Exploration of the Combination of Intelligence and Manual Work in General Writing Education in Chinese Colleges and Universities

Huijie Zhuang

School of Culture and Communication, Central University of Finance and Economics, Beijing, China

Abstract: Based on the practical research on the teaching reform of the general writing courses based on big data analysis in colleges and universities, this paper advocates the concept of combining information technology with traditional teaching, and constructs a rational writing correction model that combines intelligence and manual work. It is expected to explore the way that modern science and technology assists the general education in colleges and universities. This paper also raises a new correction mode that combines intelligent correction and manual correction to better and faster promote the development of the teaching reform of general writing courses in Chinese colleges and universities.

1. Introduction

Writing is a basic skill necessary for contemporary college and university students. It is an indispensable ability for the study and research in most professional fields. Rational writing is ubiquitous in colleges and universities. It is often used to explain a certain problem, which makes it necessary to present facts and reason, and explain logically and clearly. When we understand something, phenomenon, or problem in life, we always form our own opinions, opinions, and opinions, express these opinions, explain and discuss them. When we write them down, it becomes rational writing. Common rational essays include: academic writing, book report, essays, speeches, prefaces, book reviews, etc. The world's top colleges and universities all have general writing courses. For example, Harvard University has offered basic academic writing courses for undergraduate freshmen since 1872. Princeton University has also set up The Writing Center and opened a lot of writing general courses as compulsory courses for undergraduates. The Hume Center of Stanford University provides writing guidance for all their students, such as helping students clarify arguments and thesis logic, formulating research plans, and providing revision strategies.

At present, the general writing courses of Tsinghua University in China have covered all freshmen, with a total of 42 topics and 109 writing classes. Teachers of Tsinghua University have explored and used for reference the writing education at home and abroad. For example: Wang Xiaofang et al. (2017) took Princeton University as an example to investigate writing projects of American universities [1]. Based on the experience of writing curriculum construction in foreign universities, combined with the actual situation of Chinese universities, they proposed suggestions for the construction of writing courses that conforms to the national and school conditions. Chen Le (2019) analyzed the Yale Answers General Education Writing Course from the perspectives of concepts and practices, and pointed out that the writing course is a practical starting point for building a first-class undergraduate education [2]. Deng Geng et al. (2019) gave an overview of the "writing and communication" course of Tsinghua University, and explored the relationship between writing courses and general education [3]. They explained the position of writing courses in the university education curriculum system. Cao Liuxing et al. (2020) pointed out that in the context of promoting curriculum ideological and political construction, writing courses, as an important part of general education courses, undertake to improve students' writing ability and cognitive level, cultivate students' humanistic qualities and family-country feelings, and enhance students' ethical level and shaping students' scientific spirit [4]. At present, Tsinghua

University has organized a national college writing seminar for three consecutive years. It leads educators in the Chinese writing education field to explore how to make writing classes break the barriers between different disciplines in the context of general education. It also encourages educators to adopt multiple topics and multiple subjects in teaching to cultivate students' logical thinking ability, and then shapes their values, so as to realize the purpose of writing and educating people.

2. The Current Dilemma and Countermeasures of General Writing Education in Colleges and Universities in China

With the guidance of Tsinghua University, there are currently more than 100 universities in China offering general writing courses. Taking Tsinghua University as an example, the main characteristics of writing courses are "thematic style, small class system, high interaction, and deep infiltration." Relying on modes like high-intensity literature reading, small-class discussion, one-to-one instruction, writing workshops, students are guided to write and display rational essays in accordance with standard requirements. At present, there are three main difficulties in general writing education. (1) In terms of curriculum design, emphasis is placed on thinking logic, not language forms. (2) There is a lack of a unified training standard for credible rational writing. (3) Teachers spend a lot of time on writing assignment corrections and guidance, which results in teaching fatigue and does not have a long-term development mechanism. In response to the above problems, we propose solutions as follows:

2.1 Paying Equal Attention to Thinking and Language Education in the Curriculum Setting

At present, there is a certain "overcorrection" situation in general writing education. Colleges and universities have always emphasized the cultivation of critical thinking and logical thinking, while ignoring the problem of language expression. They simply see the language problems as the correction of the coherence. In fact, this is not the case. Let's start with the relationship between language and thinking. Spoken language is the first form of language, and written language is the second form. Writing and speaking share the same logic. Writing is an extension of speech, and the written words are usually more complete than spoken words. The main reason is that they lack the aid of communicative situations and interpersonal interaction. The omission space is small and the expressions are required to be more complete. In particular, rational writing requires rigor. In addition to the rigor of the affair itself, sufficient relevant background information must also be provided. However, writing usually needs to fill in the omitted part, otherwise the meaning is incomplete.

