Journal of Curriculum and Teaching; Vol. 15, No. 4; 2026
ISSN 1927-2677 E-ISSN 1927-2685
Published by Sciedu Press

From Expansion to Correction: Online Revision Patterns in EFL Writing

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Received: January 18, 2026 Accepted: September 6, 2026 Online Published: October 9, 2026

doi:10.5430/jct.v15n4p37 URL: https://doi.org/10.5430/jct.v15n4p37

Abstract

Writing is one of the most cognitively demanding skills for language learners, and the growing use of online co–editing platforms has reshaped how students draft, revise, and negotiate meaning collaboratively, however, limited research has examined how Saudi language learners specifically engage in this revision process. This study investigates how female university students develop English as a Foreign Language (EFL) writing through online revisions. Using the online revision behavior (ORB) framework (adapted from Faigley and Witte's (1981) taxonomy and Storch's (2005) model) three undergraduate students collaborated on a writing task via a co–editing platform. Revision instances were coded as expansion, rephrasing, correction, reorganization, or deletion and analyzed quantitatively. Results showed rephrasing (35.3%) and expansion (30.1%) were most frequent, followed by correction (18.8%) and reorganization (15.8%), while deletion was absent. These patterns suggest that learners prioritized refining their expression and elaborating their ideas, reflecting a constructive, meaning–building approach. The findings highlight how online writing environments foster attention to both linguistic accuracy and rhetorical development. Pedagogically, this study supports integrating co–editing tools with explicit revision training to promote autonomy, reflection, and process–oriented EFL writing instruction.

Keywords: online revision behavior framework (ORB), EFL writing, revision analysis, Saudi language learners, process writing

1. Introduction

Writing is widely recognized as one of the most cognitively demanding skills in second and foreign language learning (Al–Ahdal, 2020; Li & Lan, 2022; Saaty, 2025). It requires learners to draw on linguistic knowledge, rhetorical awareness, and contextual understanding to construct coherent and meaningful texts (Saaty, 2023). For English as a Foreign Language (EFL) learners, writing development is often hindered by limited exposure to authentic English input, insufficient feedback opportunities, and the dominance of teacher–centered instruction (Al–Khairy, 2013; Fareh, 2010). Within the Saudi educational context, writing instruction has historically emphasized grammatical correctness (Elyas & Picard, 2010) and product–oriented assessment, offering few opportunities for students to draft, revise, and reflect on their writing processes (Saaty, 2018).

Recent developments in digital technology have transformed these dynamics by enabling students to collaboratively compose, review, and revise online (Kessler & Bikowski, 2010). Platforms such as Google Docs, Wikis, and other co–editing tools create interactive environments wherein learners can share drafts, respond to peers' suggestions, and observe textual changes in real time. These environments encourage process–oriented learning in which writing is regarded as recursive and developmental rather than linear and static (Flower & Hayes, 1981; Saaty, 2018; Zamel, 1983). In such contexts, revision becomes not only a mechanical step but a critical stage for meaning negotiation, rhetorical adjustment, and linguistic refinement (Faigley & Witte, 1981).

This study builds on this pedagogical and technological shift by examining how female Saudi EFL learners engage in online revision while co–developing a shared text. It focuses on how visible changes—insertions, deletions, rewording, and reorganization—reflect learners' linguistic, cognitive, and rhetorical engagement. Rather than

viewing revision as error correction, this study conceptualizes it as a process of meaning construction and text improvement embedded within social interaction and mediated through digital platforms.

The study's focus on female learners is contextually grounded in the structure of education in Saudi Arabia, where public universities are sex–segregated and male and female students are taught in separate academic environments. Consequently, female students' learning experiences, interactional practices, and access to collaborative opportunities may differ significantly from those of their male counterparts. Therefore, examining female Saudi EFL learners' online writing revision practices provides situated insight into writing development within women–only academic contexts that remain underrepresented in EFL research.

1.1 Purpose and Significance of the Study

This study investigated how female Saudi EFL university students engage in online text development through visible revision behaviors. It aimed to identify and analyze the types of revisions students make when co–developing a shared text in a digital environment. Moreover, it quantified revision instances and interpreted their pedagogical significance to reveal how learners negotiate meaning, refine language, and reorganize ideas throughout the online writing process.

This study is significant for several reasons. First, it contributes to a growing body of scholarship emphasizing revision as a central process in language learning, extending beyond error correction to encompass conceptual and rhetorical development. Second, it provides empirical evidence from the Saudi EFL context, where writing instruction has traditionally emphasized grammatical accuracy and teacher–centered corrections (Al–Khairy, 2013; Fareh, 2010). Focusing on online co–editing, this study highlights the role of digital environments in promoting learner agency, peer support, and iterative reflection, aligning with process–oriented and sociocultural approaches to writing pedagogy (Flower & Hayes, 1981; Vygotsky, 1978).

Finally, this study builds directly on the findings by Saaty (2018), which explored Saudi graduate students' writing practices and discourse strategies in Wiki–supported contexts. While that earlier work examined perceptions and discourse–level strategies, the current study extends this line of inquiry by focusing on observable revision behavior—the concrete textual evidence of how learners develop their language and writing skills together through online interaction. By systematically categorizing and quantifying revision types, this study offers new insights into the dynamics of peer–supported online writing and its pedagogical potential for fostering linguistic and rhetorical growth among Saudi EFL learners.

