



Empirical Research on the Improvement of College English Speaking Skills Grounded in the Production-Oriented Approach Theory in a Blended Context

Yandong Deng

Foreign Languages School, Shenyang Aerospace University, Shenyang, China

yandongmark@163.com

Abstract. The research utilizes the "Production-Oriented Approach" developed by Professor Qiufang Wen as the theoretical framework. Utilizing the online resources of "Practical University English Speaking" on the "Cool Learning Liaoning" top-quality course platform, it employs a blended learning model that combines online and offline methods. Two batches of pupils, one being the experimental group and the other the control group, were chosen to undergo multiple rounds of oral proficiency training using both POA and non-POA research methods. Statistical analysis was conducted on the collected data using SPSS software, aiming to empirically evaluate the efficacy of the POA theory in enhancing university students' oral English proficiency in a blended practice environment.

Keywords: Production-Oriented Approach, College Oral English, blended research, statistical analysis

1 Introduction

The 'College English Teaching Guide' emphasizes that college English instruction should concentrate on developing students' abilities to use English practically, with a particular focus on enhancing their skills in oral and written communication^[1]. However, in numerous universities across our nation, including higher vocational colleges, due to constraints such as class hours among various factors, there is not only a lack of independent college English oral courses, there also being an absence of a systematic framework for oral coursework, which limits students' opportunities for oral practice.

The 'College English Teaching Guide' also highlights that each university need to form an effective mechanism for the co-construction and sharing of teaching resources^[1]. This significant push to enhance educational technology has demonstrated the necessity and advantages of digital solutions that can support both on-campus and online activities^[2]. Therefore, there is an urgent need for new exploration in the blended enhancement of college English oral skills.

2 Theoretical Perspectives

2.1 Blended Learning Theory

Blended learning theory is an educational model that integrates traditional classroom learning and online learning, aiming to combine the advantages of both methods to improve learning outcomes and efficiency. That is to say, it should not only leverage the teacher's role in guiding, inspiring, and monitoring the teaching process but also fully reflect the initiative, enthusiasm, and creativity of students as the main agents of the learning process^[3]. It further facilitates interactive, collaborative, and shared construction of meaning-making among the students, which enhances the quality of learning more effectively^[4].

2.2 Production-Oriented Approach (POA)

Professor Wen Qiufang's "Production-Oriented Approach" (POA) is an integrated research system, whose hypotheses include "output-driven theory," "input enhancement mechanism," "selective learning," and "assessment-oriented learning." In the output-driven phase, teachers design specific assignments according to the topic of each unit. During the task production process, it can not only stimulate students' enthusiasm for learning but also make them realize the need for further improvement in English ability and cultural knowledge. This phase can inspire a strong internal drive in students, prompting them to actively use online resources to compensate for these shortcomings; in the input enhancement phase, students independently access online resources and participate in chosen learning, while teachers offer support and serve as a "scaffold."^[5]

POA incorporates both local and international elements, which has been implemented in classroom teaching across a wide range of college English classes for both majors and non-majors^[6].

Blended learning is the combination of traditional instructor-led learning with distance learning mediated by different ICT to create an optimum learning experience^[7]. By integrating the POA (Production-Oriented Approach) theory with blended learning theory, a research approach to enhancing college English oral proficiency is constructed with the POA theory as the course framework.

3 Research Methods

3.1 Overview of Research Methods

Starting from the spring semester of 2022, based on the 'Cool Learning Liaoning' platform's 'Practical College English Oral Communication,' four rounds of blended learning research on enhancing college English oral proficiency have been conducted. From the spring semester of 2023, over two consecutive terms, experimental and control groups were selected randomly. The experimental group applied the Production-Oriented

Approach (POA) in the research process, while the control group employed approaches not based on the POA for course design and specific research.

Table 1. Researching Techniques (source: this study)

| | | |
|-----------------|---------|----------------|
| RO ₁ | POA | O ₂ |
| RO ₃ | Non-POA | O ₄ |

Following the research process each semester, pre- and post-experimental tests were conducted for both groups of students, utilizing SPSS to conduct independent sample T-tests and paired sample T-tests between groups. The research aimed to verify whether the blended learning research model based on POA theory could effectively enhance students' English oral proficiency. **Table 1**

3.2 Detailed Research Procedure

Course Development Informed by POA Theory

The basic form of the blended learning model combines face-to-face teaching between teachers and students with online learning, breaking away from the monotonous pattern of traditional classroom lectures^[8].