In fact, whether it is speaking or writing, there are usually three kinds of problems: (1) Lack of professional knowledge-can't write what they want to say, can't say what they want to say. (2) Sufficient professional knowledge, but lack of logical framework- the words do not convey the meaning. (3) The professional knowledge and logical framework are sufficient, but the expression skills are lacking-not good at words.

Writing is not simply a statement of words. At a deep level, it is an externalized expression of thinking. Ye Shengtao once said in the "Aspect of Articles": "Every article has two aspects: content and form [5]". The "content" of writing can be very extensive, and it can describe things, record facts, and express certain thoughts and emotions. However, the "content" is generally expressed in the form of words. It shows the thinking of the author. "Form" is the expression of pure language and words. Confucius said: "Speaking is only enough." It requires training to know how to use language to express one's opinions and ideas clearly. This is also the meaning of writing as a general course. In this way, language and logic are equally important.

Language has an important influence on thinking. We say that spoken language is the first form of language, and written language is the second form. But writing and speaking share the same logic. Writing is an extension of speech, and the written words are usually more complete than spoken words. The main reason is that they lack the aid of communicative situations and interpersonal interaction. The

omission space is small and the expressions are required to be more complete. Rational writing especially requires rigorous logic. In addition to the rigorous logic of the reason itself, sufficient background information must be provided. In writing, we usually fill in the omitted parts, otherwise the meaning will not be complete. So, the improvement of language ability has practical significance for writing.

Language refers to the social and psychological phenomena that exist in the human mind. Everyone has it. It is a whole and a system. Language refers to the use of language in our daily lives, which is embodied in specific words, sentences, and so on. Language and thinking are not two separate things. There are two basic functions of language, one is expression, and the other is communication. Therefore, the lack of language will not limit thinking, but it will limit the expression of thinking. Language has its own strict logic. From words and phrases to chapters, logic is everywhere. Both speaking and writing involve logical thinking. Teachers can take an excellent writing template as an example. They can use grammar to disassemble sentences and chapters can not only check the logic of thinking, but also help students improve their language ability. Analyzing the language use of excellent works is to learn how to use language tools for abstract and complex thinking activities.

The logic of language is embodied at every level of the language unit, but note that writing is not simply the process of constructing rhetoric, but rather the process of conceiving layout and organization through logical thinking, of collecting evidence, of selecting evidence, of expressing them in accurate language, and of presenting conclusions by improving ideas.

Thinking has its own structure. It is not easy to transition from thinking to language. Thinking is the content of language, and language is the form of thinking. Thinking relies on language to express. The systematicness of thinking requires the precision of language, the criticality of thinking needs the depth of language, and the agility of thinking needs the precision of language. Strengthening the training of thinking and language skills is not a day's work. It can only be strengthened and improved in continuous practice.

2.2 Pay Attention to Informatization Teaching, Establish a Unified Judgment Standard for Rational Writing and the Focus of Teaching

Rational writing is the embodiment of a set of high-level thinking integration capabilities. Its process involves the collection and arrangement of data, logical analysis, and the expression of critical thinking and concepts (concepts). It is one of the essential qualities of modern and contemporary college and university students. Moreover, it is also an important part of general education in colleges and universities. Therefore, a perfect rational writing mainly includes the following three elements: (1) factual evidence (2) logical thinking (3) language structure.

In view of the above three elements, in general writing, we must first teach students that facts are the basis for reasoning. If there are not enough facts (information, knowledge), no matter how strong the logic is, how smooth the language is, no one can have the correct thinking. Secondly, we must pay attention to logical self-consistent. The ability of thinking and logic determines whether a person has something to say. The ability of language expression determines whether a person can say what he thinks. At present, many college and university students are not good at writing because they are not very familiar with the language or the grammar of Chinese. It is useless if you can only come up with the idea, but not express it. In teaching, it is necessary to combine information technology with traditional teaching, and combine offline teaching with online discussion.