1.2 Literature Review

1.2.1 Revision as a Core Component of Writing Development

Writing in a second or foreign language is not a linear process but a recursive one that involves planning, drafting, reviewing, and revising (Flower & Hayes, 1981; Zamel, 1983). Within this process–oriented perspective, revision plays a crucial role as it allows writers to reevaluate both form and meaning while refining their ideas and linguistic choices (Li, 2013). Through revision, learners move from initial expression to more sophisticated written output, reflecting growth in grammatical accuracy, lexical control, and rhetorical awareness (Hyland, 2019). For EFL learners, revision provides an opportunity for language–related reflection, enabling them to become more aware of how linguistic and structural decisions shape meaning. Therefore, revision serves as both a cognitive activity and a learning mechanism, helping writers internalize new forms and strategies through repeated engagement with the text.

1.2.2 Revision in Digital and Peer–Supported Writing Contexts

With the widespread integration of technology into education, digital writing platforms have become essential spaces for writing instruction and revision (Li, 2013). Research has shown that online co–editing tools such as Google Docs and Wikis promote active learner engagement, allowing writers to track changes, exchange feedback, and negotiate revisions in real time (Kessler, 2009; Li, 2013; Li & Zhu, 2017). These digital affordances shift the focus from teacher–directed correction to peer–supported text development, empowering learners to take ownership of the writing process (Storch, 2005). In EFL settings, digital tools have also been found to enhance learner motivation and collaborative interaction (Al–Khairy, 2013; Fareh, 2010; Li & Kim, 2016). By enabling learners to make their revisions visible and retrace the evolution of their texts, such tools provide valuable opportunities for reflection and self–assessment (Chung, Chen, & Olsen, 2021). Moreover, in digital and peer–supported writing contexts, writing is conceptualized as an evolving act of thinking and communicating, rather than a finished product (Arnold, Ducate, & Kost, 2012).

1.2.3 Online Peer Interaction and Revision Practices in EFL Writing

Recent research on online peer interaction and revision practices in digital writing environments has highlighted the evolving relationship between technology use, self–regulation, and textual development. Li and Hebert (2024) demonstrated that online peer–mediated revision and self–reflection significantly enhanced L2 students' engagement with content–level revisions and metacognitive awareness. Their findings revealed that learners benefit not only from receiving peer feedback, but also from reflecting on it to make meaning–level changes, underscoring the role of digital tools in fostering self–regulated revision behavior. Similarly, Abdelhalim (2025) found that Saudi EFL majors employed a range of self–regulated writing strategies in online contexts, with high–proficiency learners displaying greater metacognitive control, environmental management, and behavioral regulation. Both studies converge on the idea that online writing environments promote autonomy and strategic engagement, aligning with sociocultural theory (Vygotsky, 1978) that emphasizes the interaction between personal, behavioral, and contextual factors in writing development.

Complementary studies focusing on technology–mediated learning environments have reinforced these findings by illustrating how online writing platforms create dynamic spaces for text development, interaction, and revision. Abdul Rabu and Badlishah (2020) reported that peer interaction through Google Docs is predominantly collaborative in nature but also engages cognitive and metacognitive dimensions, supporting deeper reflection and knowledge construction. Similarly, Amin (2020) reviewed research on Google Apps in language education and concluded that tools such as Google Docs enhance learners' participation, reflection, and textual refinement by enabling synchronous and asynchronous editing. These insights resonate with the pedagogical value of digital mediation in revision–focused writing instruction, wherein learners engage in expansion, rephrasing, and reorganization as social and cognitive acts. Collectively, these studies demonstrate that online writing environments serve as fertile contexts for developing writers' revision awareness and linguistic agency—core dimensions captured in the current study's online revision behavior (ORB) framework, which operationalizes both surface–level and text–based revision as interdependent facets of online meaning construction.

1.3 Conceptual Framework

The conceptual framework guiding this study integrates two complementary perspectives on writing revision: (1) the cognitive–linguistic dimension, which distinguishes between surface–level and text–based changes, and (2) the sociocultural dimension, which views revision as a socially mediated act of meaning construction. Together, these perspectives provide the theoretical grounding for the ORB framework developed and applied in this study.

1.3.1 Revision as Surface–Level and Text–Based Changes

Faigley and Witte's (1981) seminal model of revision established a foundational distinction between two types of textual change: surface–level and text–based revisions. Surface–level revisions involve corrections that do not alter the text's meaning, such as adjustments in grammar, spelling, or word form, whereas text–based revisions include additions, deletions, or reorganizations that modify meaning or rhetorical structure (Godwin–Jones, 2018). This framework advanced the understanding of revision as a multidimensional process in which the depth and purpose of change signal varying levels of cognitive engagement.

Subsequent research on second language writing (e.g., Connor & Asenavage, 1994; Paulus, 1999) has expanded on Faigley and Witte's taxonomy to examine how revision behaviors reflect learners' developing proficiency and rhetorical awareness (Godwin–Jones, 2018). These studies have demonstrated that a higher proportion of text–based revisions is typically associated with greater writing maturity, as learners move beyond surface–level correction toward meaning–making and content organization.

