

THE EFFECTS OF AN INSTRUCTIONAL EXPERIMENT IN CHINESE READING AND WRITING

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ABSTRACT

The main purpose of this study was to explore the effects of an instructional experiment in Chinese reading and writing. The experimental condition included thematic instruction, increasing the amount of reading, and increasing the use of vernacular instructional materials. The subjects completed pretests and post-tests involving writing abstracts, which were scored according to the following four criteria: grasping the main point, composition and rhetoric, sentence construction and punctuation, and correct use of terminology. The sample consisted of 44 first-year university students, and t-tests were used to analyze the results.

The results reflected significant changes in the overall reading and writing performance of the total sample after instruction. Further analysis revealed significant changes due to instruction among both male and female students and among students in both the Department of Child Care and Education and the Department of Corporate Management.

Keywords: Chinese reading, Chinese writing, reading and writing

INTRODUCTION

In a public speech, Andreas Schleicher, Director of the Organization for Economic Co-operation and Development (OECD) suggested that literacy is the common currency of the knowledge society of the 21st century (He & Chian, 2009). In other words, “literacy” is as important as money in the context of globalization.

Moore (2001) asserted that the ability to read well is an important basis for the ability to write. In the Grades 1–9 Curriculum Guidelines, the Ministry of Education of Taiwan (2003) clearly supported “the cultivation of basic reading skills in students,” stating that “students should possess the ability to listen, speak, read, and write.” Indeed, recent reforms in language education in Taiwan have emphasized reading and writing.

However, surveys show that “poor language ability” seems to be common among university students. In particular, students at technical universities generally come from vocational schools, where education focuses on technical and occupational learning oriented toward employment. Thus, these students receive less training in basic academic subjects (such as Chinese, English, and mathematics) and have fewer learning-related skills. The researcher participated in the 2011 Writing and Reading Innovation Plan of the Ministry of Education of Taiwan, which divided the core curriculum into two dimensions: the first involved motivation, and the second involved improving the writing ability of students. The purpose of this plan was to help students control the emotional components of learning and literacy and thereby improve their ability to read and write Chinese.

The study assessed the performance of first-year university students before and after an experimental instructional course to evaluate changes resulting from the Chinese reading and writing instructional experiment, to identify the difficulties and problems experienced by students learning Chinese, and to provide information that can contribute to improved instruction. A pretest was administered at the beginning of the semester-long (4.5 months) instructional experimental treatment, and a post-test was administered at the end of the semester. It was hoped that this instructional experiment, especially the comparison between pretest and post-test scores, would provide data on the benefits and shortcomings of this program and serve as an important reference for future modifications of instructional materials, methods, and curricular content.

LITERATURE REVIEW

The words written in texts have many functions; they convey meaning, form a structure, and serve rhetorical purposes. Structurally, they are also embedded in sentences and are subject to rules of correct usage. According to Gagne, a scholar of the theory of education, the process of reading is divided into four stages: 1) decoding: the process by which the reader identifies the meaning of words; 2) literal comprehension: the process by which the reader searches for the meaning of words from her/his long-term memory to analyze and understand the meaning of sentences; 3) inferential comprehension: the process by which the reader is able to integrate, summarize, and contemplate; and (4) comprehension monitoring: the process by which the reader examines and monitors his/her own learning conditions, sets goals, and adjusts his/her learning approach accordingly (cited in Chang, 2008).

Gagne's understanding of reading begins with the stage at which the meaning of words is identified and progresses to the stages at which the reader engages in an exchange and interaction with the text and digests the knowledge signs conveyed by continuous passages. This reading process includes basic reading comprehension as well as the high-level semantic understandings involved in in-depth reading. Thus, this theory addresses both the high- and low-level processes involved in writing, the use of the correct terminology to enable readers to grasp the main point, and the role of structure in expressing reflections and thoughts. Pressley believed that reading involves high and low levels; the low level focuses on understanding vocabulary, and the high level focuses on understanding textual meaning (cited in Tzeng, 2010). The former emphasizes correctly using terminology, punctuation, and sentences as well as correctly constructing sentences. The latter emphasizes the ability to summarize the meaning of passages, connecting such meaning to old knowledge, thinking, analyzing, and evaluating. This approach is consistent with Goodman's dynamic interpretation of the reading process (Hung, 1998), which traces the connection between reading and writing from reading words through using words and comprehending textual meaning to creating a literary work. This process entails four stages: the visual stage, the sensory stage, the grammar stage, and the semantic stage. According to this model, reading tasks sub serve goals related to writing.

