

Survey on the Self-revision in English Writing of Senior High School Students

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Abstract

With the development of curriculum reform, English teaching attaches greater importance to students' micro-skills about writing, such as conceiving, outlining, and revising. Meanwhile, the application of self-revision skill runs through the entire process of writing, and profoundly affects students' composition quality and writing skills. Therefore, exploring the current situation of self-revision in English writing of high school students is of great theoretical and practical significance. This study mainly discuss those questions: (1) What are the emotional factors involved in high school students' self-revision of English writing? (2) What is the level of metacognitive knowledge about self-revision in English writing among high school students? (3) What are the characteristics of self-revision behavior in high school students' English writing? (4) What is the correlation among the emotional factors of self-revision, metacognitive knowledge of self-revision and self-revision behavior in high school students' English writing? This study will use the method of literature review, questionnaire, text analysis and interview to investigate the current situation of self-revision in English writing of high school students. The questionnaire survey will conduct on 100 students in a senior high school. Then, the students' original and revised manuscripts were analyzed and representative respondents were selected and interviewed. The results of the study: High school students' self-revision of English writing is influenced by various emotional factors, such as anxiety, confidence, and motivation. Additionally, the level of metacognitive knowledge about self-revision in English writing among high school students varies, with some students possessing a deeper understanding of the process while others may struggle to effectively self-revise. Furthermore, the characteristics of self-revision behavior in high school students' English writing include attention to grammar, organization, and coherence, as well as the ability to seek and incorporate feedback. Finally, there is a correlation among the emotional factors of self-revision, metacognitive knowledge of self-revision, and self-revision behavior in high school students' English writing, indicating that students' emotional state and understanding of self-revision impact their actual self-revision practices.

Keywords

Self-revision in English Writing; High School Students; Affective Factors.

1. Introduction

1.1. Research Background

The "Evaluation System of the Chinese College Entrance Examination" emphasizes that the writing assessment of the college entrance examination should highlight the language ability of students to accurately use vocabulary and grammar, use relevant common sense and language knowledge for effective written expression, and appropriately express special intentions and effects. Among them, writing expression, as an important expressive skill, play a fundamental role in improving learners' comprehensive language proficiency. However, Faigley and Witte

(1981) pointed out that many people believe that among the many stages of writing, studying writing revision is the simplest and lacks value. Through in-depth research, scholars have found that writing revision is a very important and complex activity. Nowadays, revision is widely recognized as an essential component in the process of writing both native and second/foreign languages. (Allal et al., 2004; MacArthur et al., 2015; Barkaoui, 2016).

The quality and writing skills of students' English compositions are constrained and influenced by many factors, such as their ability to use vocabulary and grammatical structures, sentence structure transformation, discourse cohesion, and discourse structure design. As a necessary means of running through the entire writing process, revision can directly affect other factors. Many previous studies have shown that writing modification can enable the writing subject to organize the content and viewpoints of the article more clearly and reasonably, so that their creative intention can be fully presented to readers. (Gui Qingyang and Fu Xianmei, 1998)

In English writing, the role and significance of self-revision are increasingly prominent, but both teachers and students have a one-sided view of viewing revision as the final stage of writing to a certain extent, and do not attach enough importance to self-revision in writing. Students lack the awareness of proactive self-revision, or are unclear about the methods of revision and how to ensure the quality of their own revisions. Therefore, it is particularly important to conduct research on self-revision in high school students' English writing.

1.2. Research Purpose and Significance

1.2.1. Research Purpose

Being able to self revise English compositions is a necessary means to ensure the quality of writing. Therefore, research on students' self-revision in writing can make some contributions to teachers' writing teaching practice. The aim of this study is to achieve the following research objectives:

- (1) Comprehensively understand the current situation and existing problems of self-revision in high school students' English writing;
- (2) Provide specific and actionable suggestions to enhance high school students' ability to revise their English writing.

1.2.2. Research Significance

- (1) Understanding the reality of self-revision in high school students' English Writing.
- (2) Making up for the shortcomings of research on self-revision in English Writing.
- (3) Providing feasible suggestions for teachers to cultivate students' self-revision ability and improve the quality of their compositions.

1.3. Research Content and Method

1.3.1. Research Content

Based on the reality of senior high school students' writing modification in China, this study uses the Chinese students' English writing modification model as a theoretical tool, enriches the specific composition of self-revision behavior with the types of writing modification summarized by previous scholars, and takes emotional factors and metacognitive knowledge into consideration, so as to build an analytical framework of English writing self-revision consisting of emotional factors and self-revision behavior. Based on this framework, the study will conduct a questionnaire survey, essay text analysis, and interviews on English writing self-revision. Based on quantitative data statistics, the study will delve into the characteristics, correlation, relationship with writing proficiency, and underlying reasons of the two dimensions of self-revision. Finally, relevant conclusions and targeted suggestions will be drawn.

1.3.2. Research Method

This study mainly uses literature research, questionnaire surveys, text analysis, and interviews to explore and analyze the current situation of self-revision in high school students' English writing from multiple perspectives of theory and practice.

(1) Literature Research Method

Through CNKI, Wan fang, Wipe, Web of Science and other domestic and foreign academic databases and related books, thesis and journals, search, consult, screen, the author sorts out and summarizes the literature on English writing modification and English writing self-revision, understands the current research situation at home and abroad, determines the research direction and ideas, learns from relevant research results, and provides a theoretical basis for the research.

