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## RESEARCH ARTICLE

# Applying the Production-Oriented Approach to Extended Reading in Senior High School English

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## ABSTRACT

Since the introduction of the Production-Oriented Approach (POA) by Wen Qiufang, numerous studies have explored its teaching theory and pedagogical potential in English as a Foreign Language (EFL) contexts. However, despite these academic advancements, its application in senior high school English Read to Learn (RTL) extended reading classes is still relatively limited. This study investigates the effectiveness of POA-based RTL extended reading to address common issues in Chinese high school English classrooms, such as low student engagement, teacher-centered instruction and insufficient reading interest. A 12-week experiment was conducted with two Grade 11 classes (N=89) from Wuxi No. 1 Girls High School. Research instruments included tests and questionnaires before and after the experiment. Quantitative data were analyzed using descriptive and comparative statistics. Results indicate that POA-based RTL extended reading classes improved students' reading achievement, interest, attitudes, and confidence compared to traditional methods. The experimental group's mean score increased from 34.73 to 37.15, while the control group showed little change (35.56 to 34.98). Questionnaire data revealed substantial improvement in the experimental group's reading interest, attitudes, and confidence. This study provides empirical evidence for the application of POA in high school RTL extended reading and provides implications for constructing effective extended reading classrooms.

## KEYWORDS

Production-Oriented Approach; Extended Reading; High School English Reading; Reading Achievement; Reading Motivation

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## 1. Introduction

This chapter introduces research background and objectives, and highlights its significance.

### 1.1 Research Background

The General High School English Curriculum Standards (2017 Edition, Revised 2020) emphasize cultivating students' core competencies in English, including language proficiency, cultural awareness, and learning capabilities through practical, communicative language pedagogy. Recent curriculum reforms urgently advocates a shift from traditional "Learn to Read" instruction to "Read to Learn" (RTL) teaching that transform language acquisition into competency development through meaningful textual engagement. However, current classrooms often remained teacher-centered, focusing solely on vocabulary and grammar skills. Such instruction induces low student engagement and fails to improve students' reading motivation.

The Production-Oriented Approach (POA), proposed by Wen Qiufang (2015, 2017, 2018), offers a suitable framework for Chinese EFL education. Rooted in Krashen's Input Hypothesis and Swain's Output Hypothesis, POA integrates language skills through real-life productive tasks, emphasizing purposeful output that bridges classroom knowledge with communication needs.

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While POA has been widely applied and studied in Chinese universities (Li & Li, 2020; Sun, 2020), its use in high school reading contexts is limited. Previous research has focused more on writing, speaking, and listening skills with less empirical research for its effectiveness in secondary extended reading instruction. This study aims to fill this lacuna by exploring the application and effectiveness of POA-based RTL extended reading on students' reading achievement and motivation.

## **1.2 Research Significance**

The study holds both theoretical and practical significance. Theoretical significance lies in expanding POA's application scope beyond higher education. Since Wen Qiufang's proposal, Chinese scholars have extensively studied POA in university settings, but its potential in secondary education remained to be explored. This study fills the research gap by adapting POA to the secondary education context, thus expanding the application range in foreign language teaching at the basic education level. From a practical standpoint, the study's three-phase instructional design directly responds to the needs of the contemporary classrooms. The findings could not only inform teachers of actionable solutions for balancing language input and output in RTL extended reading courses, but also ultimately contribute to the advancement of English language education in senior high schools.

## **2. Literature Review**

This chapter reviews the Production-Oriented Approach (POA), outlining its origins, theoretical framework, and current research status both in China and abroad. It also examines reading motivation and extended reading.

### **2.1 Theoretical Foundations**

Krashen's Input Hypothesis, proposed in the 1980s, emphasizes the role of comprehensible input in second language acquisition (SLA). The hypothesis suggests that language input should be slightly beyond a learner's current proficiency level, represented by the formula 'i+1' (Krashen, 1982). However, critics like Swain (1985) argue that the hypothesis underestimates the role of output in language learning. While input provides knowledge, producing language helps learners practice and internalize structures. Despite criticisms, the Input Hypothesis holds crucial influence in SLA, which incorporates input and output to cultivate purposeful language use (Wen, 2020).

