Lu, Q., Yao, Y. & Zhu, X. The Effects of Writing Revisions on Writing Improvement Among Undergraduate Students: The Moderating Role of Self-rating Accuracy. Asia-Pacific Edu Res 33, 535–544 (2024).

The Effects of Writing Revisions on Writing Improvement among Undergraduate Students: The Moderating Role of Self-Rating Accuracy

Abstract

This study investigates the effects of two aspects of writing revisions (revision amount and revision function) on writing improvement, and how students' self-rating accuracy moderates these effects. Hierarchical linear regression is employed with a sample of 114 undergraduate students. When considering the moderating role of self-rating accuracy, the results show that both revision amount and revision function had positive impacts on writing improvement; self-rating accuracy had different moderating effects. Revision amount enhanced the writing improvement of students with low self-rating accuracy, while revision function boosted improvement among students with high self-rating accuracy. The findings extend our knowledge of how writing revisions work alongside self-rating accuracy to promote writing. Pedagogical implications for tailored assistance provided to students with varying levels of self-rating accuracy are discussed.

Keywords: writing revisions; revision amount; revision function; self-rating accuracy; writing improvement.

Introduction

The pivotal role that writing revisions play in writing processes, outcomes, and development has been recognized; it provides students with opportunities to evaluate and reflect on the writing process, facilitates language acquisition, and enables students to become critical and independent writers (Chen & Zhang, 2019; MacArthur, 2018). Teaching students to value revisions and to revise with greater ease thus enhances writing learning.

Existing research has investigated two aspects of writing revisions: revision amount and revision function. The former indicates the quantity of text changes (Wu & Schunn, 2021); the latter refers to textual clues that reflect the writer's revision purpose (Min, 2006). However, findings regarding the relationships between these two aspects of writing improvement do not reach a consensus on essential issues. Some suggest both revision amount and function have impacts on improvement outcomes (Authors, 2023; Min, 2006; Wu & Schunn, 2021), whereas others do not (Barkaoui, 2016; Crawford et al., 2008). Several scholars have argued that additional variables, such as individual differences, play roles in the revision process (Barkaoui, 2016; Cho & MacArthur, 2010). While research has explored the moderating role of writing process-related factors, such as language proficiency and writing expertise, less attention has been paid to individual competence (e.g., self-rating accuracy) (Panadero et al., 2016). Since writing assessment is increasingly employed as an instructional technique to develop writing

competence, students are expected to provide accurate judgments of their own performance (Panadero et al., 2016; Chang & de Lemos Coutinho, 2022).

Self-rating accuracy, which reflects students' ability to apply writing assessment rubrics to accurately assess their own writing (Panadero et al., 2016), is a variable that may affect the impact of revisions on improvement outcomes. As a metric, self-rating accuracy quantifies the discrepancy between student and teacher ratings with a difference score, with the latter's ratings serving as the benchmark (Han & Riazi, 2018; Wang et al., 2017). The smaller the differences between the two ratings, the more precise the students' evaluations. Prior research has explored factors influencing self-rating accuracy (González-Betancor et al., 2019), changes in accuracy over time (Han & Riazi, 2018), and pedagogical strategies to enhance accuracy (Zhang & Zhang, 2022). However, the moderating role of self-rating accuracy in the relationship between writing revision and writing improvement has not been given due attention in previous studies. Research suggests that self-rating accuracy could impact students' revision behavior (Andrade & Valtcheva, 2009; Authors, 2023; MacArthur, 2018). For instance, Authors (2023) investigated self- and peer assessment in academic writing with 28 Hong Kong undergraduates using mixed methods. Students with inaccurate self-rating tended to overlook further revisions. However, the relationship between self-rating accuracy and writing improvement (i.e., the score difference between the original draft and the revision draft) was not examined in this study. Further research is needed to understand the impact of self-rating accuracy on writing revisions and potential improvements.