(2) Questionnaire Survey Method

The study conducted a questionnaire survey on students to understand the emotional factors of self-revision in high school students' English writing and identify the existing problems. In terms of the emotional factors of self-revision, the questionnaire mainly starts from the five dimensions of modified attitude, anxiety, motivation, self-confidence and empathy; In terms of metacognitive knowledge about self-revision, the questionnaire mainly starts from three dimensions: self, task, and strategy.

(3) Text Analysis Method

Research collects and analyzes original English compositions with traces of revisions retained by students and revised drafts written after teacher comments, and compares and analyzes the original and revised drafts to comprehensively and systematically understand the characteristics of self-revision in high school students' English writing, and clearly and intuitively identify existing problems.

(4) Interview Method

The author conducts interviews with high school students and high school English teachers to gain a deeper understanding of the emotional factors of self-revision in students' English writing, as well as the current situation and underlying reasons for self-revision behavior.

2. Literature Review

2.1. Definition of Self-revision

Self-revision belongs to a method of language correction, which only includes self correction (completely corrected by students themselves or under the guidance of teachers), teacher correction (provided by teachers directly), and peer correction (corrected by peers) (Edge, 1989). Similar to the classification of language error correction methods, writing modification itself can also include modifications made by students independently and independently throughout the writing process, including modifications influenced by guidance and prompts provided by others during the evaluation process, as well as direct modifications made by teachers during grading and peer evaluation (Su Xiaoqing, 2014; Baiyun, Wang Junju, 2018).

Self-revision in writing is a form of writing modification. In this study, self-revision in writing refers to changes made to the text at any time during the writing process, when the writing subject is completely controlled by their own will or influenced by other indirect forms (such as teachers, peers, etc.).

It should be noted that the concepts of self-revision and self-directed revision in writing have both similarities and differences. The commonality between the two is that they both include independent modifications made solely by the writing subject based on their own will and knowledge. The difference between the two lies in the broader scope of the concept of self-revision, which not only includes independent revisions by the author, but also includes

revisions made by the author through other indirect forms of influence (excluding direct revisions made by teachers, peers, and others). However, autonomous modification only refers to the complete independent decision-making of students based on existing knowledge (Muncie, 2000), and usually occurs during the conceptual stage before writing and the real-time writing process.

2.2. Theory Basis

2.2.1. The Process Writing Approach

In the 1970s, the Western linguistic and teaching communities pointed out that the Product Writing Approach centered around traditional techniques of teaching and writing, emphasizing the correct use of language forms and neglecting cognitive changes in students' writing processes. In such a process of repeated deduction and explanation, students are unable to actively explore and create. Faced with the shortcomings of the results based teaching method, American scholar Wallace Douglas first proposed the Process Writing Approach. He pointed out that writing is a process, and writing classes should teach the operational methods that make up each step of the writing process (Judy, 1981).

The process writing approach has obvious advantages, providing us with a way to think about writing based on the author's behavior (such as exploring themes, modifying articles, etc.). It combines the research results of linguistics, sociology, cognition, and psychology, and views the originally linear writing as a cyclic process of psychological cognition, creative thinking, and social interaction (Applebee, 1986). Firstly, the process writing approach advocates treating writing as a complex, cyclical cognitive, creative, and interactive process. Process writing mainly consists of pre-writing preparation, initial draft, feedback, revision, and finalization stages, which are mutually penetrating, interdependent, and cyclical (Hu Yi, 2006). It emphasizes the excavation and expression of writing content, and emphasizes the enormous use of repeated revisions in the writing process. At the same time, the process writing approach proposes that the writing subject should learn writing through the dynamic process of writing, emphasizing that writing is viewed as a form of thinking or action to solve problems (Cao Rongping, 2004). In addition, it aims to cultivate students' ability to discover, analyze, and solve problems, thereby improving their written expression skills (Deng Liming et al., 2003).

Therefore, the process writing approach reflects the cyclic nature of the writing process, interpreting the necessity of each writing step, and highlighting the importance of revision. In addition, it emphasizes the autonomy and interactivity of the author, as well as the cognitive behavior of "discovering problems - analyzing problems - solving problems" in writing, highlighting the importance of the author's ability to find, think about problems in the composition, and self modify (i.e. solve problems) through various means. It also implies the appropriate attitude towards modification, modification goals, and modification methods. Revising the roles of the subject and the teacher has important theoretical guiding significance for this study.

2.2.2. The Theory of Metacognition

In the 1970s, American psychologist Flavell (1979) first proposed the concept of metacognition. The metacognitive theoretical framework he constructed in his research has been widely used in Developmental psychology and related research in the field of second language acquisition (Purpura, 1997). He believes that metacognition is the knowledge of the cognitive process, cognitive outcomes, and related activities carried out by the cognitive subject. It is the cognition of self cognition, including the cognition of the current cognitive process (dynamic) and self cognitive ability (static) and their interaction, as well as the active monitoring and regulation of these processes.

In terms of metacognitive research in writing, Flavell (1987) clearly pointed out the metacognitive phenomenon in writing "Since the author must examine their own thoughts and speculate whether the reader can understand and agree with the viewpoints in the article during the writing process, the writing process also includes metacognitive practice and metacognitive experience." Moreover, metacognition is significantly positively correlated with second language writing performance (Devine, 1993).

Tang Fang and Xu Jinfen (2005) regarded metacognitive strategy knowledge in English writing as knowledge of the effectiveness of strategies used by cognitive subjects to achieve writing goals or engage in writing tasks, including knowledge of strategy application related to organizing article content, modifying content and form, and utilizing resources. Therefore, revision strategies have become an important component of writing metacognitive strategies, and the author's metacognitive knowledge also affects their writing revision ability. Therefore, writing modification is closely related to metacognitive knowledge, providing a theoretical basis for this study to use metacognitive knowledge as an analytical dimension for self-revision.