The current study extends this tradition by employing the ORB framework, which operationalizes Faigley and Witte's (1981) categories into five analytically distinct codes: expansion, rephrasing, correction, reorganization, and deletion. These categories capture both surface– and text–based revision behaviors observable in online writing platforms, allowing for the systematic analysis of how writers alternate between linguistic accuracy and content development during the drafting process.

1.3.2 Revision as Socially Mediated Meaning Construction

While revision involves individual decision–making, it is also fundamentally a socially mediated process through which meaning is co–constructed among writers. Building on Vygotsky's (1978) sociocultural theory, Storch (2005) introduced the concept of language–related episodes (LREs), moments in which learners engaged in collaborative writing focus on language forms, discuss alternatives, and co–construct solutions. Such interactions promote deeper cognitive processing and facilitate the development of both accuracy and complexity in learners' written output (Li

& Kim, 2016).

In the present study, this sociocultural perspective directly informed the dual structure of the ORB framework. By distinguishing between surface–level (form–focused) and text–based (meaning–focused) revisions, the ORB captures how online peer interaction facilitates both linguistic refinement and rhetorical development. This view positions revision not as the final stage of editing, but as a dynamic, recursive process through which writers mediate meaning, negotiate language choices, and collaboratively shape text in digital environments.

1.3.3 Integration and Application of the ORB Framework

The ORB framework synthesizes the cognitive and sociocultural perspectives discussed above, providing a unified lens for analyzing online writing development. Drawing on Faigley and Witte's (1981) distinction between surface–level and text–based revisions, the ORB framework categorizes observable textual changes according to their linguistic depth and communicative impact. It also incorporates Storch's (2005) and Vygotsky's (1978) sociocultural principles, viewing revision as a socially mediated process of meaning negotiation.

The integration of these perspectives allows the ORB framework to operationalize revision into five categories—expansion, rephrasing, correction, reorganization, and deletion—that capture both individual cognitive engagement and collaborative meaning–making. Within this framework, surface–level changes (rephrasing and correction) represent form–focused attention to linguistic precision, whereas text–based changes (expansion, reorganization, and deletion) signify deeper rhetorical and conceptual development. The ORB framework thus bridges the linguistic, cognitive, and social dimensions of writing, offering a comprehensive analytical tool for examining how Saudi EFL learners construct, refine, and negotiate writing in online environments.

1.3.4 Linking to Prior Research

Previous studies highlighted revision as both a cognitive and social process that drives language development. Faigley and Witte's (1981) distinction between surface–level and text–based revisions provided a structural lens for identifying the depth of revision, whereas Storch's (2005) interactional framework emphasized the social and dialogic nature of textual improvements. These perspectives converge in the ORB framework used in this study, which classifies observable textual changes into five categories: expansion, rephrasing, correction, reorganization, and deletion.

This study extends Saaty's (2018) line of inquiry, which examined female Saudi graduate students' engagement with Wiki–supported peer interaction. Using the ORB framework inspired by Faigley and Witte (1981) and Storch (2005), this study investigates how visible changes in online documents reflect learners' evolving linguistic, rhetorical, and cognitive engagement. This focus on text–level behavior, rather than self–reported perceptions, provides a new perspective on how Saudi learners enact and internalize writing development in digital environments.

2. Method

2.1 Research Questions

The present article addresses the following research questions:

RQ1: What types of revision behaviors do female Saudi EFL students exhibit during online text development?

RQ2: How do revision behaviors vary among participants during the online writing process?

RQ3: To what extent do students' revision behaviors reflect both form– and meaning–focused engagement with the text?

RQ4: How does the use of online co–editing platforms facilitate revision as a process of linguistic and rhetorical development?

2.2 Research Design

This research was designed as a qualitative–quantitative case study because it is an in–depth investigation of the writing and revision behaviors of a single, naturally formed group of female Saudi EFL learners in an authentic classroom context. A case–study approach is appropriate when the objective is to gain a holistic understanding of a bounded phenomenon (Hartley, 2004), namely, the development of revision behavior in an online co–editing environment. Rather than seeking generalizable outcomes, this study aimed to provide a detailed and context–rich examination of how revision practices emerge, evolve, and interact with social and technological factors. The small number of participants (three writers) and the focus on a single shared document allowed for intensive, multi–layered

analysis, combining quantitative coding (via the ORB framework) with qualitative interpretation of textual evolution. This design yielded insights into both the individual and collective dimensions of writing development, illustrating how language learning processes unfold in actual instructional settings.

This study employed a mixed–method approach comprising both quantitative and qualitative elements to examine how female Saudi EFL students engaged in online text revision. The quantitative component involved categorizing and counting visible revisions using the ORB framework, whereas the qualitative component interpreted the pedagogical and developmental significance of these revisions in context. This study adopted a case–based approach, focusing on one group of students collaboratively composing and revising an English text in an online environment. This design conceptualizes writing as a recursive act involving multiple drafts, feedback cycles, and meaning negotiation (Faigley & Witte, 1981; Flower & Hayes, 1981; Zamel, 1983). The inclusion of revision analysis reflects a sociocultural orientation (Vygotsky, 1978), viewing writing development as mediated through interaction and shared textual construction.