This study thus explores the effects of writing revisions (revision amount and revision function) on writing improvement and how self-rating accuracy moderates these effects. This study thereby contributes to the literature by revealing the mechanism by which writing revisions can work with self-rating accuracy to improve students' writing. It has practical implications for teachers helping students with varying levels of self-rating accuracy to make revisions to improve their writing.

Literature Review

Writing Revisions and Improvement

Writing revision is a specialized writing activity providing students with opportunities to reformulate their work (Chen & Zhang, 2019). A substantial body of research has examined the relationship between writing revision and writing improvement using a revision taxonomy (e.g., Authors, 2023; Lam, 2013; Min, 2006; Wu & Schunn 2021), which helps capture writers' revision behaviors from various perspectives. Despite differences in taxonomies used across research, the two most commonly utilized categories are revision amount and function, operating at the macro and micro levels, respectively. Specifically, revision amount indicates the quantity of revisions students make to a text, further subdivided into surface revision and meaning revision (Wu & Schunn, 2021). Surface revision does not change the meaning of the original text, whereas meaning revision does. Existing research shows a positive effect of revision amount on writing performance (Authors, 2023; Wu & Schunn, 2021). However, research has also drawn opposing conclusions; revision amount may have no effect, or even a negative effect on writing improvement for less experienced writers (Barkaoui, 2016; Crawford

et al., 2008).

Revision function concerns textual clues in revisions, through which researchers can understand the writer's purpose (Lam, 2013; Min, 2006). It can be further subdivided into five specific functions: grammar, cosmetic, texture, unnecessary expressions, and explicature. Each function illustrates the writers' revision purposes, from making the text grammatically correct to more explicit. Different functions play unique roles in improving a text at the local level (Lam, 2013; Min, 2006). However, any single revision function is insufficient to improve writing at the global level (Min, 2006), because improvements in overall text quality necessitate multiple functions. Xu (2018) indicates that inexperienced writers have to concentrate on linguistic and grammatical revisions, which may impede the attention they pay to other revision functions and result in little text improvement. However, Barkaoui (2016) argues that, compared to less experienced writers, experienced writers tend to evaluate texts from various dimensions, from language correction to text clarity and enrichment. As a result, these writers might intentionally achieve more functions in their revisions that substantially help improve the quality of the whole text. While it is crucial to integrate different functions and examine their overall effect on improvement outcomes, little empirical research has investigated the relationship between various revision functions and writing improvement.

Findings on the relationships between writing revision amount, function, and improvement have not reached a consensus, perhaps because previous research has not considered revision amount and function in tandem. Revision amount describes text changes at the macro level and may not make evident specific attempts made by students to improve their writing. Revision function can complement revision amount by clarifying students' intentions and goals in a more elaborate manner. The combined use of revision amount and function reflects an issue students face regarding whether they should focus more on making as many changes as possible (i.e., revision amount) or revising their writing in greater depth (i.e., revision function) (Chen & Zhang, 2019; MacArthur et al., 2015). Research primarily explores the relationship between writing revisions and improvement outcomes, without taking into account other factors related to students' competence (e.g., self-rating accuracy) that may influence this relationship. The present study investigates the effects of both revision amount and revision function on students' writing improvement, alongside a consideration of self-rating accuracy as a moderator.

The Moderating Role of Self-Rating Accuracy

Among factors that might influence the relationship between writing revisions and improvement, research has examined the moderating role of students' individual competence. Individual language proficiency and writing expertise are important; they actively interact with various aspects of writing, including planning, composition, and revision (Barkaoui, 2016; Cho & MacArthur, 2010). Students' self-assessment ability, which involves providing quantitative evaluation of and qualitative feedback on their own writing, also plays a role (Brown et al., 2015). Students' ability to provide an accurate evaluation of their own performance, referred to as self-rating accuracy, is crucial. According to a criterion-based approach (Han & Riazi, 2018; Wang et al., 2017), self-rating accuracy is defined as the difference between student self-ratings and teacher ratings (set as criterion ratings) against the same assessment rubric. Students often

provide inaccurate self-ratings, which further influences their engagement with feedback (Authors, 2023). To improve self-rating accuracy, strategies such as regular self-rating activities in the classroom have been suggested (Chang & de Lemos Coutinho, 2022). Building on these prior works, we explore how self-rating accuracy may affect the effectiveness of writing revision on improvement outcomes.