2.3. Previous Studies on Self-revision

2.3.1. Research Methods of Self-revision in English Writing

The research methods used in the study of self-revision in English writing have undergone continuous enrichment and development, indirectly reflecting the researchers' cognitive depth of the essence of modification in the entire writing process. The main research methods include text analysis, voice thinking, retrospective interview recording, computer keystroke recording, screen capture, questionnaire survey, etc.

Among them, text analysis is the most commonly used method, which usually uses certain analytical standards or frameworks to compare and analyze the differences between the original and revised versions in terms of modification types and quality (Polio, Fleck&Leder, 1998). With the help of online writing centers, teachers can timely complete online grading work, help students revise their compositions, and provide feedback. The online writing center can not only provide assistance for students' writing training, but also provide support for teachers' research. The voice thinking method requires research subjects to verbally express their thinking processes during the writing process (Perl, 1979), and these ideas are recorded in real-time and transcribed into written form later on. Retrospective interview recording is also an important means, and researchers usually conduct interviews immediately after the author completes the composition to understand the author's feelings and thoughts during the writing process (Yuan Hui, 2015). The questionnaire survey has a wide range of uses, and can collect information about self-revision goals and strategies by asking writers to conduct guided self-assessment. It can also be used to measure writers' emotional state and metacognitive knowledge about modification during the self-revision process.

2.3.2. Research Content of Self-revision in English Writing

(1) The significance of self-revision in English writing

In the writing guidance class, students have the most profound understanding of which words and sentences are high scoring words and sentences, which are the key points for scoring. In future compositions, fixed collocations should be used, but little is known about the stylistic requirements, thematic requirements, and structural requirements of the discourse. Therefore, the role of writing revision is prominent, some researchers have further demonstrated the importance of self-revision. For example, Makino (1993) found that college students are able to correct their sentence level errors to a certain extent, and when teachers provide error location prompts, their revision quality and essay quality are significantly improved. Similarly, Diab (2016) found that compared to teacher feedback, students' self feedback and revision significantly reduced their vocabulary errors, further proving the importance of self-revision.

However, his research was limited to the level of vocabulary errors, lacking comprehensiveness and depth.

(2) Self-revision strategies for English writing among students of different levels

By studying the self-revision of English writers at different levels, many researchers have found that high-level writers tend to make relatively more revisions to meaning and discourse in their compositions, while low-level writers mainly focus on language surface issues such as grammar, words, or punctuation (Faigley&Witte, 1981). Similarly, Wu Sufang (2007) selected two groups of college students with high and low proficiency as the research subjects, requiring them to complete an English essay in class and then make modifications to their article in terms of structure, content, and language within a week. The study compared and analyzed students' classroom compositions and revised drafts, and found that high-level writers used more self-revision strategies at both high-level and low-level levels than low-level writers.

(3) The effect of different forms of feedback on self-revision in English writing

Most research on self-revision in writing focuses on exploring the positive effects of teacher feedback, student evaluation, or online writing and review platforms on self-revision. For example, Song Yan (2018) studied the impact of online writing platforms on self-revision and found that writing feedback from the correction website can improve students' enthusiasm for repeatedly revising their compositions, which helps to improve the quality of their compositions. However, due to technological limitations, the correction website was unable to identify and point out all language errors and provide more semantic feedback. Fukuta et al. (2019) investigated whether and how indirect feedback can help learners self modify. The results showed that learners have better editing effects when receiving indirect feedback, and their fluency and accuracy in writing have also improved. Albert W. Li (2023) pointed out that the online approach appears suitable for writing teachers and can be combined with AI-based automated feedback tools in their online writing classes creating a technology- and peer-mediated interactive learning environment for students to check and revise various writing issues which boosts self-directed learning.

(4) The role of teaching in self-revision of English writing

Teachers' teaching activities and indirect feedback can also improve the quality of self-revision, such as Coomber (2016) pointed out that having the experimental group of students complete oral presentations, grammar workshops, and checklists before revising their compositions, the importance of teacher activity design in promoting students' habit of independent revision was demonstrated. Liu Weiting (2010) studied the effectiveness of thematic structure analysis (referring to the relationship between the themes of a series of sentences in an article) in teaching self-revision. The results showed that this method significantly improved the overall and paragraph coherence of students' revised drafts.

(5) Survey on the current situation of self-revision in English writing

There is a relatively small number of research on the current situation of self-revision in students' English writing. Some domestic scholars have conducted a relatively comprehensive survey on the decision-making, behavior, purpose, methods, content, and effects of self-revision in writing (Yuan Lin, 2018). The research shows that Chinese learners' self-revision decisions are scattered, mainly including deletion, partial revision, word internal revision and form revision; The overall emotional state of learners is good, and there is a strong correlation and interaction between the different metacognitive knowledge they master; The decision-making of self-revision in writing is influenced by different emotional factors and metacognitive knowledge.