What is writing? Chang (2004) believed that it is expressing personal ideas using reasonable logic and correct grammar and punctuation in the form of sentences that constitute paragraphs, which, in turn, constitute a work of prose. Chen (1994) pointed out that writing includes assessing a topic, establishing one's intentions, using the material given, forming a composition, and choosing words. The present study used pretests and post-tests involving writing article abstracts to evaluate changes in the ability of first-year university students to read and write Chinese after an instructional intervention. An abstract differs from purely restrictive writing or free writing; it is a brief and definitive organization of the important

content of an article. In terms of journal articles, Wu (2008) believed that an adequate thesis abstract must meet requirements related to word usage, term usage, and sentence creation.

The writing requirements of the present experiment, which were based on cognitive theory and evaluation methods used by scholars in the domains of reading and writing, employed evaluative dimensions that are suited to the experimental course studied here and addressed four key areas: 1) grasping the main point, 2) composition and rhetoric, 3) sentence construction and punctuation, and 4) correct use of terminology.

Reading is the process of constructing meaning (Graesser, Singer, & Tratasso, 1994), and the most important aspect of reading is precisely grasping the information the author wanted to express so as to understand and organize the content of the article. The most important aspect of writing is interpreting textual meaning to establish the “main point of the article” as well as the in-depth meaning of the article. Otherwise, one would be unable to read the article or grasp what the author really wanted to say; one would thus be unable to read effectively. Zheng (2007) proposed that the process of abstract writing includes four dimensions: understanding the original text, distinguishing between primary and secondary elements, rewriting central content, and using appropriate forms of writing.

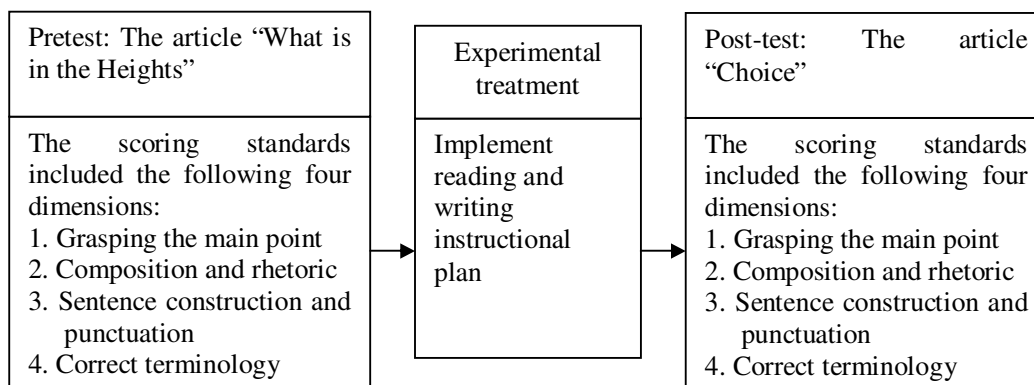
Assessments of “composition and rhetoric” should consider the structure and terminology used in the article, the presentation of and emphasis on the main point, and the extent to which the article engages in an objective discourse characterized by appropriate transitions and solid logic. The latter two categories involve linguistic expression and word choice.

“Sentence construction and punctuation” include the use of vocabulary and the employment of punctuation to appropriately divide sentences to express the intended meaning. Wu (2008) noted that the language used in abstracts should be simple and objective and should not include subjective evaluations. In terms of tone, declarative and imperative sentences should be used, and interrogative and exclamatory sentences should be avoided. Therefore, the third part of the evaluation addressed whether students constructed appropriate and correctly punctuated sentences that properly expressed the intended meaning.

The final category, “correct terminology,” was measured by the number of incorrect characters. The Chinese writing abilities of students in Taiwan have declined, and the most important indicator of this phenomenon is the number of incorrect words and terms and of incorrectly written characters (Li, 2005). As punctuation and word choice are part of basic writing skills, these can be used as an index of the basic language skills of students.