Output-driven: Before systematically studying the unit videos, as the first assignment of each week, students were required to participate in a dual-video role-play related to the specific unit topic in the first semester. This was changed to a solo topic presentation in the second semester.

Input facilitation: The learning unit videos are released as planned, and students are required to watch them within a designated timeframe. In addition, the teacher will provide detailed summaries of the core word choice and syntactic structures in the videos.

Productive tasks: Upon finishing the module study, another task is assigned. In the first semester, students are required to make an individual presentation concerning a subject connected to the module's topic, which is changed to a dual-video role-play in the second semester.

Diversified assessment: The evaluation methods are varied. Firstly, the teacher grades the dual-role play or individual topic presentation. Secondly, in the outcome-oriented assignment of the solo theme presentation, in addition to the teacher's grading, peer assessment is also included.

Questionnaire Design

In the first semester, a survey questionnaire was crafted covering various dimensions such as output-driven, input facilitation, output, and general course perception, consisting of 22 Likert-scale items. Following the initial structural validity, content validity, and common factor reliability analyses of the questionnaire, the questionnaire was refined, which was distributed and collected, and validity and reliability analyses were conducted again.

4 Experimental Design, Results, and Data Analysis

4.1 Experimental Design

Hypotheses

H₀: $\mu_1 = \mu_2$, i.e., the null hypothesis: The blended research approach influenced by POA theory could not enhance students' English speaking competence.

H₁: $\mu_1 \neq \mu_2$, i.e., the alternative hypothesis: The blended research approach influenced by POA theory could enhance students' English speaking competence.

Establishing Data Files for Two Semesters

For the two semesters, guided by the two designated independent sample T-tests between groups and two paired sample T-tests within groups, two data sets are established. The variable "group" indicates the classification, where "1" and "2" correspond to the experimental and control groups.

4.2 Experimental Results and Data Evaluation

Independent Samples T-test for Assessments Prior to Experiment of Both Groups Over Two Semesters

Table 2. Group Data of Assessments prior to Experiment for 1st semester (source: this study)

| | group | N | Mean | Std. Deviation | Std. Error Mean |
|---------------------|-------|----|-------|----------------|-----------------|
| Pre-exp test scores | 1 | 56 | 75.34 | 9.476 | 1.266 |
| | 2 | 59 | 74.17 | 8.124 | 1.058 |

Table 3. Group Data of Assessments prior to Experiment for 2nd semester (source: this study)

| | group | N | Mean | Std. Deviation | Std. Error Mean |
|---------------------|-------|----|-------|----------------|-----------------|
| Pre-exp test scores | 1 | 35 | 73.69 | 10.846 | 1.833 |
| | 2 | 33 | 72.82 | 13.609 | 2.369 |

In the first semester, the mean score of the experimental group a bit exceeded that of the control group, showing a disparity of 1.17, which is not significant. **Table 2**

In the second semester, the score a bit exceeded that of the control group, showing a disparity of 0.87, which is not significant. **Table 3**

Table 4. Levene's Test for Equality of Variances for Assessments prior to Experiment for 1st semester (source: this study)

| Levene's Test for Equality of Variances | | | | t-test for Equality of Means | | |
|---|-----------------------------|------|------|------------------------------|---------|----------------|
| | | F | Sig | t | df | Sig (2-tailed) |
| Pre-exp test scores | Equal variances assumed | .008 | .929 | .712 | 113 | .478 |
| | Equal variances not assumed | | | .709 | 108.457 | .480 |

Table 5. Levene’s Test for Equality of Variances for Assessments prior to Experiment for 2nd semester (source: this study)

| Levene’s Test for Equality of Variances | | | | t-test for Equality of Means | | |
|---|-----------------------------|------|------|------------------------------|---------|----------------|
| | | F | Sig | t | df | Sig (2-tailed) |
| Pre-exp test scores | Equal variances assumed | .008 | .929 | .712 | 113 | .478 |
| | Equal variances not assumed | | | .709 | 108.457 | .480 |

The differences between the two groups are not statistically significant, signifying the speaking competence levels of the pupils in each group remain consistent across both semesters. **Table 4 Table 5**