Yuan Hui (2015) conducted an online writing experiment to analyze the differences in real-time self-revision behavior among middle school students of different levels in English writing from the perspectives of modification methods, content, and location. Research has found that the

modification methods of middle school students are mainly manifested as replacement, addition, and deletion at the lexical level. The number of language form modifications is greater than the modification of content meaning. The modification behavior within the current paragraph is significantly more than the modification of completed paragraphs, and the use of local and overall modification strategies is uneven. Moreover, the writing level of middle school students is positively correlated with the number of meaning modifications and out of paragraph modifications, while negatively correlated with the total number of modifications, language form modifications, and the number of modifications within the current paragraph. Similarly, Yuan Lin (2018) conducted a multidimensional analysis of Chinese college students' self-revision behavior in real-time writing from four aspects: language level of modification, behavior type, and modification purpose, using the method of finger movement recording. Research has found that students make more modifications at the word and phrase levels than at the sentence and discourse levels, and the frequency of modifications at different language levels is independent of the learner's level. Meanwhile, English proficiency only affects the number of modifications made by Chinese college students in certain specific types of modifications, with high-level students having fewer formal and micro modifications, and both tend to adopt a ready-to-write modification approach.

2.3.3. Summary of Previous Studies

Based on the above research review, it can be found that there is a wealth of research on writing modification abroad, with specific modification classifications and systematic and standardized writing modification models formed. Multiple research methods have been used to explore the current situation of writing modification. Although research on English writing revision started relatively late in China, in recent years, many scholars have also begun to attach importance to the importance of revision in cultivating students' writing ability, and related research is increasing and gradually deepening. These domestic and foreign literature on writing revision have important reference and reference significance for the study of self-revision in English writing in this article.

At present, research on the current situation of self-revision in English writing is still very limited, and it is relatively broad or scattered, indicating that there are still problems that need to be further explored and solved in existing research, specifically manifested in the following aspects:

The existing writing modification models each have their own shortcomings, lack a specific description of self-revision behavior, and their dimensions are not comprehensive and clear enough, basically not incorporating the emotional factors and metacognitive knowledge of writing modification into the research scope. Most studies have focused on the self-revision of English writing among college students, lacking research conducted at the high school student level, and with a small sample size. Most rely solely on a single text analysis method to study the specific types or strategies of students' revision, and rarely use questionnaire surveys to study the emotional factors and metacognitive knowledge of students' self-revision in writing, and conduct in-depth exploration of the characteristics and reasons of each dimension of self-revision through interviews and other methods.

From this, it can be seen that in order to conduct a comprehensive and in-depth study of the current situation of self-revision in high school students' English writing, it is necessary to first use a scientifically strong writing revision model as the theoretical basis of the research framework, and supplement specific descriptions of self-revision emotional factors, metacognitive knowledge, and revision behavior, so that the framework can lay a reasonable theoretical foundation for the current situation investigation and research, And select appropriate research subjects and rich research methods to explore various dimensions of students' self-revision.

3. Research Design

3.1. Research Question

In order to explore the current situation of self-revision in English writing of high school students and provide specific and actionable suggestions to enhance their ability of self-revision, this study mainly discuss those questions:

- (1) What are the emotional factors involved in high school students' self-revision of English writing?
- (2) What is the level of metacognitive knowledge about self-revision in English writing among high school students?
- (3) What are the characteristics of self-revision behavior in high school students' English writing?
- (4) What is the correlation between the emotional factors of self-revision, metacognitive knowledge of self-revision and self-revision behavior in high school students' English writing?

3.2. Research Participant

The survey subjects of this study were 100 students from 5 classes in Grade 2 of C High School in S City. C High School in S City is a key middle level high school in the city. The author selects high school sophomores from different levels of classes with varying writing abilities, and strive for a close proportion of male and female students.

After the questionnaire survey, the researcher selected 1 teacher and 2 students from each of the two levels of English teachers in the second grade of the high school, and conducted in-depth interviews with 2 English teachers and 4 students.

3.3. Research Methodology

This study adopts literature research, text analysis, questionnaire survey, and interview methods for research.

Firstly, by reviewing relevant literature on writing modification both domestically and internationally, this study aims to clarify the development of writing modification and the main aspects of research, and to investigate the current situation of self-revision in high school students' English writing.

Subsequently, by logically classifying and organizing the literature, and combining it with reality, an analytical framework for English writing self-revision is established. Methods for collecting and analyzing essay texts are developed, and questionnaires and interview outlines are designed with reference to relevant tools for writing revision.

Finally, the author collected and organized reliable research data through survey questionnaires, text analysis, and interviews. Based on the constructed analysis framework, the data is organized and analyzed using SPSS software.

3.4. Research Instruments

3.4.1. Questionnaire Survey Method

The questionnaire consists of two parts: background information and the main body. The first part is about the background information of the students, including school, class, gender, and name. The second part is the main part of the questionnaire, which mainly uses a self-evaluation scale to investigate the emotional factors and metacognitive knowledge about self-revision in high school students' English writing. It consists of 30 questions. In writing the content, the author refers to the questionnaire compiled and used by Zhao Weibin (2007) when establishing the model of Chinese students' English writing revision. On the basis of retaining the original questionnaire structure, the author has made certain modifications to the theme, classification, and content expression of the questionnaire content, making it more in line with the current

situation of self-revision in high school students' English writing. Firstly, the author deleted the relevant questions about online writing and writing that do not meet the actual situation of students. At the same time, in order to save time, improve survey efficiency, and improve questionnaire response rate, the author simplified some of the question stems while ensuring semantic accuracy.

