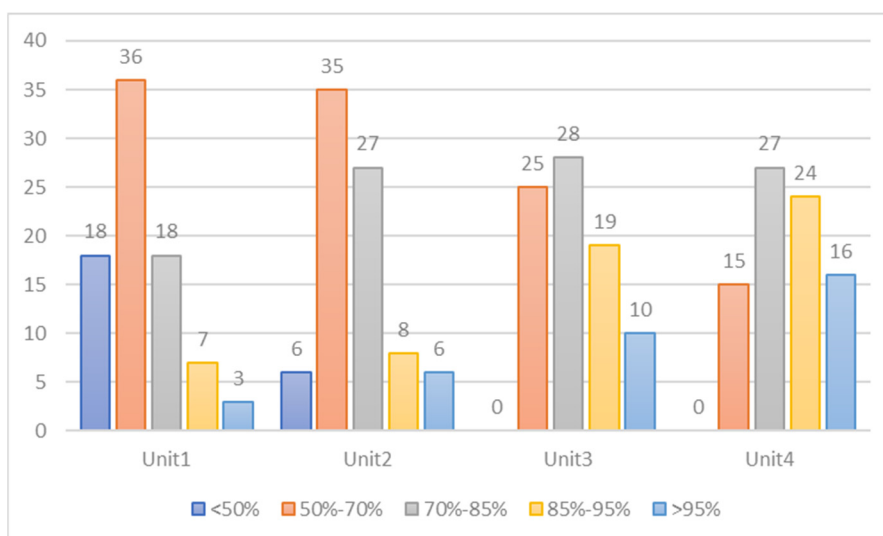


Fig. 1. Accuracy in doing listening exercise

3.2 The significant improvement of English speaking ability

This study employs the students' response rate as the evaluative criterion for their speaking ability. This choice aligns with Lucas' perspective [13], which asserts that speakers in public speaking engagements need to actively interact with their audiences and provide timely responses. Hence, the increment in the response rate of students may be seen as indicative of a reduction in their anxiety concerning oral English delivery and an increase in their self-assurance in the realm of public speaking [10].

As illustrated in Figure 2, during Unit 1, the initial application phase of the teaching software, it becomes apparent that the response rate for most students was relatively slow. More than 50% of them had pondering times exceeding 5 seconds, a duration typically deemed less acceptable in everyday communication. However, a discernible trend of reduction in response time is observed from Unit 2 through to Unit 4. This transformation in the students' approach to pondering questions and formulating responses is further corroborated by the findings from the questionnaires, depicted in Table 2. Notably, by the time Unit 4 is reached, nearly half of the students have successfully regulated their response rates to within 2 seconds, a duration considered suitable for everyday communication. Although some students still exhibited response rates exceeding 4 seconds, implying a necessity for further practice, it is noteworthy that the number of students whose response rates exceeded 8 seconds experienced a significant decline, diminishing from over 41 students to none. Taking into consideration the foundational English proficiency of the students and the fact that continued practice is needed for some, it is unequivocal that the application of the teaching software has been instrumental in enhancing the students' speaking ability.

Table 2. Key words of students response to the questionnaire concerning speaking ability

Unit 1	hard	long	fear
Unit 2	anxious	hard	plan
Unit 3	anxious	attempt	faster
Unit 4	plan	faster	better

3.3 The significant improvement of English public speaking's proficiency

This study employs the conceptual framework of English public speaking proficiency as proposed by Lei [10]. They contended that a public speaker's proficiency should encompass not only their professional public speaking skills but also their ability to imitate or incorporate skills derived from exceptional public speeches. This perspective has garnered support from other researchers, including Leopold [11] and Farid [5]. Given that the CX-Teaching software can automatically quantify the frequency with which students integrate or mimic elements from previous exceptional public speeches, including words and phrases that convey the speech's theme, those that facilitate logical transitions within the speech, and those that denote emotional shifts in the speaker, this study adopts these metrics as the evaluative criteria for gauging students' English public speaking proficiency following their practice with the teaching software.

Figure 3 illustrates a substantial increase in the frequency with which students have adopted or imitated key words and phrases from previous exceptional public speeches following three units of practice. Notably, the number of students who adopted such words or phrases more than ten times saw a significant increase, particularly after remaining at zero in the preceding two units. This observed trend can be partially attributed to the insights gleaned from students' questionnaire responses, as documented in Table 3. While some students were still unable to adopt or imitate words or phrases from exceptional speeches by the end of Unit 4, it is worth considering the gradual growth in the number of students who have incorporated such elements from one to six times. This progress, in conjunction with the fundamental English proficiency of the students, serves as compelling evidence supporting the notion that the utilization of the teaching software has effectively enhanced students' English public speaking proficiency.

