Confidence Effects in an EMI Classroom about Using Transcription Tools for Chinese-speaking Students

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Abstract

With the rise of globalization, English has become an indispensable communication tool internationally. To effectively respond to this trend, English Medium Instruction (EMI) is broadly adopted in Taiwan. This study uses an English meeting transcription tool to visualize speech as text, allowing oral learners to discover areas for improvement in their speaking through the text. By integrating scientific methods into English-speaking classes through visual aids, we enhance individualized speaking learning guidance, enabling students to reflect on their pronunciation and ultimately mitigate anxiety related to English speaking. While using the English meeting transcription tool in class, the study also incorporates the concept of cooperative learning jigsaw method, breaking down the teaching content into small chapters for each student to read aloud in English to the rest of the class every other week. In the eighteenth week of the course, qualitative research was conducted with eight students to deeply explore the changes in students' confidence in speaking English under the use of speaking aids and the arrangement of cooperative learning courses. The interview content was based on the Foreign Language Classroom Speaking Confidence (FLCSC) questionnaire, covering the following five areas: self-assessment of English-speaking ability, past English class experiences, classroom speaking anxiety, perception of the course teaching arrangement, and the effectiveness of the English-speaking aid. Student feedback indicated that the easy-to-use transcription tool and the engaging classroom design facilitated participation in discussions and information retrieval. The classroom design not only meets teaching objectives but also inspires students' thinking and desire for exploration in an inspiring way. Through appropriate challenges and interactions, students have shown enthusiasm and initiative in the learning process, with improvements in reflective abilities and confidence in English-speaking-. In the environment of technology-enhanced language learning, the results of this research show that students improve their confidence in speaking English. The research findings provide a valuable reference point for educators in English-speaking-related education. These findings can serve as a basis for subsequent teaching improvements and extensions, such as integrating meeting recording tools into English-speaking education.

Keywords: English Medium Instruction, transcription tool, FLCSC, technology-enhanced language learning.

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1 Introduction

English learning can be divided into four main areas: listening, speaking, reading, and writing. In Taiwan's educational system, listening and reading have always been the main emphases in English teaching. For decades, an emphasis on reading and listening in Taiwanese English education has resulted in students lacking confidence when they need to speak the language. Despite understanding the meaning of English, they often find themselves in awkward situations where they struggle to speak. The influence of their mother tongue further hinders their fluency. Studies have shown that in Indonesia, most EFL students' pronunciation is still influenced by their native language, making it difficult to express themselves naturally in English [8]. A similar situation exists in Taiwan, causing many students to subconsciously avoid speaking English altogether. Pronunciation plays an essential role in English communication, as improper pronunciation can lead to negative impressions, misunderstandings, and even hinder communication effectiveness. Therefore, this study aims to develop English-speaking aids and teaching activities that overcome traditional learning limitations by allowing oral learners to practice speaking anytime, anywhere. This will significantly increase their opportunities to practice speaking. At the same time, these tools allow, learners to receive immediate feedback on their pronunciation and identify specific areas needing improvement, gradually building confidence in English-speaking. Additionally, data visualization plays a valuable role in today's information age. This research applies data visualization techniques to English-speaking learning, using visual elements such as charts, graphs, and maps to represent spoken conversations in the learning process. By using speech recognition software as research tools, learners can record their spoken English within this environment. through audio analysis models, their pronunciation is instantly converted into a visual representation for comparison with standard American pronunciation, This allows learners to easily assess their progress and effectively improve their speaking abilities.

Based on the research motivation, described above, this investigation focuses on using " speech recognition software" to assist in speaking practice, The study aims to improve students' pronunciation accuracy and effectively enhance their confidence in speaking English through cooperative learning. a teaching strategy where students work together in small groups. To achieve this goal, the research has formulated the following three questions:

1. How does the marking of pronunciation errors in words by the speech recognition software affect students' confidence in speaking?
2. How can cooperative learning activities be designed to increase students' opportunities to speak in front of the class, utilizing the speech recognition software?
3. How does students' confidence in speaking change between traditional teaching methods and using the speech recognition software to assist in speaking practice?