Table 1. Components of the questionnaire

Structure		Item
Emotional factors of self-revision	Attitude	2, 4
	Anxiety	1, 9
	Motivation	7, 8, 10, 11, 12, 13
	Confidence	3, 14
Metacognitive knowledge of self-revision	Task	5, 6, 21, 22, 23, 30
	Strategy	15, 16, 18, 19, 20, 24, 25, 26, 27, 28

This main section consists of 30 questions, with the first 28 questions using the Likert five level scale format. Each question item includes 5 options from "completely in line" (5 points) to "completely out of line" (1 point). The survey subjects need to choose the one that best fits their own situation. Among these 28 questions, 5 of them (questions 1, 2, 9, 19, and 23) are reverse scored questions, which are scored in reverse when collecting data. In addition, questions 29 and 30 are single Multiple choice, and the scores of A, B, C, D and E of each item are 1, 2, 3, 4 and 5 points in turn.

3.4.2. Text Analysis Method

The text type of the composition selected in this study is argumentative. According to the learning progress of the research object, the school's curriculum and examination arrangements, and the type of composition text, and considering the unity of composition topic, writing time, and composition score evaluation, this study takes the Midterm exam composition topic of the first semester of sophomore in C high school in S city as the research topic of English writing. The English teachers in the second year of high school adhere to the principles of science, fairness, and rationality, and use the form of online sealed grading to conduct overall grading from three aspects: content, language, and structure. Before grading, English teachers in the second grade group who have received grading training will agree on grading standards and unify the grading standards through trial and approval.

3.4.3. Interview Method

In order to gain a deeper understanding of the emotional factors, metacognitive knowledge, modification behavior, and understanding of improving students' self-modification ability, and to gain a deeper understanding of the reasons for the current situation of students' self-modification, relevant core research content and areas that require further explanation were selected based on the analysis of questionnaire data. After induction and summarization, an interview outline for teachers and students was developed, and interviews were subsequently conducted. The author selected 4 high school students and 2 high school English teachers for interviews, with a uniform number of male and female respondents, a uniform distribution of class levels, and a uniform distribution of students' writing skills. Two high school English teachers taught two of the interviewed students respectively.

3.5. Research Process

3.5.1. Questionnaire Distribution and Collection

Within one week after the end of the Midterm exam English examination for senior two students of C High School in S City, the teacher interpreted and commented on the composition

part of the English examination paper, and gave students time to revise their compositions. After obtaining the consent of teachers and students, the author distributed paper questionnaires to students from five classes in high school.

3.5.2. Implementation Process of Essay Text Analysis

The text analysis implementation process used in this study to explore self-revision behavior consists of six steps, telling informing intention and obtaining consent, getting the original essay, teacher guidance and peer suggestions, writing revised drafts, submitting essays and recording scores, and data statistics and analysis.

3.5.3. Interview Implementation

The author conduct interviews with high school students and two high school English teachers from C High School in S city. Interviews are mainly conducted in face-to-face and online formats. Before the interview begins, the author informs the interviewees of the research purpose and main interview questions, and after obtaining their consent, determines the time to prepare them. In order to facilitate data processing, written records, recordings, or screenshots of the interview process shall be kept with the consent of the other party. After the interview, the author compiled the interview records.

3.5.4. Data Collection and Organization

Firstly, the author sequentially numbers the paper version of the questionnaire and uses the Questionnaire Star online platform to accurately input the content of the paper questionnaire into the electronic version. After data entry, the author exports the data organized by the platform in Excel format, numbers it, and organizes it according to various dimensions. Then, the data is imported into SPSS 26.0 software for coding and analysis. The author mainly uses descriptive statistics, independent sample T-tests, and correlation analysis methods to analyze questionnaire data. Subsequently, based on the text analysis framework and image data annotation results of English writing self-revision behavior, the author preliminarily encoded and organized the original and revised articles in an Excel spreadsheet, and imported the data into SPSS 26.0 software for systematic coding and analysis. For the interview data, the author transcribes, encodes, organizes, and categorizes the interview content, and conducts in-depth analysis by comparing the data from text analysis and questionnaire processing.

4. Results and Discussion

4.1. The Emotional Factors of self-revision in English Writing for High School Students

This study mainly investigates the current situation of emotional factors related to self-revision in English writing among high school students through a questionnaire, with a total of 12 questions. The emotional factors of self-revision in high school English writing are mainly reflected in five aspects: attitude, anxiety, motivation, self-confidence, and empathy. Among them, there are two dimensions of attitude and anxiety: motivation is divided into two dimensions: intrinsic motivation (2 questions) and extrinsic motivation (4 questions), totaling six questions; There is one question for each dimension of self-confidence and empathy.

The response format for the emotional factors section of the survey questionnaire adopts the Likert five level scale. The scores for each question range from 5 to 1, which are: completely consistent, basically consistent, uncertain, basically inconsistent, and completely inconsistent. Among these 12 questions, 9 of them (questions 3, 4, 7, 8, 10, 11, 12, 13 and 14) are positive scoring questions, where "completely consistent" scores 5 points, "basically consistent" scores 4 points, "uncertain" scores 3 points, "basically inconsistent" scores 2 points, and "completely inconsistent" scores 1 point. The remaining three questions (questions 1, 2, and 9) are reverse scoring questions, where "completely consistent" scores 1 point, "basically consistent" scores 2

points, "uncertain" scores 3 points, "basically inconsistent" scores 4 points, and "completely inconsistent" scores 5 points. According to Oxford and Burry-Stock's (1995) classification criteria for the Likert five level scale, an average value greater than or equal to 3.5 is considered a high level, an average value between 2.5 and 3.4 is considered a moderate level, and an average value less than or equal to 2.4 is considered a low level .[29].

