An Action Research on Phonetics Instruction in College-level English Education

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Abstract. The deficiency in knowledge of English phonetics constitutes a significant contributing factor to the lower proficiency observed among college students in terms of their listening and speaking skills in English. By implementing a communicative approach, an action research study was conducted with the aim of enhancing students' pronunciation and intonation within speech flow, thereby effectively improving their ability to communicate in English. This investigation suggests that incorporating phonetic instruction into college-level English education can augment language acquisition accuracy and enhance students' linguistic proficiency when expressing themselves, ultimately facilitating successful communication in the English language.

1. Introduction

There are various factors that impact the English listening and speaking proficiency of college students, including insufficient vocabulary and grammar knowledge. Additionally, inadequate understanding of English phonetics is a significant contributor to lower levels of English listening and speaking ability among college students. To address this issue, action research methodology is employed to conduct reflective teaching experiments in practice. Through adopting a communicative approach, this study aims to enhance the pronunciation and intonation skills of college students in speech flow, thereby improving their accuracy in acquiring language information and ultimately achieving effective communication in English.

2. Overview of Action Research Theory

Action research was initially proposed by social psychologist Lewin in the 1940s and has been introduced to China for numerous years[1]. Various scholars have provided their own definitions of action research from diverse perspectives. The most widely accepted definition characterizes action research as a form of self-reflection, enabling social workers and educators to enhance their understanding and evaluation of the social or educational initiatives they are involved in, as well as their work processes and environments. The fundamental essence of action research lies in the integration of action and research. Key elements encompass inquiry, reflection, action, collaboration, change, and professional development[2]. The process of action research follows a spiral deepening developmental trajectory that comprises four interconnected and interdependent stages: planning, action, observation and reflection[3]. Lewis contends that the integration of teaching and research engenders an unprecedented fervor for pedagogy among educators, bolstering their self-esteem and fostering a heightened sense of confidence[4]. Based on this premise, teachers can enhance their efficiency in implementing action research by proactively reflecting on teaching issues and actively seeking solutions. Consequently, not only can teachers elevate their professional standards but also improve student achievement[5].

Action research was introduced into foreign language teaching in China during the 1990s[6]. Wang provides a comprehensive and systematic exposition of action research theory in her book Action Research for English Teachers. Furthermore, she offers guidance to English teachers in China on how to effectively implement action research in their own teaching practices[7]. Her work has had a profound impact on the advancement of action research in China. Meng employs bibliometric analysis as a research method, utilizing databases such as CNKI, core journals from Peking University and Nanjing University, to conduct an extensive data analysis on various topics related to action research in foreign language teaching between 2011 and 2021. The findings reveal that approximately 85.7% of the literature focuses on action research pertaining to English listening, speaking, reading, writing, and translation, however, phonetic instruction within college-level English is not extensively explored[8]. Specifically searching through CNKI using keywords such as phonetic teaching and action research within the scope of advanced search for college-level English from 2013 to 2023 yielded only a total of 14 papers. This indicates that there is limited scholarly attention given to action studies concerning phonetics instruction within college-level English education in China.
3. Action Research in English Phonetic Teaching

This study involved 58 second-grade Business English major students from 2 classes who participated in a one-year comparative teaching experiment, with two courses (Business Listening and Oral English for Business Negotiation) serving as experimental interventions. A communicative approach was employed to facilitate the development of students' pronunciation and intonation within the context of speech flow, which is characterized by native speakers' sequential production of multiple sounds rather than articulating each word in isolation. Merely engaging in mechanical practice of single phonemes does not effectively contribute to language learning; therefore, it is recommended that learners actively participate in more authentic language communication environments. The two courses specifically designed for business English majors provide ample opportunities and content for learners to acquire and apply phonological knowledge within the natural context of speech flow.

3.1. Identifying the Problem and Formulating Hypotheses

Through early classroom observations and interviews with students and teachers in both classes, the author discovered that a significant number of students exhibited limited understanding of fundamental Phonetic knowledge. Specifically, their comprehension of English phonetic alphabets was frequently inaccurate, hindering their ability to effectively read and memorize numerous college-level English words. Furthermore, these students encountered difficulties in grasping essential English phonetic rules such as stress, linking, reduction, explosion, assimilation, and rhythm.