By answering these questions, this study aims to improve students' speaking abilities, provide practical teaching methods, and gain a deeper understanding of the actual effects of speech recognition software in enhancing speaking practice.

2 Literature Review

2.1 Cooperative Learning and Confidence

Cooperative learning emphasizes that students learn and achieve learning objectives through mutual cooperation during the teaching process. first proposed in the late 1800s, this learning model views students as the active subject of learning, with the teacher acting as a guide. Through team

discussions and collaborative activities [2], students can assist each other in acquiring knowledge. Cooperative learning is applicable across various disciplines, including different fields such as scientific exploration, reading and writing, mathematics, and science [3][13]. Furthermore, some scholars have conducted experimental verifications on the cooperative learning model and believe that learning through cooperation can effectively increase learners' willingness to learn [3]. Many scholars who study the concept of cooperative learning have proposed different cooperative learning strategies. Below are brief explanations of three famous cooperative learning strategies:

1. Jigsaw II: Proposed by scholar Slavin (1980) [2], it first heterogeneously groups students, then breaks down the research topic into multiple sub-questions and assigns them to group members. At the beginning of the activity, group members individually research their assigned content, then form expert groups with other group members to conduct topic research and discussions. After thorough understanding, they return to their original groups to share their respective topics, building a complete theme content [5].

2. Cognitive Apprenticeship: Proposed by scholars Brown, Collins, and Duguid, it is mainly oriented towards problem-solving learning, emphasizing active cognitive processes. Through systematic learning activities, learners are allowed to practice and experience, and to use and absorb knowledge when solving problems. This method emphasizes interaction and knowledge transfer in teaching, helping learners construct knowledge maps [10].

3. Teams-Games-Tournament (TGT): Students are heterogeneously grouped to practice learning tasks assigned by the teacher together. After completing each unit, a quiz competition is held, divided into quiz-style and question-answer-style competitions. Finally, recognition or rewards are given based on ranking. Given that this experiment is learning outcomes-oriented learning, the teacher will adopt the jigsaw method of cooperative learning. This is expected to enhance students' motivation to learn and increase their willingness to participate in class by assisting and supporting each other through teamwork.

Confidence is an individual's internal self-assessment of their ability to achieve a certain task or goal, representing a positive and proactive psychological state. Whether one possesses confidence can affect their perseverance and future achievements [4]. In Keller's ARCS motivation model proposed in 1983 [7], confidence is also considered an important factor. Furthermore, Keller (1987) [4] proposed five strategies for fostering confidence, including:

● Learning Requirements: Provide clear learning goals and aligned assessment methods.
● Difficulty: Offer appropriate challenges that stretch students' abilities.
● Expectations: Help students create achievable learning plans.
● Attributions: Guide students to identify factors that contributing to their success setbacks.
● Self-Confidence: Empower students to adjust their mindset independently to achieve learning goals.

Confidence related to language is linguistic self-confidence or L2 confidence. According to Clément (1980), linguistic self-confidence comprises self-assessed language abilities, and a lack of anxiety [6]. Additionally, Apple's (2011) study indicated that learners' confidence in their ability to speak English is also influenced by their perception of a positive classroom experience [11]. Since confidence is an internal feeling that is difficult to observe directly, validated questionnaires which are reliable and accurate assessment tools are needed to help observe its changes. In Apple's (2011) study, a 30-item Foreign Language Classroom Speaking Confidence (FLCSC) questionnaire was proposed to investigate students' confidence in learning English-speaking in the classroom and the factors influencing it.

2.2 Examples of English-speaking Related Learning Systems- ELSA Speak

ELSA (English Language Speech Assistant) Speak is an English-speaking learning assistance application developed by ELSA Corp. in San Francisco, USA, in 2015. The application divides pronunciation learning into small units, allowing learners to practice correct pronunciation skills from words, phrases, and short sentences all the way to conversations. The speaking system learning interface includes elements such as learning vowels, consonants, and stressed syllables (see Figure 1 left part). ELSA Speak's strength is its use of a color-coded feedback system. Whenever a learner records their voice, the application uses speech recognition technology to compare it with standard American English pronunciation. It color-codes the syllables of words in green, yellow, and red, and provides an assessment of pronunciation accuracy as completely off, close, or correct (see Figure 1). If a learner is confused about the pronunciation of a specific word after understanding their pronunciation status, they can further click on the word to get a more detailed explanation of pronunciation by syllable (see Figure 1). The color feedback system help learners understand which parts of their pronunciation are correct and which needs improvement, leading to improved learning effectiveness through repeated practice.