From the above data, it can be observed that the mean motivation is the highest, at a high level of 3.82. Next are self-confidence and empathy, with mean values of 3.14 and 3.05, respectively, at a relatively high and moderate level. The two sub-dimensions with the lowest mean are attitude and anxiety, which are 2.92 and 2.82 respectively, both at a moderate level. Their standard deviations differ greatly, with the standard deviation of motivation being only 0.596, indicating a low degree of data dispersion and a tendency for student selection to be concentrated. In addition, the overall mean of emotional factors is 3.38, which is at a moderate level but close to a high level with a standard deviation of 0.501, indicating a low degree of dispersion. This indicates that high school students exhibit a moderate to high level of self-regulation of emotional factors in English writing.

4.2. Metacognitive Knowledge of High School Students on Self-revision in English Writing

This study mainly investigates the current status of metacognitive knowledge of high school students regarding self-revision in English writing through a questionnaire, with a total of 18 questions. The metacognitive knowledge of self-revision in English writing among high school students is mainly reflected in three aspects: self, task, and strategy. Among them, there is 1 question about the self dimension, 6 questions about the task dimension, and 11 questions about the strategy dimension. The response form of the metacognitive part of the survey questionnaire is basically in the form of the Likert five level scale, and all are rated based on the classification criteria of the scale by Oxford and Burry-Stock (1995). Among these 18 questions, 14 are (questions 3, 4, 7, 8, 10, 11, 12, 13, and 14) are positive scoring questions, while questions 19 and 23 are negative scoring questions. The remaining two questions (questions 29 and 30) are multiple-choice questions, and the scores of options A, B, C, D, and E for each question are 1, 2, 3, 4, and 5 points, respectively.

The metacognitive knowledge of self-revision includes three aspects: state about oneself, task about task, and strategy about strategy. Overall, the overall performance of metacognitive knowledge about English writing among high school students and the comparison of the average values of various metacognitive knowledge sub-dimensions are shown in Table 2 and Line Figure 1, respectively. The table shows that the metacognitive knowledge sub dimensions are arranged in descending order of mean.

Table 2. Metacognitive Knowledge Level Regarding Self-revision

Dimension	Minimum value	Maximum value	Mean value	Mean standard deviation
Task	1	5	3.43	0.624
Strategy	1.36	4.64	3.26	0.446
Self	1	5	3.14	0.923
Overall metacognitive knowledge	1.22	4.78	3.31	0.444

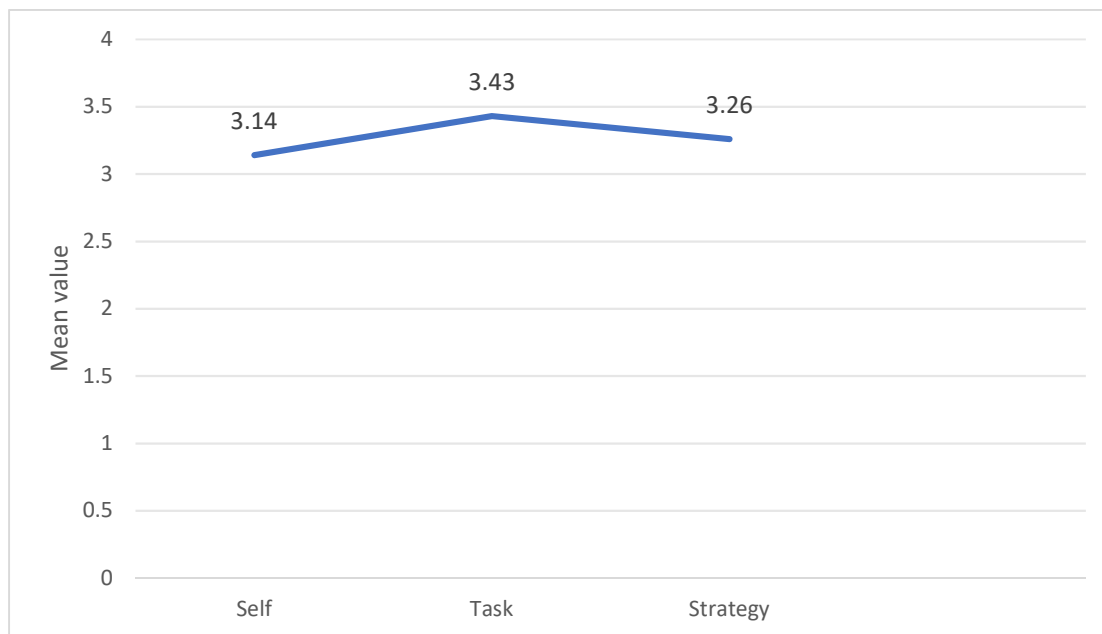


Figure 1. Comparison of Mean Sub-dimensions of Metacognitive Knowledge

From the above table and line chart, it can be found that the average metacognitive knowledge of self-revision in English writing regarding the task is the highest, at 3.43, which is at a moderate to high level and close to a high level. Secondly, there is metacognitive knowledge about self-regulation in English writing strategies, with an average of 3.26, which is at a moderate to high level. Finally, the metacognitive knowledge about self-revision in English writing has the smallest mean, with an average of 3.14, which is also at a moderate to high level. Meanwhile, their standard deviations are 0.624, 0.446, and 0.923, respectively, and their degree of dispersion is not high. Overall, the average metacognitive knowledge of high school students is 3.31, which is at a moderate to high level, with a standard deviation of 0.444 and a low degree of dispersion, indicating that their metacognitive knowledge about self-revision in English writing is at a moderate to high level.