Through specific training, students' writing ability can be improved. For example, the analysis of excellent texts-learning from others. In the process of reading the text, teachers need to teach students to find out what the author's core point of view is, what the reasons are, how the corroboration is formed, and what the implicit or potential reasoning processes are? By understanding the composition of sentences, students can further observe the relationship between writing and speaking and speculation. Through data review and text analysis, they can reason and demonstrate their own views.

Through explanation and writing practice, students can learn the basic expression paradigm of writing.

In the setting of teaching, it should be noted that the education of general writing in colleges and universities should pay equal attention to the cultivation of logical thinking and language ability. The cultivation of writing ability should not only pay attention to the ability of logical thinking, but also the ability of language application. Language has its own strict logic. From words and phrases to chapters, logic is everywhere. Both speaking and writing involve logical thinking. Teachers can take an excellent writing template as an example. They can use grammar to disassemble sentences and chapters to not only examine the thinking and order, but also help students improve their language quoting ability.

2.3 Correct Writing with the Help of a Combination Mode of Intelligence and Manual Work

Writing correction and guidance are very important to writing teaching. A major feature of general writing courses in colleges and universities is face-to-face criticism. The so-called face-to-face review refers to that on the basis of meticulous correction, teachers will have no less than 30 minutes of one-on-one review discussion with the students to help students polish their short or long essays. This method is indeed helpful to improve students' writing ability, but it also leads to the high-intensity workload of teachers. This is not conducive to building a long-term development mechanism for general writing education.

As artificial intelligence technology has emerged in teaching guidance, learning evaluation and resource optimization. We can also try to use the combination mode of intelligence and manual work to make writing corrections to reduce the workload of teachers. At the same time, a set of objective standards can be used as teaching guidance for college general writing teaching. In addition, to some extent, teachers can avoid the subjective judgment on students' writing.

Artificial intelligence actually relies on big data resources to build models. Through deep learning algorithms and highly computational programs, intelligent technology and the human brain can be integrated. At the same time, it can have multiple capabilities such as interaction, understanding, calculation, decision-making, and emotion, to meet high-quality educational needs. The functional development of the artificial intelligence correction composition system requires the knowledge base to set certain judgment standards as the basic library. For example, it can be comprehensively judged from multiple levels such as vocabulary richness, sentence fluency, part-of-speech collocation, and text structure. In May 2021, China Culture Administration Association issued the *Chinese Writing Professional Ability Evaluation Standards* [6]. It describes a systematical and scientific closed loop of writing ability development through the four major mechanisms of evaluation, feedback, learning, and improvement, which starts from thinking, structure, and expression, combines quality and quantity, requires students to submit their essays in the prescribed time and method to evaluate their levels. The release of this standard can provide a certain basis for the evaluation of the artificial intelligence correction system. By formulating writing scoring standards with strong scientificity and operability, setting independent identification and easy quantification of program logic algorithms, installing practical natural language processing systems, completing the development and design of fully functional artificial intelligence writing software. Finally, the idea of assisting teachers with intelligent correction is put into teaching practice.

At the same time, general writing courses in colleges and universities mostly use thematic models. Teachers can also add personalized artificial intelligence judgment principles based on the teaching themes, and apply deep learning techniques to improve the quality of artificial intelligence judgments. In addition, the artificial intelligence evaluation system has a major advantage. It can automatically generate students' personal writing growth reports and establish student writing quantification with the help of big data technology and diachronic data such as students' homework, correction comments, and student improvement feedback in different periods.