ELSA Speak participated in the English education program at STKIP Muhammadiyah Enrekang University in Indonesia in 2018 and 2019. The study involved 12 students enrolled in a pronunciation course focused on specific themes. The post-course questionnaire analysis, showed positive student responses regarding the system's content design, assessment methods, interactivity, and speech recognition, Students also appreciated ELSA Speak's design and expressed a desire to see it used in future speaking courses [1]. Based on this research, it can be observed that the color-coded word feature in English-speaking assistance systems has a positive impact on students' learning motivation. Therefore, the English-speaking assistance system to be developed in this research will also adopt the color-coded word feature.
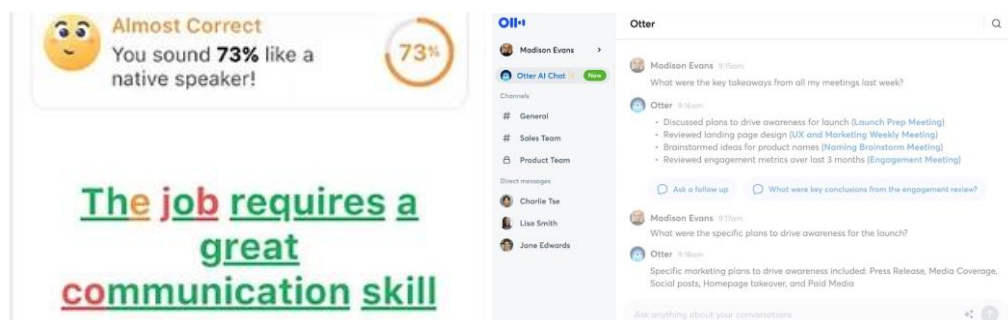

Figure 1: Visualized speech text in ELSA speak (left) and Otter.ai (right) app.

3 Research Methodology and Tools

3.1 Research Tool - Otter.ai

Otter.ai (formerly known as AISense) is a platform that records audio and transcribes it into text in real-time, illustrated in Figure 1 right part. Otter uses artificial intelligence and speech recognition technology, automatically transcribes spoken content, making it easy to search, review, and share meeting content. Otter facilitates online collaboration and learning, by offering features such as rapid conversion of audio content to text, support for multiple languages (English, Mandarin, Cantonese, Japanese, Korean), and the ability to recognize different speakers and background noise. This tool can be used for various purposes, including note-taking, organizing meeting records, and creating textual content. Otter also provides convenient features that further enhance user productivity and accuracy such as keyword search, audio recording, and annotation, This saves time and costs associated with searching for previous meeting content and textual records. Suitable for various scenarios like business meetings, online learning, language learning, speeches, and interviews, Otter's automatic transcription feature reduces the burden of manual recording, improves efficiency, and makes it easier for everyone to keep up with meetings and discussions. Additionally, Otter supports multi-platform use on computers, phones, and tablets (iOS, Android, and web platforms) for convenient access anytime, anywhere.

3.2 Research Tool - FLCSC Questionnaire

In 2011, Apple introduced a 30-item questionnaire on Foreign Language Classroom Speaking Confidence (FLCSC), which was used to observe students' confidence in speaking English in the classroom. The questionnaire also investigated the relationships between the Big Five Personality Traits, students' English classroom speaking confidence, and the social environment. The questionnaire consisted of six dimensions,:
1. Foreign Language Classroom Speaking Anxiety (FLCSA)
2. Perceived Foreign Language Speaking Self-Competence (PFLSS)
3. Desire to Speak English (DSE)
4. Past English Classroom Experiences (PECE)
5. Current English Classroom Perception (CECP)
6. Perceived Social Value of Speaking English (PSV)