Since self-rating accuracy is determined by the difference between student self-ratings and teacher ratings (which serve as the benchmark), based on the same evaluation rubric, the closer the distance between the two ratings, the higher the level of self-rating accuracy. Research has documented the interaction between self-rating ability and learning behaviors of student writers. Students who are skilled at self-rating tend to use information obtained from evaluations and reflect on the overall quality of their compositions through frequent comparisons with the assessment rubric (Andrade & Valtcheva, 2009). These students may also consciously apply strategies to make revisions that lead to substantive performance improvement (MacArthur, 2018). It is possible that students' self-rating accuracy acts as a moderator influencing the relationship between writing revisions and improvement outcome.

Informed by existing literature, this study establishes a research model (Figure 1) through which to explore two issues: (1) the impact of writing revisions on writing improvement; and (2) the moderating role of self-rating accuracy in the relationship between writing revisions and writing improvement.

<insert Figure 1 here>

Methods

Context and Participants

This study is part of a larger research project examining how undergraduate Chinese students learn from classroom assessments, including self- and peer-assessment, in a Chinese language learning context (Authors, 2021). Participants were Chinese undergraduates enrolled in an academic writing course to improve their research methods and academic language skills. The Education Bureau's Assessment for Learning (AfL) approach was used to promote student-centered learning in higher education, which familiarized participants with self- and peer-assessment (Curriculum Development Institute, 2004).

A total of 116 students gave consent to participate in this study. Two students were excluded due to incomplete self-rating data, resulting in a final sample of 114 participants (M_{age} = 21.96, SD = 1.05, 77.2% female). Chinese is their first language.

Materials

Writing Task and Rating Rubrics

Composing an abstract is an essential learning task to develop students' competence in

academic integrated writing. The students participating in this study were asked to write an abstract for a Chinese empirical research article. The article was chosen for two reasons: It had no abstract attached and its content regarding classroom language teaching challenges was relevant.

The students' written abstracts were assessed across five dimensions: research purpose, method, findings, implications, and language conventions (Authors, 2021). The rubric aligned with the commonly used "IMRaD" (introduction, method, results, and discussion) structure for social sciences (Tabuena, 2020) and emphasized the importance of readability. Each dimension had five levels of descriptors indicating typical strengths and weaknesses, with scores ranging from zero to eight (maximum total score: 40). This rubric design was approved by the Curriculum Review Board of the university where the study was conducted.

Procedure

Students were taught how to write an abstract and use the rating rubrics by attending a 50-minute lecture in the first of two weeks. They rated an abstract exemplar provided by their teacher to assess their understanding and application of the rubrics in groups of four. Each group's rating was discussed in class to enhance consistency with the teacher's understanding of the rating rubrics. Students were then given 80 minutes to write and submit their own abstracts on the online platform. After submission, they had 20 minutes to review and score their own work across the five dimensions. In the second week, the students spent 30 minutes reading, scoring, and commenting on each other's abstracts in pairs, followed by 50 minutes revising their own text based on the assessment information provided by their partners. The revised abstracts were submitted to the platform.