RESEARCH DESIGN AND IMPLEMENTATION

Experimental Design



Experimental Treatment

Differences between Experimental and Traditional Instruction

| | <i>Experimental Instruction</i> | <i>Traditional Instruction</i> |
|--------------------------------|--|---|
| No. of Students | Fewer than 40 students | 55–60 students |
| <i>Duration</i> | One semester | One semester |
| <i>Teaching Style</i> | Focus on activities (including writing and creativity training, discussion, worksheets, speaking, online forums, film appreciation, off-campus visits) | Focus on lectures (including composition, discussion) |
| <i>Teaching Content</i> | Half vernacular Chinese, half classical Chinese | Primarily classical Chinese |
| <i>Instructional Materials</i> | Thematic (8 themes) | No specific theme |
| <i>Reading Quantity</i> | About 50 articles (required reading and optional reading) | About 12 articles |
| <i>Teaching Assistants</i> | 1 | None |

The differences between experimental and traditional instruction involve the diversity of articles, the breadth and depth of the readings, the in-class instructional model, the time for discussion and independent writing, and the availability of opportunities to have work reviewed and corrected.

Scoring Mechanisms for Pretest and Post-Test

The reading and writing pretest was given during the first class of the first semester, and the test was returned to the students 2 weeks later. PowerPoint presentations were used in lectures and analyses to underscore the strengths and weaknesses of the written products. In the first week of the second semester, another reading and writing post-test was given. After one semester of lessons in reading and writing and a comparison between the pretest and post-test performances by students, I evaluated whether the Chinese writing ability of students improved.

Students were given 50 minutes in two class sessions to complete the pretest and post-test, both of which involved reading and writing.

The pretest and post-test were scored in terms of 1) grasping the main point (40%); 2) composition and rhetoric (20%); 3) sentence construction and punctuation (20%); and 4) the use of correct terminology (20%). The scores were then summed and divided into four grades: A (more than 90 points), B (80–89 points), C (79–70 points), and D (69–60 points).

“A” papers met the following standards: 1) correct use and comprehensive treatment of materials given the purpose of the paper; 2) rich content, profound thinking, or a unique perspective presented in a persuasive or compelling way; and 3) correct word choice, smooth flow, no incorrect characters, correct punctuation, and ability to use multiple types of punctuation.

“B” papers met the following standards: 1) understanding of the topic, appropriate paragraph separation; 2) appropriate purpose, engagement with content, reactions, and logic, but

insufficiently profound; and (3) correct use of terms and sentences, only a few incorrect characters, and suitable use of punctuation marks.

A grade of “C” indicated the following: 1) insufficient content, insufficiently clear discourse on the theme; 2) loose article structure, poor flow of sentences; 3) several incorrect characters and errors in punctuation that affected the meaning of the text; and (4) incorrect punctuation or use of only one type of punctuation.

Finally, a “D” grade indicated the following: 1) addressed the theme, included personal thoughts or opinions, but the content was lacking or deviated from the theme; 2) few changes in the sentences, like a running tally; and 3) complete inability to follow the format, with many incorrect punctuation marks and words.

Research Materials

The research materials used in this study included two articles written in vernacular Chinese. The pretest and post-test articles were “What is in the Heights” (by Zhang Xiaofeng) and “Choice” (by Mao Min), respectively. The former is a descriptive essay, whereas the latter is an expository essay; both contain fewer than 1000 words. Students were also given an answer sheet with prompts. They were instructed to capture the content of the abstract and describe their own thoughts in at least 200 words.

Research Subjects

The sample for this study consisted of 44 first-year university students (18 males and 26 females) in the first-year Chinese Reading and Writing Plan at a technical university in southern Taiwan. Twenty-one participants were from the Department of Child Care and Education, and 23 were from the Department of Corporate Management.

Data Analysis

The quantitative data collected in this study were used to compare the pretest and post-test scores of all students. Additional comparisons were also performed according to sex and department, and *t*-tests were used for all comparisons.

RESULTS AND DISCUSSION

Results

Changes after Instruction in the Total Sample

The changes due to instruction in the total sample are presented in Table 1. In terms of grasping the main point, the mean pretest score was 73.45, and the mean post-test score was 81.61, which reflects a statistically significant difference ($t = -5.78, p < .001$). The mean composition and rhetoric pre-test score was 73.91, and the mean post-test score was 81.77, also indicating a statistically significant difference ($t = -6.35, p < .001$). The mean pretest score for sentence construction and punctuation was 74.59, and the mean post-test score was 81.39, a statistically significant change ($t = -6.01, p < .001$). Similarly, the mean pretest score for correct terminology was 74.27, and the mean post-test score was 82.09, also a statistically significant change ($t = -6.38, p < .001$). The mean total score on the pretest was 73.90, and the mean total score on the post-test was 81.55, also showing a statistically significant change ($t = -6.46, p < .001$).