In Apple's (2011) study, the PECE (Social Support in Educational Environment) and PSV (Perceived Value of Language Learning) dimensions in the questionnaire used a 4-point Likert scale, while the other dimensions used a 6-point Likert scale. Ultimately, based on the questionnaire results, the first three dimensions (FLCSA, PFLSS, DSE) formed the speaking confidence, while the last three dimensions (PECE, CECP, PSV) were considered factors influencing speaking confidence. Reliability for in-class anxiety was .89 and for out-of-class .87 and for the combined scales .94. These indices indicate that the FLCSA is a reliable instrument. Apple (2011) made several recommendations, including increasing communication opportunities in the classroom, such as through pair work or group work, to provide students with more speaking opportunities. Teachers should also encourage and guide students more, with the hope that these measures will enhance students' speaking confidence and reduce speaking anxiety.

3.3 Research Design

As shown in Figure 2, this study will involve six student English-speaking presentations. Each week, students will be assigned content from the learning text. students will be assigned content from the learning text. Students will take turns delivering presentations bi-weekly (every other week). In this process, the study will use the jigsaw method in cooperative learning, coupled with the English meeting transcription tool for classroom activities. Through the rules and reward mechanism of the jigsaw method, and with the transcription tool revealing pronunciation errors individual speaking assessments can be conducted for each student, Students can compare the recognized text with the actual text in the textbook to reflect on their pronunciation. Through repeated practice, students can improve the accuracy of English word pronunciation. In such a cooperative learning environment, students gradually become willing to practice speaking and communicate with others, thereby cultivating confidence in learning English-speaking. Additionally, after using the meeting transcription tool, the study will conduct qualitative interviews one by one based on the Foreign Language Classroom Self-Confidence Scale (FLCSC) questionnaire. PsychoPy [9] was used to collect data in the experimental psychology research. The main purpose is to explore the changes in the English-speaking confidence of the participants after using the meeting transcription tool, and to identify factors influencing confidence.
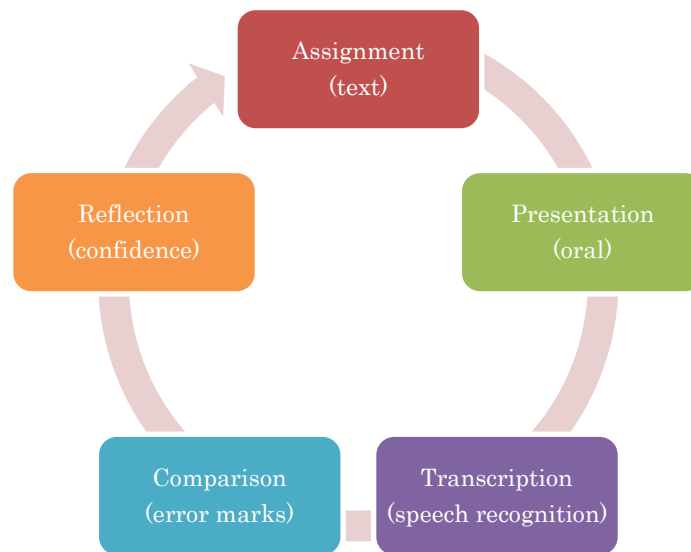

Figure 2: Framework of English presentation studies each week.

3.4 Learning Activity Flow

Figure 3 presents the activity flow, which is designed based on cooperative learning's jigsaw method, combined with the Otter meeting transcription tool, aiming to enhance students' speaking confidence in a collaborative learning environment with technological assistance. Before class, the teacher prepares for the lesson, including the learning topic, activity materials, and discussion questions to facilitate student engagement. The activity materials include a 3–5-minute speaking learning video and the text for student speaking presentations.

The teaching environment utilizes cooperative learning's small group game competition method, with groups of 3-6 students.