Swain's Output Hypothesis (1985, 1995) complements Krashen's Input Hypothesis by highlighting the role of comprehensible output. Through feedback, they can test and refine their language use (Swain, 1985, 1995). Output is needed for the consolidation and utilization of the language (Swain & Lapkin, 1996). Nunan (2004) confirmed task-based pedagogical activities as effective triggers inducing meaningful output. Besides, Output Hypothesis guides POA of early stage of language output, providing clear expectation of shortcoming in learner's knowledge to pragmatically interact for communication and enhancing motivational salience (Wen, 2020).

### **2.2 Overview of the Production-Oriented Approach**

The Production-Oriented Approach (POA) was proposed by Wen (2015) to address the disconnect between language input and productive skills in language teaching in China. Its development occurred in four phases: the Output-Driven Hypothesis (Wen, 2008) emphasizing the crucial role of the output process in language learning, the first official version (2015) providing a comprehensive theoretical framework, the 2017 refinement further validating theory and teaching practices in classrooms, the 2019 new version enriching the methodology to meet emerging classroom dilemmas.

POA operates through three interconnected principles: learning-centered principle, learning-using integration principle and whole-person education principle (Wen, 2016). Its three teaching hypotheses are output-driven hypothesis, input-enabling hypothesis and selective-learning hypothesis. The implementation of POA's framework follows a cyclical three-phase process: motivating, enabling and assessing, emphasizing the alignment of input and output, task-oriented learning and iterative improvement (Wen, 2018).

In China, POA has been summarized by means of overall studies on the theoretical foundations, teaching practices, and assessment methodologies (Wen, 2015, 2017, 2018; Qiu, 2020; Zhang, 2020). In practical applications, Li and Li (2020) applies POA to college English reading and writing courses, while Lu (2023) integrates ideological and political education into high school English reading using POA framework. Empirical studies demonstrate the effectiveness of POA in enhancing students' engagement and learning outcomes (Zhang, 2020; Ma, 2022). Assessment innovations include teacher-student collaborative assessment (Sun, 2020; Wen, 2016).

international studies on this approach are still in their early phases. Ellis (2017) points out the similarities in theoretical foundations between POA and the Task-Based Language Teaching. Matsuda (2017) emphasize the global relevance of POA while

Giancola et al. (2022) link cognitive style and creativity to POA benefits. Furthermore, Huang (2022) confirms the adaptability of POA across different instructional circumstances. Though international research is still relatively limited, findings suggest POA has strong potential for broader EFL application.

### **2.3 Reading Motivation and Extended Reading**

Reading interest, attitudes, and confidence are widely acknowledged as pivotal affective constructs shaping learners' motivation in reading. Interest refers to learners' intrinsic enjoyment and curiosity toward texts, fostering sustained reading and deeper comprehension (Schiefele, 1999). Positive attitudes, reflecting beliefs and feelings about reading, are associated to greater persistence and willingness to participate (McKenna et al., 2012). Reading confidence, or self-efficacy, refers to learners' belief in their ability to complete reading tasks successfully (Bandura, 1997). Higher self-efficacy has been associated with greater persistence, the use of effective strategies, and enhanced reading achievement (Talsma et al., 2018).

Guthrie and Wigfield's (2000) engagement model underscores the correspondence of interest, attitudes, and confidence in cultivating reading motivation. In extended reading contexts, where learners are required to handle more complex texts, these affective factors become particularly striking. Pedagogical approaches such as the Production-Oriented Approach, which integrates purposeful tasks, authentic communicative contexts, and opportunities for output, can foster these affective dimensions by heightening task relevance, providing scaffolding support, and enabling learners to achieve a sense of accomplishment.

## **3. Research Methodology**

This chapter mainly focuses on the methodology of the research which includes research questions, the selection and grouping of participants, the design of research instruments and the procedures of the experiment.

### **3.1 Research Questions**

This research integrates POA into the RTL extended reading instruction and seeks to address the following two research questions:

- 1) What effect does RTL extended reading instruction in high school English, guided by POA, have on students' reading motivation, specifically their interest, attitudes, and confidence?
- 2) What effect does high school English RTL extended reading instruction guided by POA have on students' reading achievement?

### **3.2 Participants and Grouping**

Two parallel Grade 11 classes (N=89) from Wuxi No.1 Girls High School participated in the study. At this stage, students generally have stable language abilities suitable for advanced learning activities. Class 5 (n=41) served as the control group and received traditional instruction, while Class 6 (n=48) formed the experimental group and received POA-based extended reading lessons. Neither group had prior exposure to specialized methodologies, and teaching materials were remained consistent. To ensure validity, participants were unaware of the experiment, and all other conditions were kept equivalent.