4.3. The Current Situation of Self-revision Behavior in English Writing of High School Students

4.3.1. Self-revision Type

The analysis of the composition text shows that in the original manuscript, the total amount of revisions made by the high and low level groups of students is similar, with mean values of 12.77 and 12.66, respectively. However, there is a greater and more unstable difference in the number of revisions made by the low level group of students. The word count requirement for high school English test papers is generally between 120 and 150 words, and even if all modified units are counted as words, the modification rates of the two level groups reach about 9.5% and 9.4%, respectively, indicating that students will make a large number, high frequency, and more intensive modifications in the process of writing the original manuscript. And the study found that there was no significant difference in all revision aspects between the high and low level groups of students in the original and revised drafts. This is partly because in this study sample, the overall difference between students from key high schools is relatively small, and their self-revision abilities are relatively similar. The other party Through interviews and analysis, it was found that the number of revisions does not directly represent the writing level of students, and multiple factors should be taken into consideration. Firstly, students make more revisions, which may be due to their strong self-monitoring and self correction abilities, which can keenly capture areas that need to be corrected or improved, and improve the quality

of the article; But it is also possible that they are not careful enough in the writing process, often making mistakes in language or content expression, or insufficiently conceptualizing and considering, resulting in an unsmooth writing process. Moreover, if modifications are made too frequently, various modification symbols and text will reduce the cleanliness and aesthetics of the paper, thereby affecting the essay score. Similarly, making fewer revisions does not necessarily mean that students have clear thinking and high accuracy, but it may also be due to a lack of rigorous writing attitude and ability to check and modify.

4.3.2. Self-revision Level

The analysis results show that in terms of statistical significance, there is no significant difference in the revision level between the high and low level groups of students in the original and revised drafts, which is inconsistent with the previous research findings that high-level writers will make higher-level revisions (such as Zamel, 1983). Through interviews and analysis, research has found that there may be two possible reasons: firstly, when writing the original manuscript, students are limited by the prescribed time, and there is almost no sufficient time to think about how to make significant changes to the generated text and put it into practice; When writing revised drafts, most of students need to modify the unreasonable aspects at different levels in their original manuscript, and on the other hand, they need to incorporate new arguments inspired by teachers and classmates into their own revisions, so they will make some overall level modifications.

Secondly, students with higher writing proficiency have better self-monitoring abilities, making them highly sensitive to detailed information such as vocabulary and phrases. They can quickly utilize their language knowledge reserves to make changes when they discover discrepancies with the target text. At the same time, their writing attitude is more rigorous, and they usually have a good habit of conceptualizing and writing outlines in advance, So they will not easily change the entire sentence or paragraph. However, the influencing factors for low-level writers are relatively unstable, and their editing behavior is also more casual, as student Z said:

I haven't paid much attention to whether I have modified phrases or sentences. As long as I can correct them correctly, I don't think it's important. As long as it's not too much or too ugly, it's okay. However, I feel that the most I have changed is still the words and phrases, because they are more complex and I'm not very familiar with them. Sometimes, when I find that I can't continue writing sentences, I change my expression. And when I was editing, I found that the argument I wrote before was not right, Without my own personal experience, I changed everything..

Therefore, the distribution of revision levels is not directly related to the writing level of students, and multiple factors should be taken into consideration.

4.3.3. Self-revision Effects

The analysis results show that, statistically speaking, there is no significant difference in the revision effect of the original essay between the high- level and low-level groups. In general, active revision can improve the quality of the essay, while passive revision may lead to a decrease in the quality of the essay. However, actively making more revisions does not necessarily mean a high essay score, as excessive revisions may lead to poor reading or a decrease in paper scores for raters. Moreover, students' self correction mainly focuses on shallow language forms, and students with weaker language skills may also correct many spelling and grammar errors. Text analysis shows that in both the original and revised versions, the vast majority of revisions made by students in the high- level and low-level groups were positive, indicating that students have a certain level of self-revision ability. However, as most of the modifications tend to be superficial and lack in- depth significance, the actual effect is still worth pondering. A higher positive revision rate is also closely related to the criteria for determining the effectiveness of revisions. Many of the behaviors that are classified as positive

revisions only correct potential errors, or only optimize in individual aspects or parts without sufficient revisions, which cannot significantly improve the quality of the essay. The author also found that whether in the original or revised manuscript, students will make meaningless modifications without changing the meaning of the content or reflecting their language proficiency. For example, if students replace "a good method to facilitate learning" with "a good way to facilitate learning", such modifications that have no impact on the quality of the article should be avoided as much as possible to save time.

4.4. Relationship among Self-revision of Emotional Factors, Metacognitive Knowledge and Revision behavior in English Writing

4.4.1. Emotion Factors are Related to Metacognitive Knowledge

Through text analysis of essay, research has found that, similar to the research findings of Zhao Weibin (2007). There is a significant correlation between the emotional factors of English writing self-revision and metacognitive knowledge about self-revision among students in two proficiency groups, indicating that the emotional factors and metacognitive knowledge of English writing self-revision among high school students influence and constrain each other. Nowadays, education and teaching attach great importance to the cultivation of cognitive abilities, and English teaching often revolves around basic skills such as listening, speaking, reading, writing, and reading. Therefore, English writing emphasizes the exercise of students' logical thinking ability and language and writing ability. Emotions, as a potential factor accompanying cognition, are often overlooked. In fact, students with good emotional states can not only maintain a relaxed, joyful, and positive attitude when carrying out learning tasks, but also unconsciously make their knowledge structure more meticulous, and gradually improve their ability to flexibly allocate various basic knowledge. From the perspective of self-revision in writing, the emotional factors of self-revision are coordinated, balanced, and positive. Students have a correct attitude towards writing, can rationally control their anxiety, maintain it within a reasonable range, motivate themselves, integrate external requirements with internal drive, and be full of motivation to make revisions and creations. They always have confidence in completing revision tasks and can also carefully approach them from the perspective of readers, Polish one's own essay. At the same time, such students can also maintain a positive attitude towards continuous learning of English writing (including writing self-revision), thereby further consolidating and improving their metacognitive knowledge level about self-revision.