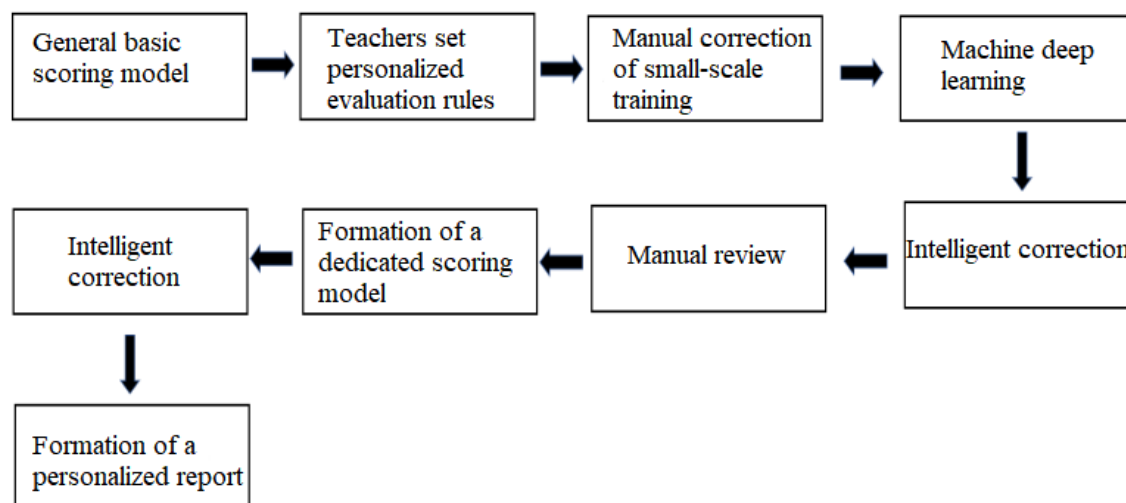The specific steps are shown in the figure below:

Fig.1 Corresponding Explanatory Text of the Artificial Intelligence Evaluation System

3. Conclusion

Based on the analysis and research on the current situation of the teaching reform of general writing courses in colleges and universities, this paper advocates that both thinking and language education should be emphasized in the general writing courses of colleges and universities. While cultivating students' critical thinking, teachers also pay attention to teaching students the skills of written expression. Radiation teaching is carried out in academic subjects, and the training of language logic is emphasized. For example, through the chapter structure and language analysis of excellent works, writing assignments enable students to understand that reading is a reverse process from "form" to "content", while writing is a forward process from "content" to "form".

Secondly, in the teaching process, teachers should pay attention to information teaching and establish a unified judgment standard for reasoning and writing and the focus of teaching. Finally, in view of the main problems of the existing writing correction model, such as slow correction speed, overworked teachers and teachers, etc., reform methods are proposed for the links that have a negative impact on the long-term development mechanism of general writing education. With the advent of the era of big data, more and more artificial intelligence technologies are added to the education field. Teachers can also use the mode of combining intelligence and manual work to correct writing assignments. The correction assistance of artificial intelligence will effectively reduce the burden on teachers, improve the efficiency of correction, and liberate teachers to promote teaching. At the same time, artificial intelligence can form students' writing report vertically, find problems effectively, show students' writing progress, let teachers and students understand the problems in writing, and put forward personalized guidance and help for different students' problems. It is hoped that through the research of this paper, the modern science and technology can be explored to assist the general education teaching in colleges and universities, and promote the development of the teaching reform of general writing courses in Chinese colleges and universities better and faster.

References

[1] Xiaofang Wang, Geng Deng. A research and comparison of writing course project in USA-Taking Princeton University as an example [J]. Higher Education of Sciences, 03, pp. 68-73+17, 2019.

[2] Le Chen. Idea and practice: Writing seminar in Yale University [J]. Comparative Education Review, 41 (01), pp.32-48, 2019.

[3] Geng Deng, Chengqing Li, Fan Su. Ability cultivation in general education curriculum--Exploration of "Writing and Communication" curriculum in Tsinghua University [J]. General Education Review, 01, 88-97, 2019.

[4] Liuxing Cao, Ximing He, Jifang Dou. The practice of ideological and political construction from the perspective of emerging engineering: Thematic general writing course design targeting science and engineering undergraduates [J]. Research in Higher Education of Engineering, 01, pp.24-30, 2021.

[5] Mianzun Xia, Shengtao Ye. Seventy-two writing class: teach you to write articles [M]. Beijing: Kaiming Press, 2017, pp.89.

[6] China Culture Administration Association. Chinese Writing Professional Ability Evaluation Standards [N]. Guangming Daily, 2021.