Marking and Coding

Abstract Writing Quality

Two experts (the third author of this article and a course teacher), both with over 10 years of experience teaching academic writing, marked the students' first and final abstracts, following the rating rubrics. Before scoring, a meeting was held to ensure both markers had a consistent and accurate understanding of the rubrics. Roughly half of the first and final abstracts were double marked and the results reviewed. A mean score was used in cases where the gap between the two scores was less than two; otherwise, a score provided by a third marker (another teacher on the same course) was introduced and the score was averaged with the closest score rated by one of the two original markers. The inter-rater reliability for the double-marked data was calculated using the intraclass correlation coefficient, with 0.88 for the first abstract and 0.82 for the final abstract, indicating good inter-rater reliability. The remaining abstracts were independently marked by the third author of this article. Writing improvement was computed as the score for the final abstract subtracted from the score for the first abstract.

Self-Rating Accuracy

To compute self-rating accuracy, first, the difference between student self-rated scores and teacher-rated scores for the first abstract was calculated, with a higher difference indicating less accurate self-evaluation. To make this association easier to understand, the resulting value from the first step was reverse-coded. The maximum resulting value of 19 was subtracted from each student's individual resulting value, yielding their self-rating accuracy value. If a student self-rated their first abstract as 25, and the teachers rated it as 20, the resulting value from the first step would be 5. Subtracting 5 from the maximum resulting value of 19 would yield a self-rating accuracy value of 14. A higher self-rating accuracy value indicates more accurate self-evaluation by the students.

Writing Revisions Coding

The first author and a trained research assistant coded the writing revisions. Before coding, the two coders and all authors of the study established a consistent understanding of the coding scheme through discussion and trial coding of 10 random sets of writing revisions. One coder continued to code all remaining sets of writing revisions; the other coded half of the writing revisions independently. Conflicts were resolved through discussion to minimize coding noise. The inter-rater reliability for the double-coded data was computed using Cohen's kappa. Appendix A details the coding scheme.

Revision Amount. The MS Word Compare Documents function was used to track the changes between the first and final abstracts. Revision amount was coded as the presence or absence of "surface revision" and "meaning revision" (Wu & Schunn, 2021); surface revision refers to revisions not affecting the original meaning of the text, whereas meaning revision refers to revisions that did (see Appendix A). Format changes were not considered. After adding up the surface and meaning revisions made by each student, a total of 490 revisions were found for revision amount (Kappa = 0.80).

Revision Function. After re-examining the differences between students' first and final abstracts, two major adaptations to Lam's (2013) classification of revision function were made. First, the "grammatical" function was removed, since we did not observe revisions making the text grammatically correct. This may be due to the L1 (Chinese as a first language) backgrounds of participants. Their familiarity with the Chinese language enables them to apply language conventions with ease and accuracy (Authors, 2016). Second, the "unnecessary expression" function was adapted to "relevance". This function refers to taking away unnecessary information to simplify the text and preserve meaning (Lam, 2013). Students would sometimes delete information altering the meaning of the text in order to promote the relevance of the content. This may be due to the genre characteristics of the abstract. A high-quality abstract required students to balance the relationship between intensive information and limited space (Lon et al., 2012). Thus, the students may have deleted irrelevant information. Revision function was considered to span four categories in this study (see Appendix A): cosmetic (Kappa = .78), texture (Kappa = .83), relevance (Kappa = .88), and explicature (Kappa = .82).

"Revision function" was treated as a continuous variable through two steps: (1) counting the presence (assigning the value of one) or absence (assigning the value of zero) of each revision function in every rating criterion of abstract writing; and (2) summing up all function categories across the five dimensions of the rubrics. The higher the value, the more functions achieved.

Statistical Analyses

Data collected from the marking and coding processes were entered into SPSS 25.0 for statistical analysis. Since all relevant variables were treated as continuous variables, descriptive statistics were first carried out to examine the data's distributional characteristics. Pearson correlation analysis was used to measure the relationships among writing revisions (revision amount and revision function), self-rating accuracy, and writing improvement. Hierarchical linear regression analysis explored: (1) the impact of writing revisions on writing improvement; and (2) the moderating role of self-rating accuracy in the relationship between writing revisions and writing improvement. We chose this regression approach over others (e.g., stepwise) to seek out the individual contributions of each predictor (i.e., independent variables, moderating variables, and interaction variables) to the outcome variable, rather than identify a collection of the best predictor variables. The assumptions required for regression analysis, including linear relationships, outliers, normal distribution, homoscedasticity, and multicollinearity, were tested before regression. No predictor variable had a variance inflation factor (VIF) greater than 2, indicating there were no multicollinearity problems.