Table 1. Changes due to instruction in the total sample

| Chinese | Pre-test (n = 44) | | Post-test (n = 44) | | t-value |
|---------------------------------------|-------------------|------|--------------------|------|----------|
| | M | SD | M | SD | |
| Grasping the main point | 73.45 | 8.48 | 81.61 | 6.38 | -5.78*** |
| Composition and rhetoric | 73.91 | 8.08 | 81.77 | 5.59 | -6.35*** |
| Sentence construction and punctuation | 74.59 | 6.89 | 81.39 | 5.71 | -6.01*** |
| Correct terminology | 74.27 | 7.02 | 82.09 | 6.33 | -6.38*** |
| Total score | 73.90 | 7.31 | 81.55 | 5.73 | -6.46*** |

***p < .001

Changes after Instruction in Males and Females

Changes among male students following instruction are shown in Table 2. With regard to grasping the main point, the mean score before instruction was 75.22, and that after instruction was 81.22 ($t = -2.22, p < .05$). In terms of composition and rhetoric, the mean score before instruction was 76.11, and it was 81.33 after instruction, also indicating a significant change ($t = -2.39, p < .05$). The mean score for sentence construction and punctuation was 75.78 before instruction, and it was 80.28 after instruction, showing a statistically significant improvement ($t = -2.90, p < .05$), and that for correct terminology was 74.89 before and 81.50 after instruction ($t = -2.86, p < .05$), also indicating significant improvement. The mean total score before instruction was 75.37, and it was 80.78 after instruction, also showing a significant difference ($t = -2.47, p < .05$).

Table 2. Changes due to instruction: Male students (N = 18)

| Chinese | Pre-test (n = 18) | | Post-test (n = 18) | | t-value |
|---------------------------------------|-------------------|------|--------------------|------|---------|
| | M | SD | M | SD | |
| Grasping the main point | 75.22 | 9.52 | 81.22 | 6.39 | -2.22* |
| Composition and rhetoric | 76.11 | 8.07 | 81.33 | 5.79 | -2.39* |
| Sentence construction and punctuation | 75.78 | 6.64 | 80.28 | 5.77 | -2.90* |
| Correct terminology | 74.89 | 7.88 | 81.50 | 6.86 | -2.86* |
| Total score | 75.37 | 7.75 | 80.78 | 5.90 | -2.47* |

*p < .05

The changes among female students following instruction are shown in Table 3. In terms of grasping the main point, the mean pretest score was 72.23, and the mean post-test score was 81.88, reflecting a statistically significant change ($t = -6.62, p < .001$). Similarly, the mean composition and rhetoric pretest score was 72.38, and the mean post-test score was 82.08, also indicating a significant change ($t = -7.04, p < .001$). The mean sentence construction and punctuation score before instruction was 73.77, and that after instruction was 82.15 ($t = -6.50, p < .001$), a significant change. Furthermore, the mean score for correct terminology before

instruction was 73.85, and that afterward was 82.50, also a statistically significant difference ($t = -6.48, p < .001$). With regard to total scores, the mean pretest score, 72.88 was significantly different from the mean post-test score, 82.08 ($t = -7.30, p < .001$).

Table 3. Changes due to instruction: Female students (N = 26)

| Chinese | Pre-test (n = 26) | | Post-test (n = 26) | | t-value |
|---------------------------------------|-------------------|------|--------------------|------|----------|
| | M | SD | M | SD | |
| Grasping the main point | 72.23 | 7.64 | 81.88 | 6.49 | -6.62*** |
| Composition and rhetoric | 72.38 | 7.87 | 82.08 | 5.54 | -7.04*** |
| Sentence construction and punctuation | 73.77 | 7.07 | 82.15 | 5.66 | -6.50*** |
| Correct terminology | 73.85 | 6.48 | 82.50 | 6.04 | -6.48*** |
| Total score | 72.88 | 6.96 | 82.08 | 5.66 | -7.30*** |

*** $p < .001$

Changes after Instruction According To Department

Pretest and the post-test scores for students in the Department of Child Care and Education are shown in Table 4. The mean score for grasping the main point was 71.86 before instruction and 82.00 after instruction, revealing a statistically significant change ($t = -6.31, p < .001$). Similarly, mean scores for composition and rhetoric improved significantly from 72.29 before to 82.24 after instruction ($t = -6.38, p < .001$). The mean score for sentence construction and punctuation also showed a significant improvement, with mean scores of 74.05 before and 82.29 after instruction ($t = -6.06, p < .001$), as did the mean score for correct terminology, which was 73.90 before and 83.10 after instruction ($t = -6.39, p < .001$). The mean total score was 72.79 before instruction and 82.33 after instruction, revealing significant improvement overall ($t = -6.77, p < .001$).