2.3 Participants

The participants were three female Saudi undergraduates enrolled in an advanced academic writing course at a public university in Saudi Arabia. The participants, referred to by the pseudonyms—Noor, Leen, and Deema—had intermediate–to–upper–intermediate proficiency in English and prior experience using online tools for coursework.

The participants voluntarily engaged in an online writing activity as part of their class project. Their task was to compose and refine a short report on common challenges faced by Saudi English language learners. Each student contributed to drafting, revising, and editing the shared document using an online co–editing platform that automatically recorded version histories and user–specific edits. The writing task spanned approximately one week, during which participants accessed the shared document to draft, revise, and edit collaboratively.

All participants were informed that their writing data would be analyzed anonymously for research purposes. Informed consent was obtained before data collection. Pseudonyms were used throughout the study, and identifying details were removed from the dataset to ensure confidentiality. This research adhered to the institutional ethical guidelines for human subjects and digital data handling.

2.4 Data Collection Procedure

The primary data source was the revision history of the group. The document included visible traces of insertions, deletions, and rewordings contributed by each participant, which were identifiable through the platform's user–tagging system (see Figure 1).

The revision data were extracted and organized by author, date, and type of textual change. Each visible modification—whether lexical, grammatical, or structural—was treated as a distinct revision instance. Following established procedures in L2 revision research (Connor & Asenavage, 1994; Faigley & Witte, 1981), each revision instance was coded into one of five ORB categories. This allowed for a detailed and replicable quantitative analysis of the participants' revision behavior.



Figure 1. Data Collection Procedure

2.5 Analytical Framework: The ORB Framework

To systematically analyze the revision patterns, this study employed the ORB framework (Table 1), which was adapted from Faigley and Witte's (1981) taxonomy of surface– and text–based changes and Storch's (2005) framework for form– and meaning–focused engagement.

The ORB framework categorizes each revision instance into one of five distinct types:

Table 1. Online Revision Behavior (ORB) Framework

Category	Definition	Focus Type
Expansion	Adding new information, elaboration, or examples that extend the original meaning.	Text–based/meaning–focused
Rephrasing	Rewording existing content to improve clarity, fluency, or stylistic appropriateness.	Surface–level/form–focused
Correction	Fixing grammatical, lexical, or spelling errors to increase linguistic accuracy.	Surface–level/form–focused
Reorganization	Moving, combining, or dividing sentences or ideas to improve coherence and logical flow.	Text–based/meaning–focused
Deletion	Removing redundant, inaccurate, or irrelevant text to enhance focus and conciseness.	Text–based/meaning–focused

Operational definitions, inclusion/exclusion criteria, and coding examples are provided in Appendices A–C. This framework allowed us to identify whether revisions primarily targeted linguistic form (rephrasing, correction) or content and structure (expansion, reorganization, deletion), thus enabling the analysis of both surface–level and deep revisions.

2.6 Coding and Reliability Procedures

Each revision instance was manually reviewed and coded according to the ORB categories. To ensure consistency and replicability, a detailed coding sheet was maintained (see Appendix B). Each entry included the author's name, date, original and revised text, assigned category, and analytical notes explaining the rationale.

A coding guide (Appendix C) defines each category, outlining the inclusion and exclusion criteria. This procedure was designed to facilitate interrater reliability in future studies. Coding was first conducted separately for each participant (Noor, Leen, and Deema) and then aggregated to form an overall dataset representing group behavior.

3. Results

3.1 Quantitative Analysis

After coding, the frequency and percentage of each revision category were calculated for each participant and the combined dataset. This analysis addresses two main dimensions:

1. Individual Revision Behavior to identify variations among participants in the use of ORB categories.
2. Aggregate Revision Trends to determine the overall distribution of surface versus text–based revisions across all authors.

The data were summarized using descriptive statistics and visualized using bar and pie charts (see Figures 2–4).

The visual representations of the revision analysis are as follows: The bar chart shows how each author (Noor, Leen, and Deema) distributed their revision types, revealing individual editing styles and contributions. The pie chart displays the overall proportion of each revision type aggregated across all authors, highlighting that rephrasing and expansion dominated the writing process.

These visuals supported the interpretation of revision patterns: revealing how often each type of change occurred and how revision activities contributed to meaning construction, accuracy, and textual organization.

The methodology combined a process–oriented quantitative approach with a sociocultural interpretive lens to examine how female Saudi students engaged in online revision. Using the ORB framework, this study captured both the linguistic precision and rhetorical development inherent in participants' revision behavior. The coding structure (Appendices A–C) ensured analytical transparency, whereas the statistical summary provided a foundation for interpreting how learners negotiated meaning, form, and structure during online text development.