Results

Descriptive Statistics and Correlation Analysis

Table 1 shows the descriptive statistics results. The mean values for revision amount and revision function were 4.30 and 3.15, respectively. The mean values for student self-rated and teacher-rated scores were 28.44 and 22.33, respectively. The results indicate that students appear to be positive about their performance. The mean values for self-rating accuracy and writing improvement were 12.04 and 3.76, respectively. All absolute values of skewness and kurtosis were less than three, indicating normal distributions.

<insert Table 1 here>

The results of the correlation analysis of the primary variables are shown in Table 1. Revision amount (r = 0.29) and revision function (r = 0.38) were positively correlated with writing improvement. Student self-rated scores were negatively correlated with revision amount (r = -0.31) and revision function (r = -0.36), but not with writing improvement. Teacher-rated scores were negatively correlated with writing improvement (r = -0.44) but not with student self-rated scores, revision amount, or revision function. Self-rating accuracy was positively correlated with revision amount (r = 0.32) and revision function (r = 0.22). Students with higher self-rating accuracy may have generated more revisions and achieved more revision functions. Self-rating accuracy was also negatively correlated with writing improvement (r = -0.24). All of the absolute correlation coefficients between these variables were weak or moderate, ranging from 0.22 to 0.68 at the $p < 0.05$ or $p < 0.01$ level.

Moderating Effect Analysis

The results of the hierarchical regression analysis are reported in Table 2. In Step 1, revision amount and revision function were entered as independent variables, explaining 15% of the variance in writing improvement (R square = 0.15). Step 2 added self-rating accuracy as the moderating variable, explaining an additional 12% of the variance (R square difference between Steps 1 and 2). In Step 3, the independent and moderating variables and their interaction terms were included, explaining an additional 19% of the variance (R square difference between Steps 2 and 3) caused by their interaction terms. To avoid collinearity, the variables were centralized.

<insert Table 2 here>

The five variables accounted for 46% of the total variance in writing improvement ($p < 0.001$). In the full model, revision amount ($\beta = 0.28$, $p = 0.006$), revision function ($\beta = 0.29$, $p = 0.004$), and self-rating accuracy ($\beta = -0.37$, $p < 0.001$) had significant impacts on writing improvement. The interactions between revision amount and self-rating accuracy ($\beta = -0.61$, $p < 0.001$) and between revision function and self-rating accuracy ($\beta = 0.32$, $p = 0.003$) significantly predicted improvement outcomes. The relationships between revision amount and writing improvement, and between revision function and writing improvement were moderated by self-rating accuracy.

A simple slope analysis revealed that revision amount positively predicted writing improvement when self-rating accuracy was low (-1 SD; $\beta = 2.31$, S.E. = 0.40, $p < 0.001$, and 95% CI = [1.52, 3.10]), and negatively predicted writing improvement when self-rating accuracy was high (+1 SD; $\beta = -0.78$, S.E. = 0.35, $p = 0.026$, and 95% CI = [-1.46, -0.10]). The increase in revision amount enhanced writing improvement among students with low self-rating accuracy, while the increase in revision amount weakened writing improvement in those with high self-rating accuracy (Figure 2).