Table 3. Key words of students response to the questionnaire concerning public speaking proficiency

Unit 1	confused	difficult	uncertain
Unit 2	difficult	confused	have a try
Unit 3	complicated	attempt	positive
Unit 4	difficult	better	professional

4 Discussion and Conclusion

This study has significant implications for the integration of teaching software in English education, particularly in the context of English public speaking training. As noted by [17], many conventional English listening exercises often lack relevance to students' daily communication experiences. In contrast, teaching software bridges this gap by providing

materials that are closely aligned with students' real-world communication needs. Leveraging AI technology, teaching software can deliver tailored learning materials based on each student's background and abilities, effectively mitigating anxiety and fatigue associated with facing diverse listening exercises [2]. Furthermore, the application of teaching software has a positive impact on students' English speaking abilities. As demonstrated in this study, the combination of listening and speaking components within the software offers diverse exercises aimed at enhancing both skills simultaneously. This approach aligns with the teaching methodologies suggested by Mulyadi et al. [15] and Wang et al. [22], allowing students to acquire additional public speaking skills by studying exceptional speeches. Additionally, the incorporation of cloud-computing technology, which automatically correlates students' performance with the videos they have watched, provides students with an opportunity to revisit

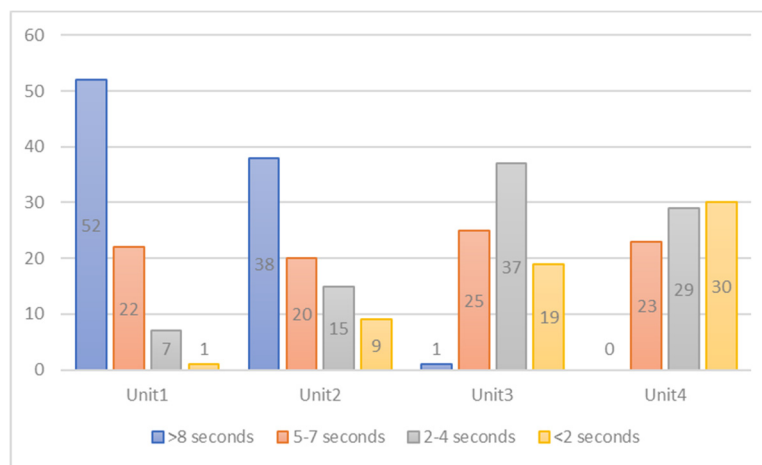


Fig. 2. Oral response rate after listening

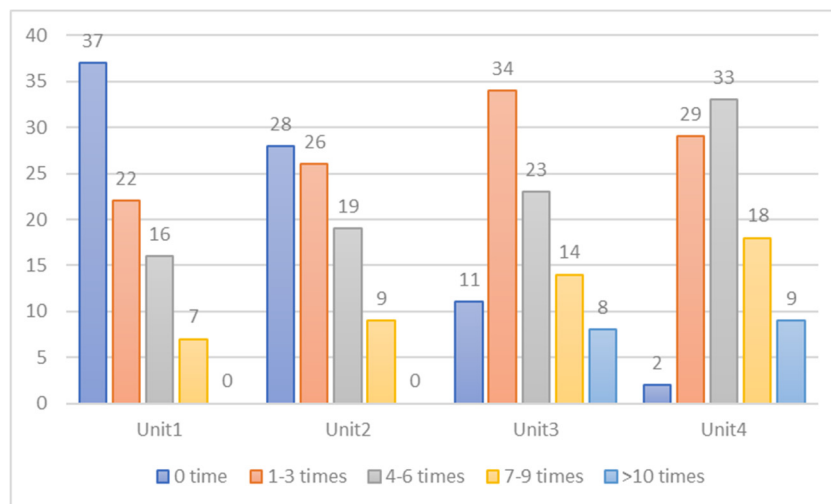


Fig. 3. Frequency of using key words from the videos

essential information from outstanding speeches [20]. This approach encourages them to refine their public speaking skills within a supportive environment [23]. To sum up, the continued integration of teaching software is highly recommended in English teaching, especially when the goal is to enhance students' listening and speaking abilities. This approach aligns with the evolving landscape of language education and the use of technology to optimize learning outcomes.

The findings of this study also offer valuable insights into the effective utilization of teaching software in pre-class sessions, especially in the context of English public speaking training. As highlighted in Grieve et al. [6], assigning homework or preparatory tasks prior to the class, in combination with teaching software, serves to alleviate students' anxiety and confusion about upcoming lessons. This is particularly relevant to English public speaking education. On one hand, teaching software provides readily available pre-learning materials that students can explore in advance. These materials not only guide them in understanding the direction of forthcoming lessons but also enable them to practice beforehand. This proactive approach not only diminishes confusion but also conveys to students the teacher's dedication and care [23]. On the other hand, students who use the teaching software before class have the opportunity to immerse themselves in virtual communication scenarios. This experience helps reduce anxiety and fosters positive expectations for the upcoming class. As noted by Tuspekova [21], public speaking learners often harbor heightened expectations regarding both the teacher's requirements and their own performance in future lessons. Such expectations can exacerbate anxiety. By engaging with pre-learning materials in the teaching software, which are custom-tailored for each student through AI technology, learners can acquaint themselves with the communication scenarios in advance. They gain insights into the learning format and expected outcomes, leading to a more relaxed and confident mindset for the upcoming class.

This study has its limitations, and future research endeavors can address these areas for a more comprehensive understanding of the impact of teaching software on students' listening and speaking abilities in English public speaking courses. Firstly, the sample size of 82 students, while providing valuable insights, may not fully represent the diverse learning landscape in educational institutions. Future research should consider expanding the sample size and conducting observations across various educational settings to better capture the broader implications of teaching software applications in English public speaking courses. Additionally, the interactive effects between students' listening and speaking skills, as suggested by Hwang [7], could be an area of further investigation. This study primarily focused on the individual impact of teaching software on each skill, and future research can explore how these skills interact and influence each other, leading to a more comprehensive view of their development in an English public speaking context. Ethnographic elements, such as gender, could also be influential factors in the relationship between teaching software and students' learning outcomes. Investigating the potential impact of such elements on learning effectiveness could be a valuable focus for future research in the fields of English learning and English public speaking.

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