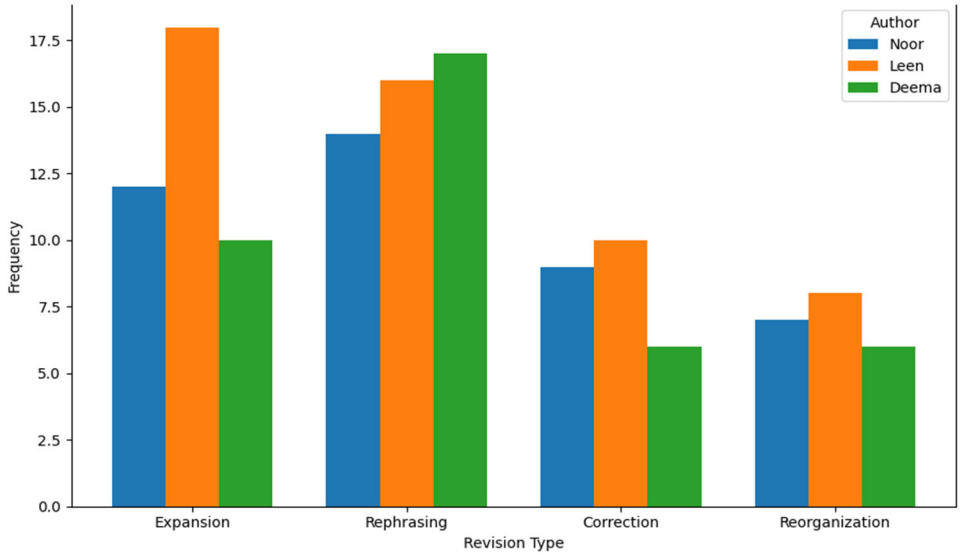


Figure 2. Revision Type Frequency by Author

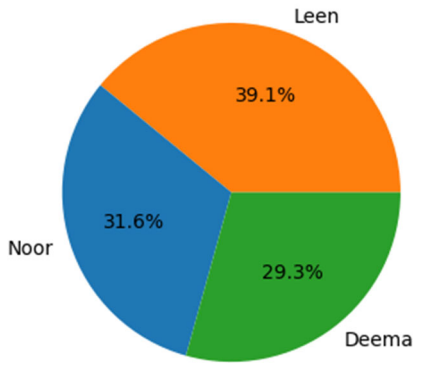


Figure 3. Distribution of Revisions by Author

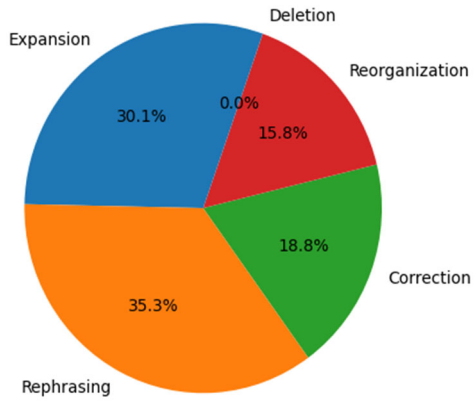


Figure 4. Overall Distribution of Revision Types

3.2 Noor's Revision Behavior

Table 2. Noor's Revision Behavior Pattern

Revision Type	Frequency	Percentage (%)
Expansion	12	28.6%
Rephrasing	14	33.3%
Correction	9	21.4%
Reorganization	7	16.7%
Deletion	0	0.0%
Total	42	100%

Noor's revision pattern (Table 2) indicated a balanced approach between content and language refinement. Rephrasing (33.3%) and expansion (28.6%) accounted for more than half of her total revisions, suggesting active engagement in improving clarity and developing ideas. Her moderate use of corrections (21.4%) reflected consistent attention to linguistic accuracy, whereas her reorganization (16.7%) showed an awareness of logical flow and cohesion. The absence of deletions suggests an additive rather than reductive approach—Noor preferred refining and extending rather than removing content. This pattern reflects mature engagement with both form and meaning, which is consistent with process–oriented writing strategies (Flower & Hayes, 1981).

3.3 Leen's Revision Behavior

Table 3. Leen's Revision Behavior Pattern

Revision Type	Frequency	Percentage (%)
Expansion	18	34.6%
Rephrasing	16	30.8%
Correction	10	19.2%
Reorganization	8	15.4%
Deletion	0	0.0%
Total	52	100%

Leen produced the greatest number of revisions among the three participants, demonstrating strong initiative in developing and refining the text (Table 3). Her dominant use of expansion (34.6%) indicated a meaning–focused orientation, as she frequently elaborated, clarified, or extended ideas. Rephrasing (30.8%) and correction (19.2%) showed a complementary focus on improving expression and accuracy. Her reorganization efforts (15.4%) reflected sensitivity to rhetorical flow and audience awareness. Leen's pattern aligns with Storch's (2005) description of learners who demonstrate balanced attention to meaning negotiations and linguistic forms, indicating a high degree of cognitive and linguistic engagement.

3.4 Deema's Revision Behavior

Table 4. Deema's Revision Behavior Pattern

Revision Type	Frequency	Percentage (%)
Expansion	10	25.6%
Rephrasing	17	43.6%
Correction	6	15.4%
Reorganization	6	15.4%
Deletion	0	0.0%
Total	39	100%

Deema's revisions were primarily form–focused (Table 4), with rephrasing accounting for nearly half (43.6%) of all her changes. This suggests that she was particularly attentive to stylistic accuracy, lexical precision, and fluency. Her expansion revisions (25.6%) show some content elaboration, albeit to a lesser degree than her peers. Her moderate correction and reorganization frequencies (each 15.4%) demonstrate an awareness of grammatical norms and text coherence. Deema's profile reflects a writer focused on improving readability and stylistic refinement, contributing to the group's overall textual cohesion.