4.4.2. Emotional Factors, Metacognitive Knowledge and Revision Behavior are Related

The research results of Zhao Weibin (2007) have shown that there is a strong interaction between emotional factors of self-revision, metacognitive knowledge, and partial self-revision behavior. However, through text analysis, this study found that the emotional factors of English writing self-revision and metacognitive knowledge about self-revision among high and low level students were only related to partial revision behavior in the original and revised drafts, respectively. Therefore, overall, the emotional factors of self-revision in English writing are not closely related to metacognitive knowledge and specific revision behaviors of students. Due to limitations in time and space, exam oriented writing intentions, standardized writing procedures, and a lack of practical editing ability, students themselves believe that the emotional factors and metacognitive knowledge they hold cannot be well reflected in their actual behavior. In the interview, student J said:

"I understand the truth, but there is a gap between reality and ideals. In fact, when writing, I don't think so much. After seeing the topic, I usually write the content step by step according to the requirements, clarify the structure, quickly introduce at the beginning, think about the central sentence of some paragraphs, and add some detailed information. The time for writing an essay mainly depends on whether there are grammar errors, and whether it can add more

advanced usage that I have just learned. Although I know to elevate the theme of the article, I usually don't have enough time to think about these things. In normal times, there may still be.."

Meanwhile, for the low-level group of students, there is a negative correlation between the emotional factors of self-revision in English writing and the modifications made at the beginning of the original manuscript, indicating that the better the emotional state of self-revision among the low-level group of students, the less modifications made at the beginning. This may be because students with lower writing skills are prone to emotional fluctuations, leading to problems such as fear of difficulties, poor thinking, and more errors in the early stages of writing. If students have stable emotional factors, they can promote the accuracy and rationality of writing, and the revision rate will correspondingly decrease. In addition, the metacognitive knowledge of low level students about self-revision is related to active revision in the revised manuscript. The higher their level of metacognitive knowledge, the more active revisions they make in the revised manuscript. Moreover, there is a negative correlation between the emotional factors and metacognitive knowledge of low level students in self-revision and neutral modifications in the revised manuscript, indicating that the more positive their emotional state of self-revision, the less neutral modifications they make in the revised manuscript. These results are consistent with common sense. When students have a balanced psychological and systematic metacognitive knowledge of self-revision in writing, their rationality and effectiveness of revision will also be improved. Correspondingly, the probability of them making neutral modifications without substantial changes will also decrease.

5. Conclusion

Self-revision of English writing among high school students is a complex process that is influenced by various emotional, cognitive, and behavioral factors. Understanding these factors is crucial for educators and students alike in order to improve the quality of written work and foster effective self-revision skills.

Emotional factors play a significant role in high school students' self-revision of English writing. Anxiety, self-efficacy, motivation, and confidence are among the key emotional factors that impact students' willingness and ability to engage in self-revision. Students who experience high levels of anxiety may be less inclined to critically evaluate and revise their writing, while those with low self-efficacy may lack the belief in their ability to effectively self-revise. On the other hand, motivated and confident students are more likely to approach self-revision with a positive mindset, leading to more thorough and effective revisions.

The level of metacognitive knowledge about self-revision in English writing among high school students varies. Some students possess a deep understanding of the self-revision process, including the ability to monitor, evaluate, and regulate their own thinking and learning strategies. These students are able to reflect on their writing, identify areas for improvement, and implement effective revision strategies. However, other students may have limited metacognitive knowledge, struggling to understand how to approach self-revision in a systematic and strategic manner. This discrepancy in metacognitive knowledge highlights the need for targeted instruction and support to develop students' self-revision skills.

The characteristics of self-revision behavior in high school students' English writing encompass a range of strategies and actions. Effective self-revision behavior includes attention to grammar, organization, coherence, and the overall clarity of the writing. Students who engage in self-revision actively seek and incorporate feedback from peers or teachers, demonstrating a willingness to critically evaluate and improve their work. Conversely, students with less developed self-revision behavior may engage in superficial revisions or overlook critical aspects of their writing, resulting in less polished final drafts.

There is a correlation among the emotional factors of self-revision, metacognitive knowledge of self-revision, and self-revision behavior in high school students' English writing. Students' emotional states, such as anxiety and confidence, impact their metacognitive knowledge and subsequent self-revision behavior. For instance, anxious students may struggle to effectively apply their metacognitive knowledge during self-revision, leading to less comprehensive revisions. Conversely, confident and motivated students are more likely to utilize their metacognitive knowledge to engage in thorough and effective self-revision. This correlation underscores the interconnected nature of emotional, cognitive, and behavioral factors in students' self-revision process.

In conclusion, high school students' self-revision of English writing is a multifaceted process influenced by emotional, cognitive, and behavioral factors. Understanding and addressing these factors is essential for supporting students in developing effective self-revision skills and improving the quality of their written work.

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