### **3.3 Research Instruments**

#### **3.3.1 Tests**

Two reading tests were used to assess students' reading achievement. The pre-experimental test measured initial achievement, while the post-experimental test evaluated potential improvement after POA-based instruction. Both tests had identical formats and quantities, with comparable difficulty levels. To ensure validity, test items matched the curriculum content covered during the experiment. Each test comprised two sections: four comprehension passages with 15 questions and one passage with five blank-filling items. Each question was given 2.5 points, for a total of 50 points. Some materials were adapted from professionally contextualized passages of standard city level exams. Test papers were reviewed by experienced high school English teachers to confirm validity and reliability. The two sets were randomly numbered as Test I (pre-experimental test) and Test II (post-experimental test).

#### **3.3.2 Questionnaires**

Two questionnaires were used in this study: Questionnaire I and Questionnaire II. Before the experiment, Questionnaire I examined possible differences in the two groups' initial reading interest, attitudes, and confidence. After the experiment, Questionnaire II assessed changes in these three aspects after integrating POA into RTL extended reading. Both questionnaires were adapted from Wen Qiufang's pre-survey and Wigfield and Guthrie's Reading Motivation Scale to ensure reliability and validity. Questionnaire II mirrored Questionnaire I but included items recomposed from positive to negative to reduce response bias. Each questionnaire contained 12 items: Questions 3, 5, 7, 9 and 11 measured reading interest; Questions 1, 6, 8, and 12

examined attitudes toward RTL extended reading; and Questions 2, 4, and 10 assessed reading confidence. Students responded on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), enabling structured data collection.

### 3.3.3 SPSS 31.0

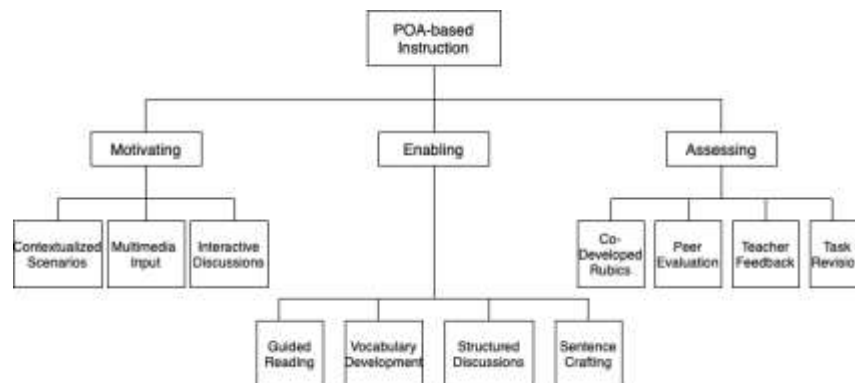
SPSS (version 31.0) was used for data processing and analysis. Test scores and questionnaire data from both groups were compiled and analyzed. Questionnaire reliability was examined using Cronbach's alpha to ensure internal consistency. Independent-sample t-tests were conducted to compare pre- and post-test results between groups, while paired-sample t-tests assessed within-group changes. All results were presented in tables to support discussion.

### 3.4 Experimental Procedures

Before the experiment, Test I and Questionnaire I were administered to both groups. Test I involved all 89 students, who completed the paper within 40 minutes under standard exam conditions. Papers were collected immediately and graded by the same teacher using the official answer key. Questionnaire I was administered to assess students' preliminary reading motivation. To minimize the impact of test-related anxiety, Questionnaire I was conducted three days after Test I, before the students were informed of their test results. A total of 89 students from both groups completed the questionnaire independently within ten minutes. After inspection, 89 copies were valid.

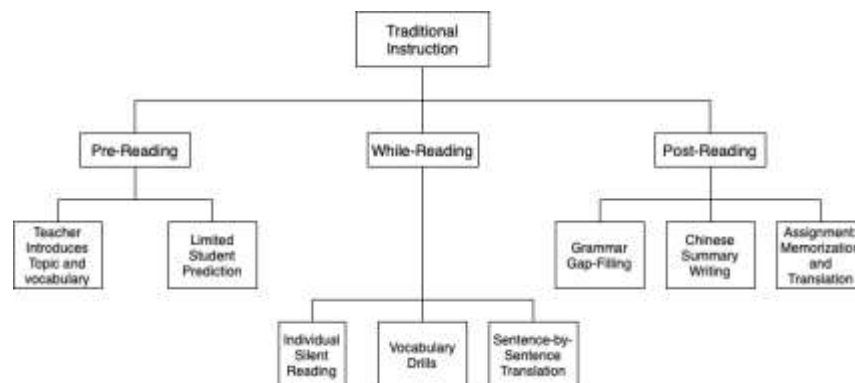
The experimental period lasted 20 class hours. The instructional activities in the experimental class were implemented in accordance with the guidance of POA, and the students followed the teaching procedures shown in Figure 3.1.