Paired Samples T-Test for Assessments Prior to and After Experiment of the Experimental Group Over Two Semesters

Table 6. Paired Samples Data of the Experimental Group for 1st semester (source: this study)

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|----------|-------|----|----------------|-----------------|
| Pair 1 | Pre-exp | 75.34 | 56 | 9.476 | 1.266 |
| | Post-exp | 83.18 | 56 | 8.104 | 1.083 |

Table 7. Paired Samples Data of the Experimental Group for 2nd semester (source: this study)

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|----------|-------|----|----------------|-----------------|
| Pair 1 | Pre-exp | 73.69 | 35 | 10.846 | 1.833 |
| | Post-exp | 88.23 | 35 | 4.052 | .685 |

For both semesters, the post-experimental test mean scores of the experimental group were significantly higher than the pre-experimental test mean scores, and the standard deviations were lower than the ones prior to experiment, especially for 2nd semester, where the difference in standard deviation between the pre- and post-experimental assessments was 6.794. This suggests that following systematic training, there was a notable enhancement in the students' English-speaking proficiency, and their scores exhibited greater concentration compared to before. **Table 6 Table 7**

Table 8. Paired Sample Test of the Experimental Group for 1st semester (source: this study)

| Paired Differences | | | | | | | | | |
|--------------------|----------------------|--------|-------------------|--------------------|--|--------|--------|----|--------------------|
| Pair1 | Pre-exp- Post-exp | | | | 95% Confidence Interval of the Difference | | | | |
| | | Mean | Std. Deviation | Std. Error Mean | Lower | Upper | t | df | Sig (2- tailed) |
| | | -7.839 | 10.770 | 1.439 | -10.723 | -4.955 | -5.447 | 55 | .000 |

Table 9. Paired Sample Test of the Experimental Group for 2nd semester (source: this study)

| Paired Differences | | | | | | | | | |
|--------------------|----------------------|---------|----------------|-----------------|---|---------|---|----|----------------|
| Pair1 | Pre-exp- Post-exp | | | | 95% Confidence Interval of the Difference | | t | df | Sig (2-tailed) |
| | | Mean | Std. Deviation | Std. Error Mean | Lower | Upper | | | |
| | | -14.543 | 11.392 | 1.926 | -18.456 | -10.629 | | | |

For both semesters, the two-tailed T-test probability for the experimental group was 0.000 that falls below 0.05, signifying a statistically notable difference. This indicates that the English speaking proficiency scores of students in the experimental group showed significant improvement over the two semesters. **Table 8 Table 9**

Paired Samples T-Test for Assessments Prior to and After Experiment Within the Control Group

Table 10. Paired Samples Data of the Control Group for 1st semester (source: this study)

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|----------|-------|----|----------------|-----------------|
| Pair 1 | Pre-exp | 74.17 | 59 | 8.124 | 1.058 |
| | Post-exp | 75.64 | 59 | 11.321 | 1.474 |

Table 11. Paired Samples Data of the Control Group for 2nd semester (source: this study)

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|----------|-------|----|----------------|-----------------|
| Pair 1 | Pre-exp | 72.82 | 33 | 13.609 | 2.369 |
| | Post-exp | 85.24 | 33 | 6.562 | 1.142 |

In the first semester, the distinction between the pre- and post-experimental assessments mean scores of the control group was 1.47, with little difference in mean scores. **Table 10**

In the second semester, the post-experimental test mean score was 12.42 higher than the pre-experimental test mean score, a significant difference, indicating that the non-POA control group students experienced a significant improvement in English speaking proficiency following a semester of study. **Table 11**

Table 12. Paired Sample Test of the Control Group for 1st semester (source: this study)

| Paired Differences | | | | | | | | | |
|--------------------|----------------------|--------|----------------|-----------------|---|-------|---|----|----------------|
| Pair1 | Pre-exp- Post-exp | | | | 95% Confidence Interval of the Difference | | t | df | Sig (2-tailed) |
| | | Mean | Std. Deviation | Std. Error Mean | Lower | Upper | | | |
| | | -1.475 | 13.245 | 1.724 | -4.926 | 1.977 | | | |

For the first semester, the two-tailed T-test probability was 0.396, which exceeds 0.05, signifying no statistically significant distinction. This means that the English speaking proficiency scores of the control group students did not significantly improve.