<insert Figure 2 here>

Revision function positively predicted writing improvement when self-rating accuracy was high (+1 SD; $\beta = 1.63$, S.E. = 0.40, $p < 0.001$, and 95% CI = [0.86, 2.40]); if self-rating accuracy was low (-1 SD), revision function did not predict writing improvement ($\beta = -0.09$, S.E. = 0.37, $p = 0.814$, and 95% CI = [-0.81, 0.64]). Increases in revision function enhanced writing improvement among students with high self-rating accuracy, but did not have a significant impact on those with low self-rating accuracy (Figure 3).

<insert Figure 3 here>

Discussion

Student Self-Rated Scores and Teacher-Rated Scores

The correlation analysis indicated negative relationships between student self-rated scores and writing revisions (amount and function). This aligns with the findings of Authors (2023), suggesting that students who rated themselves highly are inclined to neglect further revisions. High self-rated scores often indicate confidence in current performance (Sanchez et al., 2017), leading to fewer revisions in both amount and function as students may perceive their writing as already high-quality.

The study found a negative correlation between teacher-rated scores and writing improvement. Writing improvement was measured as the difference between two drafts. High teacher-rated scores limit the scope for score increase, while low scores allow for greater room for score increase, thus explaining the negative correlation between teacher-rated scores and writing improvement.

No significant correlation was found between student self-rated scores and teacher-rated scores, consistent with Authors (2023), who discovered a significant difference between these two scores. It appears that most students experience difficulty providing accurate evaluations of their own work. We propose practical suggestions for teachers to improve students' self-rating accuracy in the following sections.

The Effects of Writing Revisions on Writing Improvement

Writing revisions were characterized by revision amount and revision function. In Step 1, revision amount did not have a significant impact on writing improvement. This is partially consistent with previous research (Barkaoui, 2016; Crawford et al., 2008; Paulus, 1999), which found no or negative relationships between these variables. This may be due to the unusual measurement of writing revisions, since previous research (e.g., Paulus, 1999) has not counted the high quantity of meaning-preserving revisions made by students (Min, 2006), raising concerns about finding an appropriate approach to measure writing revisions. Linking the quality of a text to revisions exclusively at the level of changing meaning may diminish the value of meaning-preserving revisions in promoting the interconnectedness of written discourse (Hillocks, 1995; Min, 2006) and give a false impression that only revisions altering the meaning of the text improve writing. The present study refined the measurement of writing revisions by incorporating both surface and meaning revisions (i.e., meaning-preserving and meaning-changing revisions), but still found similar results. The impact of revision amount may not concurrently take into account individual students' competence. When including self-rating accuracy and its interaction with revision amount, a positive significant effect of revision amount on improvement was found. This result (Step 3) is discussed in the next section.

The Step 2 results indicated a positive relationship between revision function and writing improvement; the integration of multiple revision functions helps students improve the quality of their writing to a greater extent. More revision functions achieved by students indicated they reviewed and evaluated their writing more elaborately and were more likely to refine the text at both local and global levels. Since revision function represents students' revision intentions, revisions motivated by specific purposes are more advantageous than aimless revisions (Huang,

2015; Midgette et al., 2008).

The Moderating Effect of Self-Rating Accuracy on the Relationship between Writing Revisions and Writing Improvement

The Step 3 results further suggest that self-rating accuracy had moderating effects on the relationship between writing revisions and improvement outcomes. While writing revisions can positively affect students' writing improvement, in some cases, they appear to have no or even negative effects (Barkaoui, 2016; Crawford et al., 2008), as the role of writing revisions is regulated by individual difference variables. The current study demonstrated that self-rating accuracy, which indicates students' ability to provide an accurate evaluation of their own performance, is a crucial variable.