These aforementioned factors have resulted in a decline in interest and confidence among students when it comes to furthering their proficiency in the English language. In both speaking and listening classes, students demonstrated subpar performance with the majority still struggling. For these reasons mentioned above, the author devised a course questionnaire and conducted English listening and phonetic tests in both classes. These measures led to the identification of issues which formulated a hypothesis: namely that phonetic knowledge constitutes one of the crucial factors influencing students' proficiency in English listening and speaking skills. Phonetic training can enhance students' accuracy in expressing themselves in English as well as their ability to comprehend language information ultimately facilitating effective communication. Consequently, an intervention plan for action research was designed by selecting the class with lower scores on initial tests as the experimental group for implementing said plan.

3.2. Revising and Executing Action Plans

The action plan consisted of two distinct stages. The initial stage encompassed the acquisition of phonetic knowledge, which required approximately 4 class hours for completion. Subsequently, the second stage involved intensive phonetic training in two courses. Throughout the entire academic year, a communicative approach was utilized to improve students' pronunciation and intonation in their speech flow.

3.2.1. The first stage

In the initial phase of the study, the teacher employed an engaging English phonetic alphabet teaching approach to introduce English phonetic alphabets in 2 class hours. By means of categorization and comparison with Chinese pronunciations, each phonetic symbol was assigned a vivid Chinese name. Through association, homophony and other techniques, students were able to acquire and proficiently grasp English phonetic alphabets in just 2 class hours. Subsequently, following the completion of the phonetics instruction, an additional 2 class hours were dedicated to elucidate concepts pertaining to hyperphonology encompassing stress patterns, intonation variations, rhythmic elements, weak forms usage as well as linking and reduction phenomena.

3.2.2. The second stage

In the second phase of the study, the communicative approach was employed to facilitate phonetic training in speech flow within the experimental group. Taking into account both language characteristics and students' proficiency levels in this particular class, a series of meticulously designed classroom activities were implemented, encompassing syllable training, simulation exercises, free expression and role play. These activities were strategically sequenced from simpler tasks to more demanding ones without necessitating significant adjustments.

During syllable training, students were guided in the process of reading and memorizing challenging words by systematically dissecting them into individual syllables during listening or oral English classes. This pedagogical approach not only facilitated accurate word recognition but also enhanced the ability to effortlessly decode unfamiliar words with longer spellings, thereby enabling students to improve their orthographic skills based on phonetic segmentation.

In the simulation training, students should engage in repetitive simulation exercises based on the phonological characteristics present in the oral and listening learning materials. This enabled them to develop familiarity with pronunciation and intonation, thereby ensuring accuracy and fluency in their spoken language.

In the sessions of free expression and role-play, the author meticulously curated topics to facilitate unrestrained discussions among students, while also imposing a requirement for them to deliver spontaneous speeches lasting approximately 2 minutes on these subjects. Following each speech, both the teacher and fellow students actively engaged by posing inquiries or offering suggestions pertaining to language usage or content. Subsequently, after the conclusion of the free
undeniably revealed substantial improvements in students’ English listening and speaking proficiency resulting from integrating phonetic training with a communicative approach to speech flow (see Table 1-3 for statistical data analysis).

The students from both classes underwent phonetic and listening tests at the beginning and end of the initial semester, followed by listening and speaking assessments at the end of the second semester. Subsequently, utilizing SPSS software, the data obtained from these three evaluations were meticulously organized and subjected to rigorous statistical analysis. The ensuing comparisons are presented as follows.

3.3. Evaluating and Reflecting of Action Plans

Following implementation of intervention plans, an extensive evaluation and reflection were conducted using questionnaires, interviews, and classroom observations. Subsequently, a comparative analysis was carried out between the experimental class and the comparison class regarding pre- and post-experiment phonetic/oral English tests as well as listening tests based on language test score data analysis. Furthermore, within the experimental class itself, vertical comparisons were made by examining pre-versus post-experiment test scores. The final outcomes undeniably revealed substantial improvements in

<table>
<thead>
<tr>
<th>Test time</th>
<th>Test</th>
<th>Class</th>
<th>Class size</th>
<th>Lowest score</th>
<th>Highest score</th>
<th>Average score</th>
<th>Standard deviation</th>
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<tr>
<td>The beginning of semester 1</td>
<td>Phonetic test scores</td>
<td>Comparison class</td>
<td>28</td>
<td>31.00</td>
<td>85.00</td>
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<td>94.00</td>
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<tr>
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<td>Oral test scores</td>
<td>Comparison class</td>
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<td>90.00</td>
<td>76.8214</td>
<td>7.15983</td>
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</table>

The initial tests in the first semester revealed similar scores between the two classes, as indicated by Table 1. However, during consecutive semesters’ final assessments, the experimental class outperformed the comparison class in both phonetic/oral English tests and listening tests. The significance of this disparity can be further elucidated through an independent sample T-test.