At the beginning of the class, the teacher gives a whole-class lecture, introducing the main teaching content and key points from the video, then explains the rules of the jigsaw method, and finally plays the instructional video. **2.**After the video, the teacher divides the students into groups to familiarize them with the operation of the Otter meeting transcription tool. **3.**Once students are familiar with using the tool, they will engage in speaking presentations in class. **4.**When students present, they simultaneously press the recording button on the interface, and the transcription tool will display the text of the sentences they read. This allows the teacher and other students to understand the pronunciation of the student speaking on stage in a timely manner. After each student's presentation, the teacher collects the transcription text for each student. The teacher can display a sentence or word on the classroom screen for whole-class discussion based on teaching needs. The teacher allows students to complete their presentations without interruption, with pronunciation accuracy identified by the transcription tool. **5.**After class, students can review and practice using the transcription text. This design aims to create an engaging and effective learning environment, combining cooperative learning and technological assistance to enhance students' speaking confidence.
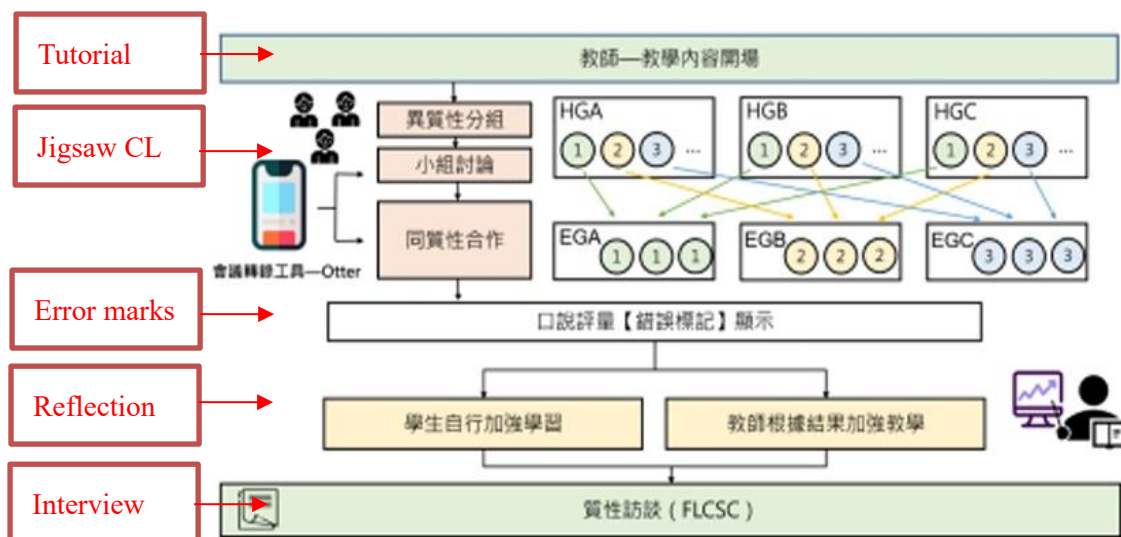

Figure 3: Flow of learning activity integrating with the meeting transcription tool.

4 Data Collection and Results Discussion

To verify the activity planning and relevance of this study, the following steps will be taken:
1. Student Arrangement: Arrange eight participants, including seven master's students and one fourth-year university student.
2. Class Activities Implementation: Implement the study's class activities to ensure all eight students complete the corresponding tasks.
3. One-on-One Interviews: Conduct one-on-one interviews to deeply understand students' experiences and perceptions of using the meeting transcription tool for improving their English-speaking. The entire interview process will be recorded for documentation.
4. Feedback Survey: In addition to the FLCSC questionnaire, conduct an in-depth feedback

survey to understand students' opinions on the operation of the meeting transcription tool and its assistance in English-speaking in class. Explore the tool's actual application, identify any issues students may encounter during use, and collect suggestions.

5. Subsequent Research Improvement Suggestions: Based on student feedback and opinions, adjust the research and activity planning to enhance the system's practicality and effectiveness.

This iterative testing and modification process refines the research content for usability and effectiveness. It also provides insights into students' experiences with the meeting transcription tool, further informing the direction of future related research.

4.1   Past English-speaking Learning Experiences

In Taiwan's entrance exams, the assessment of English proficiency primarily focuses on listening and reading skills. This has led English education to prioritize the cultivation of students' listening and reading abilities while neglecting training in oral communication. For students aiming to boost their speaking confidence, students often need to take additional cram courses, join English speech associations, or even live in English-speaking countries to enhance their speaking skills. This phenomenon raises our concern about the current imbalance in English education, which may result in students' inadequate performance in oral expression and a lack of confidence to speak up, creating a vicious cycle.