**Figure 3.1 POA-Based Extended Reading Instruction Model**



The control group was taught using a traditional model (Figure 3.2), consisting of Pre-reading, While-reading, and Post-reading phases. This teaching method mainly focused on reading comprehension questions and vocabulary explanations, with limited opportunities for students to take productive tasks or interactive activities.

**Figure 3.2 Traditional Extended Reading Instruction Model**



After the experiment, all students took Test II and completed Questionnaire II. In view of validity and reliability of the data, the process and conditions for conducting Test II and Questionnaire II were kept the same as those in the pre-experiment stage. Test II evaluated changes in reading achievement, and was graded by the same teacher with the same marking criteria. Three days later, Questionnaire II was conducted to measure changes in reading interest, attitudes, and confidence. All 89 copies were deemed valid.

#### 4. Data Analysis and Main Findings

This chapter presents the statistical analysis of data and reports the key findings from the study.

##### 4.1 Questionnaire Data Analysis

To assess any shifts in reading motivation in both groups throughout the experiment, Questionnaire I and Questionnaire II were employed to students before and after intervention. Collected data were analyzed by SPSS 31.0.

To ensure the internal consistency of the questionnaires, Cronbach's alpha was calculated for the overall scale and its branches. A Cronbach's alpha value above 0.70 was considered acceptable for this study. The results are shown in Table 4.1.

**Table 4.1 Reliability Statistics**

| Questionnaires   | Cronbach's alpha | Number of Item |
|------------------|------------------|----------------|
| Questionnaire I  | .743             | 12             |
| Questionnaire II | .847             | 12             |

As shown in Table 4.1, Cronbach's alpha values for Questionnaire I (0.743) and Questionnaire II (0.847) demonstrate internal consistency, confirming the reliability for both questionnaires.

Descriptive statistics and independent-samples t-tests were conducted for Questionnaire I and Questionnaire II in both the experimental and control groups. The results for Questionnaire I are shown in Table 4.2 (descriptive statistics) and Table 4.3 (t-test).

**Table 4.2 Descriptive Statistics Results of Questionnaire I Values**

| Groups             | Scale              | N  | Mean   | Minimum | Maximum | Std. deviation |
|--------------------|--------------------|----|--------|---------|---------|----------------|
| Experimental Group | Reading Interest   | 48 | 2.9333 | 2.00    | 4.60    | .58395         |
|                    | Reading Attitudes  | 48 | 3.0521 | 2.00    | 4.50    | .62730         |
|                    | Reading Confidence | 48 | 2.9792 | 1.67    | 4.67    | .67515         |
|                    | Overall            | 48 | 2.9844 | 2.00    | 4.08    | .45013         |
| Control Group      | Reading Interest   | 41 | 3.0683 | 1.80    | 4.00    | .54334         |
|                    | Reading Attitudes  | 41 | 2.9939 | 2.00    | 4.50    | .56593         |
|                    | Reading Confidence | 41 | 3.0081 | 1.67    | 4.00    | .57003         |
|                    | Overall            | 41 | 3.0285 | 2.25    | 4.08    | .45553         |

As shown in Table 4.2, the experimental group ( $M = 2.98$ ,  $SD = 0.45$ ) obtained a slightly lower mean value in Questionnaire I than the control group ( $M = 3.03$ ,  $SD = 0.46$ ), indicating marginally weaker reading motivation toward RTL extended reading instruction before the experiment. The standard deviations indicate that the dispersion of scores within the two groups was comparable, implying minor variation within individuals. With respect to Reading Interest (Questions 3, 5, 7, 9, 11), the experimental group ( $M = 2.93$ ) and the control group ( $M = 3.06$ ) both scored around 3 ("uncertain"), indicating only moderate receptiveness to RTL extended reading and limited interest. In the scale of Attitudes (Questions 1, 6, 8, 12), the experimental group ( $M = 3.05$ ) and the control group ( $M = 2.99$ ) reported means approximately at the midpoint of the scale, reflecting a generally neutral stance toward RTL extended reading instruction. Referring to Reading Confidence (Questions 2, 4, 10), the experimental group ( $M = 2.98$ ) and the control group ( $M = 3.01$ ) both scored closely to 3 ("uncertain"), suggesting hesitation of their own English reading ability.