Table 12

Table 13. Paired Sample Test of the Control Group for 2nd semester (source: this study)

| Paired Differences | | | | | | | | | |
|--------------------|----------------------|---------|----------------|-----------------|--------------------------------|--------|--------|----|----------------|
| Pair1 | Pre-exp- Post-exp | | | | 95% Confidence Interval of the | | | | |
| | | Mean | Std. Deviation | Std. Error Mean | Lower | Upper | t | df | Sig (2-tailed) |
| | | -12.424 | 14.513 | 2.526 | -17.570 | -7.278 | -4.918 | 32 | .000 |

For the second semester, the two-tailed T-test probability was 0.000, which falls below 0.05, signifying a statistically significant distinction. This means that the English speaking proficiency scores of the control group students significantly improved. To address the significant improvement in oral proficiency scores among the control group students in the second semester, whether there is a significant difference in the improvement of oral abilities between the two groups of students in the second semester, and whether to accept the H_1 hypothesis, will depend on the subsequent independent sample T-test of the post-tests between the two groups. **Table 13**

Independent Samples T-Test for Assessments After Experiment of Two Groups

Table 14. Group Data of Assessments after Experiment for 1st semester (source: this study)

| | group | N | Mean | Std. Deviation | Std. Error Mean |
|----------------------|-------|----|-------|----------------|-----------------|
| Post-exp test scores | 1 | 56 | 83.18 | 8.104 | 1.083 |
| | 2 | 59 | 75.64 | 11.321 | 1.474 |

Table 15. Group Data of Assessments after Experiment for 2nd semester (source: this study)

| | group | N | Mean | Std. Deviation | Std. Error Mean |
|----------------------|-------|-----|-------|----------------|-----------------|
| Post-exp test scores | 1 | 35 | 88.23 | 4.052 | .685 |
| | 2 | 333 | 85.24 | 6.562 | 1.142 |

For both the first and second semesters, the mean differences between the experimental group and the control group were 7.54 and 2.99, respectively, with the experimental group scoring higher than the control group in both semesters; at the same time, the standard deviations for the experimental group were lower than those for the control group in both semesters, indicating that the post-experimental assessment scores of the experimental group were more concentrated. **Table 14 Table 15**

Table 16. Levene’s Test for Equality of Variances for Assessments after Experiment for 1st semester (source: this study)

| Levene’s Test for Equality of Variances | | | | t-test for Equality of Means | | |
|---|-----------------------------|-------|------|------------------------------|---------|----------------|
| | | F | Sig | t | df | Sig (2-tailed) |
| Post-exp test scores | Equal variances assumed | 4.921 | .029 | 4.085 | 113 | .000 |
| | Equal variances not assumed | | | 4.120 | 105.198 | .000 |

The conclusion of the homogeneity test for the first semester indicates a statistically significant difference between the two groups. The mean score of the experimental group was 83.18, and that of the control group was 75.64, with an average difference of 7.54, which is a considerable gap, thus indicating a significant distinction in the speaking proficiency levels between the two groups of students. This indicates that following a semester of oral instruction informed by POA theory, the experimental group students' oral proficiency scores improved, achieving good results. **Table 16**

Table 17. Levene’s Test for Equality of Variances for Assessments after Experiment for 2nd semester (source: this study)

| Levene’s Test for Equality of Variances | | | | t-test for Equality of Means | | |
|---|-----------------------------|-------|------|------------------------------|--------|----------------|
| | | F | Sig | t | df | Sig (2-tailed) |
| Post-exp test scores | Equal variances assumed | 1.921 | .170 | 2.272 | 66 | .026 |
| | Equal variances not assumed | | | 2.242 | 52.727 | .029 |

The conclusion of the homogeneity test for the second semester is $F=1.921$, $P=0.170 > 0.05$, with a two-tailed test probability $P=0.026 < 0.05$, indicating a statistically significant difference between the two groups. The mean score of the experimental group was 88.23, and that of the control group was 85.24, with an average difference of 2.99, which is not a small gap, thus indicating a significant distinction in the speaking proficiency levels between the two groups of students. This indicates that following a semester of oral instruction informed by POA theory, the oral proficiency scores of the experimental group students improved, achieving good results; although the control group's scores also significantly improved, the extent of improvement was not as high as that of the experimental group. **Table 17**

Considering all the data, subsequent to performing two independent sample T-tests among groups and two paired sample T-tests within groups for every semester, H_0 was ultimately rejected and H_1 accepted, indicating that the blended research model informed by POA theory can enhance pupils' English speaking competence.