> **M13:** "In elementary school, I spoke English more often in cram schools, but in junior and senior high school, the teaching became more exam-oriented, and there was less English-speaking."
>
> **M01:** "In junior and senior high school, the focus was on academic content, and there was hardly any English communication."
>
> **M22:** "There was less speaking in school. I only did presentations once or twice a semester. But I also joined an English speech association, where I shared once a week."

In English classes, teachers play a crucial role in providing feedback on students' speaking performance. However, traditional teaching methods such as focusing on grammar mistakes during every conversation, can create a culture of constant evaluation. This emphasis on correction, exams, and grading can erode students' confidence and even lead to an aversion to the language. We must remember, Language is a tool for communication, and the fear of speaking incorrectly can hinder this very purpose. Therefore, we should consider how to change teaching methods to help students use English more confidently.

> **M13:** "After the speaking test, the teacher said she really liked my English accent, and I felt encouraged."
>
> **M14:** "I wasn't particularly encouraged, and I even had some resistance to English."

4.2   Speaking Anxiety in English Presentations in Class

According to research findings, second language speaking anxiety mainly stems from others' evaluations of the speaker, which explains why speaking to teachers or superiors can be more nerve-wracking than speaking to peers. Therefore, current teaching methods emphasize interaction among students rather than one-way lecturing. Through interviews conducted in this study, we gained a deeper understanding of the importance of peer interaction. In a

collaborative learning environment, students can observe each other's strengths and weaknesses, leading to mutual learning, competition, and gradually adjusting their learning mindset to speak English confidently on stage. Future researchers can consider these results and encourage students to ask questions or give encouragement in a collaborative learning environment to promote changes in students' learning attitudes and achieve more progress through mutual growth.

> **M14:** "At the beginning, I was very nervous about speaking on stage. I would read many words quickly, and I felt the error rate was quite high. After several weeks of speaking and listening to other students' speeches, I began to slow down my pace and gradually grasp a reading rhythm that suited me."

> **M14:** "The experience of speaking on stage has gradually enabled me to adapt to speaking and sharing in front of everyone. I clearly feel more courageous and confident in speaking, sharing, and asking questions than before."

4.3   Using the Meeting Transcription Tool Otter for Learning English-speaking

Emphasizing the establishment of correct self-perception is crucial in teaching. Language learning is a process of continuous correction and development, similar to learning one's mother tongue. Learners of Chinese or English may have situations where their pronunciation or word usage is not standard. Through long-term learning, imitation, and correction, learners can establish correct language communication abilities. Therefore, this class can inspire students to use technology-assisted tools to learn English, practice speaking repeatedly, and adjust pronunciation based on Otter's objective recognition information, This approach helps students develop a natural approach to language learning.

> **M09:** "Otter is not a perfect tool, but it does provide a reference for practicing English-speaking. It also stores audio files, allowing me to go back and confirm the pronunciation at that time, and explore the reasons more carefully."

> **M13:** "You can use Otter to repeat pronunciations, confirm whether your pronunciation is correct, and recognize whether it is correct."

Because Otter's purpose is to accurately record the pronunciation received at the time, the recognition results may not meet the user's expectations due to factors such as the current recording, user accent, and operating method. Some students also question the necessity of using Otter because they are accustomed to using more mainstream search engines.

> **M22:** "The accent problem is therefore judged as another word, which also makes me think that if people with accents use speech recognition software, they may have the same problem."

> **M13:** "Currently, I won't use Otter to practice speaking because it takes less time to directly open Google. But will I have the opportunity to use it in the future? I think it's unlikely that I won't. It's just that I haven't encountered the need for it yet."

4.4 Reflection on English-speaking Pronunciation

This teaching arrangement fosters active, autonomous learning and metacognition. Through the use of the Otter meeting transcription tool, students can independently review their pronunciation issues and make corrections. Using Otter while reading aloud on stage not only

provides instant playback of recordings but also allows students to engage in deeper self-reflection and learning by comparing the recognition results afterwards. This teaching method is designed considering students' learning needs and teaching goals, helping to improve students' ability to express themselves in English and cultivate their autonomous learning and metacognitive abilities, aligning with the requirements of modern educational concepts.