**Table 4.3 Independent-Samples T-Test Results of Questionnaire I Values**

| Scale | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
|-------|---|----|-----------------|-----------------|-----------------------|
|-------|---|----|-----------------|-----------------|-----------------------|

|                    |                             |        |        |      |         |        |
|--------------------|-----------------------------|--------|--------|------|---------|--------|
| Reading Interest   | Equal variances assumed     | -1.122 | 87     | .265 | -.13496 | .12029 |
|                    | Equal variances not assumed | -1.128 | 86.339 | .262 | -.13496 | .11960 |
| Reading Attitudes  | Equal variances assumed     | .456   | 87     | .649 | .05818  | .12757 |
|                    | Equal variances not assumed | .460   | 86.723 | .647 | .05818  | .12653 |
| Reading Confidence | Equal variances assumed     | -.217  | 87     | .829 | -.02896 | .13376 |
|                    | Equal variances not assumed | -.219  | 86.992 | .827 | -.02896 | .13199 |
| Overall            | Equal variances assumed     | -.458  | 87     | .648 | -.04408 | .09625 |
|                    | Equal variances not assumed | -.458  | 84.514 | .648 | -.04408 | .09634 |

The independent-samples t-test results in Table 4.3 further confirm this similarity. Overall, the difference between the two groups was not statistically significant ( $t = -0.458$ ,  $p = 0.648 > 0.05$ ), suggesting that there was no remarkable differences in their questionnaire values before the experiment. This ensures that both groups started the experiment on comparable levels of RTL extended reading motivation, thus increasing the validity of prior comparisons.

After 12-week teaching intervention, Questionnaire II was administered to evaluate possible disparities in students' reading motivation. The results are shown in Table 4.4 and Table 4.5.

**Table 4.4 Descriptive Statistics of Questionnaire II Values**

| Groups             | Scale              | N  | Mean   | Minimum | Maximum | Std. deviation |
|--------------------|--------------------|----|--------|---------|---------|----------------|
| Experimental Group | Reading Interest   | 48 | 3.5417 | 2.40    | 4.60    | .59496         |
|                    | Reading Attitudes  | 48 | 3.5990 | 2.25    | 4.50    | .58967         |
|                    | Reading Confidence | 48 | 3.6875 | 2.33    | 4.67    | .65017         |
|                    | Overall            | 48 | 3.5972 | 2.42    | 4.50    | .53906         |
| Control Group      | Reading Interest   | 41 | 2.9854 | 1.40    | 4.20    | .66391         |
|                    | Reading Attitudes  | 41 | 3.0427 | 1.50    | 4.25    | .62225         |
|                    | Reading Confidence | 41 | 2.9106 | 1.67    | 3.67    | .57264         |
|                    | Overall            | 41 | 2.9858 | 2.17    | 4.08    | .46056         |

As shown in Table 4.4, the experimental group ( $M = 3.60$ ,  $SD = 0.54$ ) achieved notably higher mean values than the control group ( $M = 2.99$ ,  $SD = 0.46$ ) in Questionnaire II. This indicates an improvement in the experimental group's reading interest, attitudes, and confidence of reading motivation after the POA-based extended reading instruction, compared with the control group. Questions 3, 5, 7, 9 and 11 measured students' reading interest. The experimental group reported a mean of 3.54, between 3 ("uncertain") and 4 ("rather agree"), suggesting moderately positive interest in RTL extended reading. In contrast, the control group's mean was 2.99, between 2 ("rather disagree") and 3 ("uncertain"), reflecting a largely neutral stance. Questions 1, 6, 8, and 12 examined students' attitudes toward RTL extended reading instruction. The experimental group obtained a mean of 3.60, while the control group scored 3.04. Notably, the experimental group's mean exceeded 3.5 and approached 4, showing a more favorable evaluation of POA-based instruction. Questions 2, 4 and 10 assessed students' reading confidence. The experimental group averaged 3.69, between 3 ("uncertain") and 4 ("rather agree"), suggesting relatively strong confidence. The control group, however, scored 2.91, indicating comparatively lower confidence in their reading ability.