3.5 Combined Revision Behavior

Table 5. Combined Revision Behavior Patterns for All Authors

Revision Type	Frequency	Percentage (%)
Expansion	40	30.1%
Rephrasing	47	35.3%
Correction	25	18.8%
Reorganization	21	15.8%
Deletion	0	0.0%
Total	133	100%

Across all authors (Table 5), rephrasing (35.3%) and expansion (30.1%) were the most common revision types, accounting for over 60% of all revisions. These findings demonstrated that the participants focused primarily on clarifying and elaborating ideas rather than on mechanical corrections. The relatively lower proportions of correction (18.8%) and reorganization (15.8%) indicated selective attention to grammatical accuracy and structural coherence. The absence of deletions across all participants reinforces the tendency toward additive meaning–building, a key feature of cooperative text construction and sociocultural mediation (Vygotsky, 1978).

Overall, the combined results suggest that the learners approached online revision as an opportunity for meaning negotiation and rhetorical development rather than merely as surface–level editing. This aligns with the process–oriented perspective that revision is a creative and developmental stage of writing (Faigley & Witte, 1981; Zamel, 1983).

4. Discussion

An analysis of revision behaviors using the ORB framework revealed a rich and multidimensional picture of how female Saudi EFL learners engage in online text development. The dominance of rephrasing and expansion across participants demonstrated that learners actively revised for both linguistic refinement and content elaboration. This finding reinforces the notion that revision is not merely a stage of linguistic correction but a site of meaning negotiation and rhetorical construction (Faigley & Witte, 1981; Zamel, 1983).

The results also showed that each participant approached the process of revision differently: Leen prioritized adding new ideas, Deema focused on rephrasing and stylistic clarity, and Noor balanced both strategies. These variations highlighted how online environments allow writers to exercise their individual agency while participating in a shared writing process. Together, these findings suggest that revision behavior in digital contexts embodies the dual dimensions of form–focused accuracy and meaning–focused elaboration central to the ORB model.

4.1 Revision as a Process of Meaning Negotiation

The prevalence of expansion and rephrasing illustrates the learners' active engagement in constructing and refining meaning, supporting earlier claims that effective writing development involves recursive cycles of review and modification (Flower & Hayes, 1981). When learners elaborated on existing ideas or clarified their peers' sentences, they not only improved their language but also negotiated their conceptual understanding.

This pattern resonates with Storch's (2005) finding that interactional writing tasks foster LREs—moments in which learners discuss meaning and form simultaneously. Although this study focused on written rather than oral interaction, the visible textual traces of revision showed evidence of comparable cognitive engagement. Through rephrasing and expansion, students externalized their thought processes and collaboratively shaped the text's meaning. These actions suggest that the online platform functioned as a mediational space (Vygotsky, 1978) that

supported both linguistic and conceptual growth.

4.2 Balancing Surface–Level and Text–Based Changes

The distribution of revision types also provides insight into the balance between surface–level and text–based engagement. Together, rephrasing and correction (form–focused categories) accounted for approximately half of all revisions, whereas expansion and reorganization (meaning–focused categories) represented the other half. This balance reflects the integrated attention to form and meaning as envisioned by the ORB framework and Faigley and Witte's (1981) distinction between local and global revisions.

This balanced behavior suggests that students moved fluidly between micro–level linguistic adjustments and macro–level content decisions, embodying a recursive writing process. Unlike earlier research in traditional classrooms, where revisions often focused narrowly on grammar correction (Paulus, 1999), the participants in this study demonstrated broader rhetorical awareness. Their revisions showed evidence of evolving audience consciousness, coherence–building, and stylistic control, signaling a developmental shift toward higher–order writing competence.

4.3 Absence of Deletions and Additive Writing Orientation

An interesting feature of the dataset is the absence of deletions across all participants. While deletion is a legitimate revision type in most frameworks, its absence reflects an additive orientation toward knowledge construction; students preferred to build upon existing ideas rather than remove them. This tendency can be explained by two factors.

First, from a sociocultural perspective, learners may perceive revision as a collaborative process in which removing another person's contribution could be socially or affectively delicate (Vygotsky, 1978). Instead, participants expanded or reworded their ideas to preserve group harmony while improving the text. Second, from a pedagogical standpoint, the participants' EFL context may have conditioned them to associate writing progress with addition rather than reduction, valuing elaboration and visible effort over conciseness. This finding aligns with Saaty (2018), who observed that female Saudi students in digital writing environments often demonstrate a collective preference for elaborative discourse and detailed expression.

4.4 Individual Variation in Revision Behavior

Analyzing each participant separately revealed meaningful variations in revision strategies. Leen, who made the greatest number of revisions overall, demonstrated a strong inclination toward meaning expansion, suggesting confidence in content elaboration and topic engagement. Deema's dominant use of rephrasing reflects a heightened sensitivity to lexical precision and stylistic polishing, indicating an awareness of academic tone and audience appropriateness. Noor's balanced distribution across categories showed a writer developing both rhetorical and linguistic competence through iterative revisions.