Table 2. Variational scale of the final test scores in semester 1 and 2 between the 2 classes.

<table>
<thead>
<tr>
<th>Independent sample test</th>
<th>Variational Levene test</th>
<th>T-test for mean equation</th>
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<tr>
<td></td>
<td></td>
<td>F</td>
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<td></td>
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<td>The phonetic scores at the end of semester 1</td>
<td>Suppose variance Equal</td>
<td>.688</td>
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<tr>
<td></td>
<td>Suppose variance Not equal</td>
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<tr>
<td>The listening scores at the end of semester 2</td>
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</tbody>
</table>
The oral scores at the end of semester 2
Suppose variance Equal 11.577 .001 -4.767 56 .000 -7.44524 1.56167 -10.57365 -4.31683
Suppose variance Not equal -4.696 45.055 .000 -7.44524 1.58538 -10.63825 -4.25222

The listening scores at the end of semester 2
Suppose variance Equal 4.347 .042 -2.726 56 .009 -8.9217 1.82203 -8.61663 -1.31670
Suppose variance Not equal -2.699 49.912 .009 -8.9217 1.84015 -8.66288 -1.27046

The T-test scale in Table 2 presents the final test scores of the phonetic/oral and listening courses for two semesters in both classes. This comparison involves two independent samples, an independent sample t-test was employed. Analysis of Table 2 reveals that at the end of both semesters, there were probability values indicating significant differences between phonetic/oral scores and listening scores in both classes: 0.047, 0.000, 0.000, and 0.009 respectively.

At the end of semester 1, with a probability value of 0.047 falling within range of 0.01 to 0.05, it demonstrates a significant difference between these classes, whereas all other values are less than <0.01, indicating extremely significant differences.

The negative t-value in this table is attributed to the utilization of SPSS software, where data from the comparison class is designated as group one, while the experimental class is assigned as group two during the inspection and calculation procedures.

These findings indicate that after implementing communicative approach to enhance pronunciation and intonation skills among college students in speech flow context, the experimental class achieved higher scores compared to their counterparts in both phonetic/oral and listening tests.

3.3.2. Longitudinal Comparison

The longitudinal comparison involves evaluating the test scores of multiple assessments to determine whether there is any discernible improvement subsequent to the implementation of action plans in the experimental class, thereby facilitating an assessment of the efficacy of the instructional approach.

The results presented in Table 3 demonstrate a statistically significant improvement in the average scores of phonetic/oral and listening performance following the implementation of the action plans, as observed at the culmination of both semesters.

Table 1-3 reveal a significant enhancement in English phonetic/speaking and listening test scores for the experimental group after implementing the action plans over two semesters, as compared to the comparison group within an equivalent time frame.

After the implementation of action intervention plans, a significant improvement in classroom teaching effectiveness was observed. Through student interviews, it was revealed that the majority favored this phonetic training method due to its enjoyable approach towards acquiring English phonetics. They believed that this engaging pedagogy facilitated rapid comprehension of phonetic knowledge, boosted their confidence in spoken English, and prevented them from being subjected to ridicule for mispronunciations.

Consequently, their interest in learning English substantially increased. In the post-experiment questionnaire survey, 87% of students expressed support for employing a communicative approach to train phonetic knowledge in speech flow. By actively participating in activities such as word spellings, simulations, free expressions, and role-plays during class time, they gradually improved their pronunciation and intonation skills while unconsciously enhancing their listening and speaking proficiency in English. In contrast to the experimental class, the comparison group exhibited significantly lower levels of enthusiasm towards learning English as well as reduced engagement in classroom activities and interactions between teachers and students.

4. Conclusion

After implementing action plans for one academic year, this study suggests that employing a communicative approach to phonetic training within the speech flow can significantly enhance students' motivation to learn English phonetics, bolster their confidence in speaking English, transform the learning atmosphere and outcomes of English listening and speaking classes, ultimately leading to improved accuracy in students' expression of the English language and acquisition of linguistic information.

In the interim, it is imperative to acknowledge a crucial aspect of this study. The present action research
was conducted within two classes, encompassing a mere 58 participants, thereby rendering the sample size insufficiently substantial. Consequently, investigations involving larger cohorts of students are warranted to further delve into the pivotal roles played by phonetic knowledge in English listening and speaking proficiency. Furthermore, it should be noted that this study solely relied on the discernment of a solitary researcher who undertook the action research. Incorporating additional researchers would have facilitated an enhanced point of comparison.

References

6. Z. Liu, X. Li, *Action research on college English teaching in China*. J. Overseas English, 12, 3-6 (2022)