> **M01:** "In many places where sounds like s, t, d, and f require air sounds, or where the tongue needs to be spit out or the mouth needs to be opened wide."
>
> **M05:** "Mainly, light sounds at the beginning of sentences are easy to be pronounced as heavy sounds, such as c/g, w/g, st/sl, cha/tra; and changes in word endings are not pronounced clearly, such as s, ed, sion, ing; there are also situations where the m sound is not closed tightly."
>
> **M09:** "Some word connections between words are detected as a single word, for example, 'with the' is recognized as 'wasteful'."
>
> **M15:** "Reading too quickly can lead to poor recognition of consonants such as t, s, z."
>
> **M22:** "The pronunciation of word endings is not accurate, such as th, ness."

Summarizing the pronunciation reflections of the students above, we can observe that strengthening the concepts of the three sound types and practicing them accordingly is crucial, especially for beginners,, as it can helps establish correct pronunciation habits early on. students aware of their pronunciation issues, can benefit from seeking teacher assistance or using technology tools for objective pronunciation guidance, ultimately improving pronunciation and boosting confidence in oral expression [12]. These guiding suggestions can be directly applied in actual teaching to help students master English pronunciation and enhance their language expression abilities.

4.5 Suggestions and Reflections on This Course Arrangement

After the completion of six English-speaking sessions, students provided feedback and reflections on the course content and activities, such as the presentations they did. This helps to understand students' opinions and satisfaction with the use of the transcription system in the jigsaw learning model used in the course, providing a basis for further research and improvement of student classroom experiences. Some students have suggested that the learning model planned in this study has helped with their English-speaking and has indeed influenced their English learning methods outside the classroom. This is an expected result of the research, allowing students to find new learning strategies through course arrangements and continuously trying to find the most suitable learning model for themselves.

> **M01:** "Using this method of comparing and marking mistakes after recording, I believe that in the long run, this way of practicing speaking will be very helpful. I found that I would unconsciously compare the differences between correctly and incorrectly pronounced words, reflecting on my pronunciation mistakes."
>
> **M14:** "When browsing literature or reading news online, when encountering English, I will try to understand their pronunciation, not looking up first and then pronouncing, but pronouncing first and then looking up, feeling that my oral learning mode has changed."

Additionally, some students have proposed suggestions for modifying the course arrangement. As mentioned by the following student, in order to truly test students' speaking abilities, the course text can be adjusted to be revealed on the day of the lesson, allowing students to experience a more authentic English-speaking environment. This adjustment could also help more accurately assess whether students' speaking anxiety or confidence has significantly improved through the use of the FLCSC questionnaire. Future researchers could consider this suggestion to enhance the design of classroom activities, preventing students from becoming accustomed to a specific teaching method and lacking stimulation.

> **M15:** "Perhaps redistributing the course text on the spot could better reflect individual English-speaking abilities."

5   Conclusion

In today's globalized world, English is becoming increasingly important as a communication tool. However, English education in Taiwan faces a series of challenges. The traditional English teaching model mainly focuses on grammar and vocabulary teaching, lacking comprehensive cultivation of skills such as speaking, listening, reading, and writing. Additionally, teaching often tends to be exam-oriented, lacking real-world application scenarios, leading to a lack of interest and practicality in learning English. Furthermore, the absence of English as an official language creates a dearth of daily usage opportunities, hindering students' confidence in spoken English and pronunciation.

With the rapid development of modern information technology, new possibilities emerge to address these issues. meeting transcription tools like Otter empower students for autonomous learning, breaking the limitations of time and place. Students can learn English-speaking in their own context and improve pronunciation through practical application. Furthermore, incorporating technology-assisted tools, alongside a shift towards more engaging teaching methods and collaborative learning environments can significantly enhance students' English skills and overall learning experience. Excellent teaching staff and students' efforts remain crucial driving forces for improvement. Looking forward, we can expect to see even more innovative teaching methods emerge, further propelling the quality of English education in Taiwan. This will not only make the learning process more enjoyable for students but also better prepare them to thrive in the face of globalization's challenges.

Acknowledgement

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