These distinctions underscore that online writing environments can accommodate diverse learner strategies and encourage autonomous decision–making. Rather than conforming to a single revision pattern, each participant exercised agency in knowledge construction and in her approach to improvement, an outcome consistent with the constructivist view of writing as an individual, yet socially scaffolded practice (Lantolf & Poehner, 2014; Li & Lan, 2022).

4.5 Pedagogical and Theoretical Implications

These findings contribute to a broader understanding of EFL writing pedagogy in Saudi Arabia by demonstrating how online environments foster both individual reflection and peer–supported development. The visible traces of revision show that learners were not passively responding to corrections, but actively shaping and negotiating language, thereby embodying the principles of learner–centered and process–oriented instruction (Zamel, 1983).

From a theoretical perspective, the ORB framework provides a replicable tool for analyzing online writing behaviors. It operationalizes the intersection of cognitive (Faigley & Witte, 1981) and social (Storch, 2005; Vygotsky, 1978) perspectives, allowing educators and researchers to quantify revision behavior while preserving its pedagogical richness. In classroom practice, teachers can adopt similar frameworks to help students understand the functions of different revision types and promote more deliberate and reflective editing practices.

These insights highlight the need for integrated writing instruction that balances accuracy with meaning and individual accountability with shared responsibility. The results of this study affirm that online co–editing platforms can serve as effective tools for cultivating linguistic accuracy, rhetorical sophistication, and collaborative thinking, which are essential skills for success in academic and professional communication.

5. Conclusion and Future Research Directions

This study investigated how female Saudi EFL university students engaged in online text development through revision behaviors using the ORB framework, which integrates surface– and text–based changes with form– and meaning–focused interaction. The findings revealed that rephrasing and expansion were the most frequent revision types across all participants, reflecting a strong engagement with meaning elaboration and stylistic refinement. Although correction and reorganization occurred less often, they indicated attention to linguistic accuracy and textual cohesion. The absence of deletion further suggested an additive and collaborative approach to writing. Overall, the findings affirmed that online revision is both a cognitive and social process through which learners refine language, negotiate meaning, and internalize academic writing conventions. The study also supports the value of the ORB framework as a systematic and replicable tool for analyzing digital writing development. Pedagogically, the findings highlight the importance of integrating digital co–editing tools, explicit revision instruction, and balanced attention to form and meaning in EFL writing classrooms.

Despite its limited sample size (three participants) and single–group context, this study contributes to theory by extending sociocultural perspectives on writing and offers practical insights for improving technology–mediated writing instruction. Future research should expand the sample to include learners of different proficiency levels, males and females, and different institutional backgrounds to explore how revision behavior varies across demographic and educational factors. Like all exploratory research, this study's modest scope reflects a deliberate first step toward a deeper and more nuanced understanding of online revision in EFL writing. The three–participant, single–group design, while intentional in its focus, opens productive avenues for future inquiry. Expanding the sample to include learners across proficiency levels, genders, and institutional settings would enrich the generalizability of the findings. Longitudinal studies tracking revision behavior over extended writing courses could illuminate developmental trajectories and the cumulative effects of digital co–editing on writing competence. Comparative designs examining different online platforms—such as wikis, shared documents, or AI–assisted writing tools—would further clarify how technological affordances shape revision strategies. Additionally, incorporating think–aloud protocols or post–task interviews alongside textual analysis would provide richer insight into the cognitive and affective dimensions underlying observed revision patterns. Each of these directions holds promise for advancing both theory and pedagogy in technology–mediated EFL writing research.

References

Abdelhalim, S. M. (2025). An investigation into English majors' self–regulated writing strategies in an online learning context. *Language Teaching Research, 29(*4), 1715–1752. https://doi.org/10.1177/13621688221100296

Abdul Rabu, S. N., & Badlishah, N. (2020). Peer interaction patterns in a collaborative learning environment using Google Docs. *International Journal of English Language Education*, *8*(1), 32–45. Retrieved from https://www.akademisains.gov.my/asmsj/article/peer–interaction–patterns–in–a–collaborative–learning–environment/

Al–Ahdal, A. (2020). Using computer software as a tool of error analysis: Giving EFL teachers and learners a much–needed impetus. *International Journal of Innovation*, *Creativity and Change, 12*(2). Retrieved from https://www.ijicc.net/images/vol12/iss2/12232_Ahdal_2020_E_R.pdf

Al–Khairy, M. (2013). English as a foreign language learning demotivational factors as perceived by Saudi undergraduates*. European Scientific Journal*, *9*, 365–382. https://doi.org/10.19044/esj.2013.v9n32p%25p

Amin, E. A. (2020). A review of research into Google Apps in the process of English language learning and teaching. *Arab World English Journal*, *11*(1), 399–418. https://dx.doi.org/10.24093/awej/vol11no1.27

Arnold, N., Ducate, L., & Kost, C. (2012). Collaboration or cooperation? Analyzing group dynamics and revision processes in wikis. *CALICO Journal*, *29*(3), 431–448. https://doi.org/10.11139/cj.29.3.431–448

Chung, H. Q., Chen, V., & Olson, C. B. (2021). The impact of self–assessment, planning, and goal setting, and reflection before and after revision on student self–efficacy and writing performance. *Reading and Writing*, *34*(7), 1885–1913. https://doi.org/10.1007/s11145–021–10186–x