5 Conclusions

In the research conducted over two semesters, by comparing the performance of the two groups of students under different research methods, it was found that the blended research model employing the Production-Oriented Approach (POA) significantly enhanced college English oral proficiency. This effectiveness is attributed to the core elements of POA theory: output-driven, input facilitation, output, and a diversified evaluation system. These elements together constructed an efficient learning system that not only boosted students' motivation but also stimulated their initiative to learn, making the learning process more systematic.

Certainly, in the research guided by POA theory over these two semesters, there remain some areas for improvement. This includes the specific implementation methods and timing of output-driven, input facilitation, and output activities, as well as the precise extraction of key vocabulary and sentence patterns by teachers during the input facilitation stage; teachers should not only help students overcome difficulties in language communication but also cultivate students' perception of English culture, helping them bridge cultural communication barriers^[9]; the most crucial aspect of a blended course is the course resources, the quality of which will determine the level of students' English learning^[10]. In future oral research practices, based on existing experiences and lessons, the various components under the guidance of POA theory will continue to be optimized. Course resources require the cooperation of both the course creators and users to gradually improve; teachers must fully understand the course content and be able to accurately extract key vocabulary and sentence patterns related to the themes of each unit, making them an effective complement to online resources; for learning outcomes, besides timely monitoring of learning situations, it is also necessary to establish a reasonable and diversified evaluation system, perfecting the Teacher-Student Cooperative Assessment (TSCA).

Empirical research on enhancing college English oral proficiency based on POA theory should adapt to the developments and characteristics of the era, considering both instrumental and humanistic aspects. It aims to cultivate the ability of college students, graduate students, and vocational college students to use English orally appropriately and effectively in academic, daily life, and future professional contexts, to meet the needs of the nation, society, educational institutions, and individual development.

References

1. Ministry of Education Higher Education Department College Foreign Language Teaching Steering Committee. (2020) College English Teaching Guide (2020 Edition). Higher Education Press, Beijing.
2. Denis G., Isabelle V.C., Juan C.F., Kim L. P. H., Maria J. R.T. (2022) Integrated Model for Comprehensive Digital Education Platforms. In: 2022 IEEE Global Engineering Education Conference (EDUCON). Tunis. pp. 1587-1593. DOI: 10.1109/EDUCON52537.2022.9766795

3. He Kekang. (2004) New Developments in Educational Technology Theory from the Perspective of Blended Learning. *J. Information Technology Education in Primary and Secondary Schools*, 4: 21.
4. D. A. Junio and A. A. Bandala. (2019) Blended Learning Approach to Teaching Oral Communication: Video Blogging in ESL Classroom. In: 2019 IEEE 11th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM), Laoag, Philippines. pp. 1-5. doi: 10.1109/HNICEM48295.2019.9072816.
5. Wen Qiufang. (2021) Production-Oriented Approach: Exploring Theoretical Innovation in Chinese Foreign Language Education. Foreign Language Teaching and Research Press.
6. Liu Kun, Rao Hui. (2021) Research on the Blended Teaching Model of College English Oral Skills Based on the Production-Oriented Approach *J. Overseas English.*, 12: 37-38.
7. S. Sanchez-Gordon and S. Luján-Mora. (2015) Accessible blended learning for non-native speakers using MOOCs. In: 2015 International Conference on Interactive Collaborative and Blended Learning (ICBL), Mexico City, Mexico. pp. 19-24. doi: 10.1109/ICBL.2015.7387645.
8. Zhou Hong, Liu Li. (2016) Research on the Application of Blended Learning Theory in Graduate Academic English Teaching. *J. Teaching in Forest Regions.*, 5: 39.
9. Qin Qin. (2018) The Application of Blended Learning Mode Based on Online Teaching Platforms in English Listening and Speaking Instruction. *J. Overseas English.*, 11: 52.
10. Miao Lizhu. (2021) Reflection and Prospects on College English Teaching under the Deep Blended Learning of MOOC/SPOC. *J. Overseas English.*, 16: 147.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