**Table 4.5 Independent-Samples T Test of Questionnaire II Values**

| Scale              |                             | t     | df     | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
|--------------------|-----------------------------|-------|--------|-----------------|-----------------|-----------------------|
| Reading Interest   | Equal variances assumed     | 4.168 | 87     | <.001           | .55630          | .13346                |
|                    | Equal variances not assumed | 4.132 | 81.186 | <.001           | .55630          | .13463                |
| Reading Attitudes  | Equal variances assumed     | 4.325 | 87     | <.001           | .55628          | .12863                |
|                    | Equal variances not assumed | 4.306 | 83.225 | <.001           | .55628          | .12918                |
| Reading Confidence | Equal variances assumed     | 5.933 | 87     | <.001           | .77693          | .13094                |
|                    | Equal variances not assumed | 5.993 | 86.909 | <.001           | .77693          | .12963                |
| Overall            | Equal variances assumed     | 5.699 | 87     | <.001           | .61145          | .10728                |
|                    | Equal variances not assumed | 5.771 | 87.000 | <.001           | .61145          | .10596                |

The independent-samples t-test results in Table 4.5 reveal substantial differences between the two groups ( $t = 5.70$ ,  $p < 0.01$ ), demonstrating that the experimental group outperformed the control group in Questionnaire II. This suggests that POA-based RTL extended reading instruction effectively enhanced students' reading motivation in the experimental group, while the control group maintained unchanged.

A paired-samples t-test was conducted to compare students' questionnaire values before and after the experiment within each group. The results are shown in Table 4.6.

**Table 4.6 Paired-Samples T Test Results of Questionnaires**

| Experimental Group      |                          |        |       | Control Group           |                          |      |      |
|-------------------------|--------------------------|--------|-------|-------------------------|--------------------------|------|------|
| Mean of Questionnaire I | Mean of Questionnaire II | t      | Sig.  | Mean of Questionnaire I | Mean of Questionnaire II | t    | Sig. |
| 2.9844                  | 3.5972                   | -5.419 | <.001 | 3.0285                  | 2.9858                   | .504 | .617 |

In the experimental group, the mean values of questionnaires increased from 2.98 (SD = 0.45) in Questionnaire I to 3.60 (SD = 0.54) in Questionnaire II, while in the control group, the mean values slightly decreased from 3.02 (SD=0.46) to 2.99 (SD = 0.46). The paired-samples t-test revealed a statistically significant increase in the experimental group's values ( $t = -5.419$ ,  $p < .001$ ). In contrast, the control group's difference was not statistically significant ( $t = .504$ ,  $p = .617$ ). These results indicate a marked improvement in the experimental group compared to the control group after the intervention.

In summary, based on the aforementioned data, the POA-based RTL extended reading instruction exerted a positive influence on students' reading interest, attitudes, and reading confidence, which means POA-based RTL extended reading instruction can improve students' reading motivation, and thus the first research question is addressed.

#### 4.2 Test Results Analysis

To evaluate the effects of POA-based instruction on students' reading achievement, Test I and Test II were applied to both groups before and after the experiment. Test scores were analyzed by SPSS 31.0. The descriptive statistics are shown in Table 4.7.

**Table 4.7 Descriptive Statistics Results of Test Scores**

| Experimental Group |    |         |         |        |                | Control Group |    |         |         |        |                |
|--------------------|----|---------|---------|--------|----------------|---------------|----|---------|---------|--------|----------------|
| Tests              | N  | Maximum | Minimum | Mean   | Std. Deviation | Tests         | N  | Maximum | Minimum | Mean   | Std. Deviation |
| Test I             | 48 | 42.5    | 25.5    | 34.729 | 4.2526         | Test I        | 41 | 45.0    | 25.5    | 35.561 | 3.9894         |
| Test II            | 48 | 44.0    | 31.0    | 37.146 | 3.4717         | Test II       | 41 | 44.0    | 25.5    | 34.976 | 4.0681         |

As shown in Table 4.7, in Test I, the experimental group achieved a marginally lower mean score of 34.73 (SD = 4.25) compared to the control group ( $M = 35.56$ ,  $SD = 3.99$ ). However, after the 10-week teaching instruction, the experimental group's mean score increased to 37.15 (SD = 3.47), demonstrating a marked improvement in their reading achievement, whereas the control group's mean score remained relatively stable at 34.98 (SD = 4.07).