Table 4. Changes due to instruction: Students in the Department of Child Care and Education (N = 21)

| Chinese | Pre-test (n=21) | | Post-test (n=21) | | t-value |
|---------------------------------------|-----------------|------|------------------|------|----------|
| | M | SD | M | SD | |
| Grasping the main point | 71.86 | 8.05 | 82.00 | 6.78 | -6.31*** |
| Composition and rhetoric | 72.29 | 7.93 | 82.24 | 5.59 | -6.38*** |
| Sentence construction and punctuation | 74.05 | 6.92 | 82.29 | 5.88 | -6.06*** |
| Correct terminology | 73.90 | 5.99 | 83.10 | 5.21 | -6.39*** |
| Total score | 72.79 | 7.13 | 82.33 | 5.67 | -6.77*** |

*** $p < .001$

Changes in scores for students in the Department of Corporate Management are presented in Table 5. The mean score for grasping the main point was 74.91 before instruction and 81.26

after instruction, reflecting a statistically significant change ($t = -2.84, p < .01$). Scores for composition and rhetoric also showed significant changes, from a mean score of 75.39 before instruction to a mean of 81.35 after instruction ($t = -3.24, p < .01$). Sentence construction and punctuation also improved, from a mean score of 75.09 before instruction to a mean of 80.57 after instruction ($t = -3.12, p < .01$). The mean score for correct terminology showed a similar pattern, improving significantly from a mean score of 74.61 before instruction to a mean of 81.17 after instruction ($t = -3.39, p < .01$). The mean total score was 74.91 before instruction and 80.83 after instruction, a statistically significant improvement ($t = -3.25, p < .01$).

Table 5. Changes due to instruction: Students in the Department of Corporate Management ($N = 23$)

| Chinese | Pre-test ($n = 23$) | | Post-test ($n = 23$) | | t-value |
|---------------------------------------|-----------------------|------|------------------------|------|---------|
| | M | SD | M | SD | |
| Grasping the main point | 74.91 | 8.78 | 81.26 | 6.13 | -2.84** |
| Composition and rhetoric | 75.39 | 8.09 | 81.35 | 5.69 | -3.24** |
| Sentence construction and punctuation | 75.09 | 6.99 | 80.57 | 5.55 | -3.12** |
| Correct terminology | 74.61 | 7.96 | 81.17 | 7.20 | -3.39** |
| Total score | 74.91 | 7.48 | 80.83 | 5.81 | -3.25** |

** $p < .01$

Discussion

This study evaluated a one-semester Chinese reading and writing instructional experiment and found statistically significant improvements in the reading and writing performance of the total sample following instruction. The pretest data suggest that most students were not able to write an adequate abstract. They tended to treat the passage prompt as a yes/no question and were unable to grasp the main point. Furthermore, they wrote only one paragraph, used punctuation marks inappropriately, did not follow an appropriate writing format, and wrote only 200 words.

After one semester of the instructional experiment, the post-test revealed that students who participated in the instructional experiment were able to accurately understand the main point of the article, to reorganize the structure of their writing, and to identify key words and sentences. Furthermore, they wrote at least three appropriately separated paragraphs using correct punctuation, used at least three kinds of punctuation, indented at the beginning of the abstract and established new paragraphs on new lines in accord with the basic writing format, and wrote abstracts of more than 200 words.

Based on the above, this instructional experiment met its goals. However, we suggest that future Chinese reading and writing instructional experiments designed to teach students about writing abstracts take several steps, as follows: prevent students from directly copying the content of the selected article, require more comprehensive abstracts (e.g., keywords, an introduction, discussion, a transition, and conclusions), teach students how to evaluate the topic and engage in discourse, and guide students in correct punctuation. Additionally, such programs should address students' cognitive weaknesses and limitations.

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