The results show that increases in revision amount for students with low self-rating accuracy boost their writing improvement. Low self-rating accuracy suggests students may not only lack knowledge of the rubric they could use to review, evaluate, and revise their work (MacArthur, 2007), but may also fail to detect and diagnose problems through frequent comparisons of their work with the rubric. An optimal strategy for low self-rating accuracy students involves searching for incongruities between their writing and the rubric, rather than struggling to identify and solve particular problems. Berg (1999) and Chen and Zhang (2019) suggest incongruity or dissonance between expected and understood meaning plays an important role in causing writers to revise. It encompasses more than just text mistakes or problems; it involves intuitive disagreement, discontent, and/or discomfort (Berg, 1999; Myhill & Jones, 2007). The process of discovering incongruities may motivate writers to generate more revision amount in a broader area of the text, increasing their likelihood of covering text problems they did not identify and leading to positive improvements.

This strategy does not work for students with high self-rating accuracy. More revision functions, rather than revision amount, were noted among these students, resulting in greater writing improvement. Students who are proficient at evaluating themselves are usually metacognitive skilled; they are therefore more likely to apply effective strategies (e.g., self-checking) in their revisions (Lee & Mak, 2018). They may conduct systematic text evaluations, from word-level modification to global text refinement. More revision functions are achieved, yielding improvement outcomes. Furthermore, students with self-evaluation abilities usually have clear performance-approach goal orientations (Lee & Mak, 2018; Midgette et al., 2008). They conduct purposeful revisions through frequent comparisons and deliberations between their current text and their goal to attain higher scores.

Conclusion and Implications

The research findings indicate that revision amount and revision function have positive effects on writing improvement. Self-rating accuracy moderates the relationship between writing revisions and writing improvement. Low self-rating accuracy students are more likely to improve their writing by increasing revision amount, while high self-rating accuracy students are more likely to do so by using more revision functions.

It is recommended that rating accuracy is treated as an assessment-related form of individual competence. Teachers can employ certain strategies to facilitate students' exposure to rating

activities. For example, self-rating could be organized as a regular classroom assessment activity, as well as incorporated into homework assignments that allow for revisions. This will familiarize students with rating processes and help them understand how self-rating supports their learning, consequently increasing their sense of responsibility in self-evaluation (Chang & de Lemos Coutinho, 2022). As self-rating accuracy is determined by the difference between student self-ratings and teacher ratings against the same assessment rubric, teachers should increase students' awareness of the difference between their ratings and teacher ratings. Additionally, teachers can provide clear guidance on how to identify strengths and weaknesses in their work by encouraging students to compare their writing to the rubric during the self-assessment process (Yan & Carless, 2022). This will help students to better evaluate their own work and make more informed revision decisions.

Teachers can also offer tailored assistance to students with different levels of rating accuracy. Low self-rating accuracy students should be encouraged to make revisions regarding incongruity or dissonance in the text. It is recommended that teachers demonstrate to students how to detect and resolve inconsistencies in written works at both local and global levels, as well as how to generate a more coherent text both in content and style (Chen & Zhang, 2019). High self-rating accuracy students should be taught to avoid aimless revisions. Since multiple revision functions describe a range of textual clues (Min, 2006), teachers can guide students in order to help them produce purposeful revisions.

Limitations

This study has several limitations. First, due to space constraints, the current study primarily investigated the moderating role of self-rating accuracy, omitting other possible moderating factors, such as the quality of qualitative comments provided by peers. Future research could include more factors and examine whether there exist moderated mediation effects of writing revisions on writing improvement. Second, the study's limitation is its single quantitative methodology, potentially introducing common method bias. Future research should incorporate qualitative data, such as semi-structured interviews, to investigate students' qualitative growth in writing among students with varying levels of self-rating accuracy and explore influential factors like goals. Finally, future research could continue to explore additional potential roles of self-rating accuracy in writing, such as its use as a mediating or control variable. For example, as Chen and Zhang (2019) suggest, writing revision provides students with opportunities to evaluate and reflect on their work. Through frequent comparison to assessment rubrics, increased familiarity with the rubrics may lead to improved self-rating ability, which may in turn affect writing improvement (i.e., writing revisions → self-rating accuracy → writing improvement). These explorations may enhance our understanding of the role of self-rating accuracy in writing.

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