Table 4.8 demonstrates the initial reading achievement of both groups prior to the experiment, showing comparable starting points between the two groups.

**Table 4.8 Independent-Samples T-Test Results of Test I Scores**

|                             | t     | df     | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
|-----------------------------|-------|--------|-----------------|-----------------|-----------------------|
| Equal variances assumed     | -.946 | 87     | .347            | -.8313          | .8791                 |
| Equal variances not assumed | -.951 | 86.211 | .344            | -.8313          | .8746                 |

Table 4.8 displays the independent-samples t-test results of both groups in Test I. The results ( $t = -0.946$ ,  $p = .347 > 0.05$ ) indicate that there is no statistically significant difference in the two groups' overall reading achievement. This minimizes the influence of any big initial reading achievement differences on the experimental findings.

As shown in table 4.9, the results of both groups after the experiment reported a manifest difference, supporting a plausible influence on students' reading achievement.

**Table 4.9 Independent-Samples T-Test Results of Test II Scores**

|  | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
|--|---|----|-----------------|-----------------|-----------------------|
|--|---|----|-----------------|-----------------|-----------------------|

|                             |       |        |      |        |       |
|-----------------------------|-------|--------|------|--------|-------|
| Equal variances assumed     | 2.716 | 87     | .008 | 2.1702 | .7991 |
| Equal variances not assumed | 2.682 | 79.171 | .009 | 2.1702 | .8092 |

The independent-samples t-test results of Test II scores implied that the difference between the two groups in Test II was statistically significant ( $t = 2.716$ ,  $p = .008$ ). The marked difference between two groups suggests that students in the experimental group improved their reading achievement, whereas the control group did not exhibit comparable progress.

**Table 4.10 Paired-Samples T Test Results of Tests**

| Experimental Group |                 |        |       | Control Group  |                 |       |      |
|--------------------|-----------------|--------|-------|----------------|-----------------|-------|------|
| Mean of Test I     | Mean of Test II | t      | Sig.  | Mean of Test I | Mean of Test II | t     | Sig. |
| 34.729             | 37.146          | -5.692 | <.001 | 35.561         | 34.976          | 1.455 | .153 |

In the experimental group, the mean scores increased from 34.73 (SD = 4.25) in Test I to 37.15 (SD = 3.47) in Test II, while in the control group, the mean scores slightly decreased from 35.56 (SD = 3.99) to 34.98 (SD = 4.07) during the experiment. The paired-samples t-test results indicated a statistically significant increase in the experimental group's scores ( $t = -5.692$ ,  $p < .001$ ). In contrast, the control group's difference was not statistically significant ( $t = 1.455$ ,  $p = .153$ ). The results supports the efficacy of POA-based instruction in improving students' reading achievement in the experimental group.

In summary, results suggest that POA-based instruction had a notably positive impact on students' reading achievement, whereas the traditional method did not produce comparable influence. Thus, the second research question is addressed.

## 5. Conclusion

The study investigates the application of the Production-Oriented Approach (POA) in high school English RTL extended reading instruction to explore its influence on students' reading achievement and motivation. Through the incorporation of the three phases of POA, a more collaborative and production-oriented learning environment was created. During the experiment, students in the experimental group exhibited higher reading achievement and better reading motivation. The study reveals the significance of POA-based extended reading instruction in the high school education and the potential to enrich the teaching method for RTL extended reading.

Although the effects of applying POA in RTL extended reading lessons in the high school for 12 weeks were relatively positive, some limitations need to be acknowledged. Firstly, two classes comprising 89 girls (Grade 11) are randomly selected from one high school (Wuxi No.1 Girls High School). The limited number of participants and their single gender representation reduce the universality of the findings. Secondly, the experiment span was only 12 weeks, which was insufficient to investigate the long-term impact of POA on students' reading achievement and reading emotivation. Moreover, POA is still developing and being improved, meaning the application of POA in high school English RTL extended reading lessons is exploratory, and open to further updates.

In conclusion, to compensate for the above deficiencies and for pursuing further research on POA in RTL extended reading instruction, following setbacks need to be handled, including expanding the sample size, elongating experiments and experimental design, etc. Future research may focus especially on the stability of POA effect on discrete language skills as well as its applicability in a variety of educational level.

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