Connor, U., & Asenavage, K. (1994). Peer response groups in ESL writing classes: How much impact on revision? *Journal of Second Language Writing*, *3*(3), 257–276. https://doi.org/10.1016/1060–3743(94)90019–1

Elyas, T., & Picard, M. (2010). Saudi Arabian educational history: Impacts on English language teaching. *Education, Business and Society: Contemporary Middle Eastern Issues*, *3*(2), 136–145. https://doi.org/10.1108/17537981011047961

Faigley, L., & Witte, S. (1981). Analyzing revision. *College Composition and Communication*, *32*(4), 400–414. https://doi.org/10.58680/ccc198115887

Fareh, S. (2010). Challenges of teaching English in the Arab world: Why can't EFL programs deliver as expected? *Procedia – Social and Behavioral Sciences*, *2*(2), 3600–3604. https://doi.org/10.1016/j.sbspro.2010.03.559

Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication, 32*(4), 365–387. https://doi.org/10.58680/ccc198115885

Godwin–Jones, R. (2018). Second language writing online: An update. *Language Learning & Technology, 22*(1), 1–15. https://doi.org/10.64152/10125/44574

Hartley, J. (2004). What is a case study? In C. Cassell & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp. 323–333). Thousands Oaks, CA: Sage.

Hyland, K. (2019). *Second language writing*. Cambridge, UK: Cambridge University Press. https://doi.org/10.1017/CBO9780511667251

Kessler, G., & Bikowski, D. (2010). Developing collaborative autonomous learning abilities in computer mediated language learning: Attention to meaning among students in wiki space. *Computer Assisted Language Learning*, *23*(1), 41–58. https://doi.org/10.1080/09588220903467335

Kessler, G. (2009). Student–initiated attention to form in Wiki–based collaborative writing. *Language Learning & Technology*, *13*(1), 79–95. https://doi.org/10.64152/10125/44169

Li, M. (2013). Individual novices and collective experts: Collective scaffolding in wiki–based small group writing. *System, 41*(3), 752–769. https://doi.org/10.1016/j.system.2013.07.021

Li, M., & Kim, D. (2016). One wiki, two groups: Dynamic interactions across ESL collaborative writing tasks. *Journal of Second Language Writing, 31*, 25–42. https://doi.org/10.1016/j.jslw.2016.01.002

Li, A. W., & Hebert, M. (2024). Unpacking an online peer–mediated and self–reflective revision process in second–language persuasive writing. *Reading and Writing, 37*(6), 1545–1573. https://doi.org/10.1007/s11145–023–10466–8

Li, M., & Zhu, W. (2017). Good or bad collaborative wiki writing: Exploring links between group interactions and writing products. *Journal of Second Language Writing, 35,* 38–53. https://doi.org/10.1016/j.jslw.2017.01.003

Li, P., & Lan, Y.–J. (2022). Digital language learning (DLL): Insights from behavior, cognition, and the brain. *Bilingualism: Language and Cognition, 25*(3), 361–378. https://doi.org/10.1017/S1366728921000353

Lantolf, J. P., & Poehner, M. E. (2014). *Sociocultural theory and the pedagogical imperative in L2 education: Vygotskian praxis and the research/practice divide*. New York, NY: Routledge. https://doi.org/10.4324/9780203813850

Paulus, T. M. (1999). The effect of peer and teacher feedback on student writing. *Journal of Second Language Writing, 8*(3), 265–289. https://doi.org/10.1016/S1060–3743(99)80117–9

Saaty, A. A. (2025). Short story writing experiences and perceptions of Saudi female University students. *Journal of International Students, 15*(7), 1–22. https://doi.org/10.32674/00g6qf65

Saaty, A. A. (2023). Correlations between expressing feelings, conveying thoughts, and gaining confidence when writing personal narratives in one's first and second language. *World Journal of English Language, 13*(1), 390–404. https://doi.org/10.5430/wjel.v13n1p390

Saaty, A. A. (2018). *Wiki–supported collaborative writing: Female Saudi graduate students' writing practices, discourse strategies, and participant perceptions* [Doctoral dissertation, Indiana University of Pennsylvania]. https://knowledge.library.iup.edu/etd/1675

Storch, N. (2002). Patterns of interaction in ESL pair work. *Language Learning, 52*(1), 119–158. https://doi.org/10.1111/1467–9922.00179

Storch, N. (2005). Collaborative writing: Product, process, and students' reflections. *Journal of Second Language Writing, 14*(3), 153–173. https://doi.org/10.1016/j.jslw.2005.05.002

Storch, N. (2011). Collaborative writing in L2 contexts: Processes, outcomes, and future directions. *Annual Review of Applied Linguistics, 31*, 275–288. https://doi.org/10.1017/S0267190511000079

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Zamel, V. (1983). The composing processes of advanced ESL students: Six case studies. *TESOL Quarterly*, *17*(2), 165–188. https://doi.org/10.2307/3586647

Appendix A

Examples of Revision Types in Online Co–editing

Revision Type	Excerpt Example	Description of Revision	Analytic Note
Expansion	Deema added: "Also, the teacher can recommend some movies or TV shows for the students to watch and improve their speaking skills."	A new sentence was added to elaborate on previous suggestions for solving the problem of limited access to native speakers.	Represents content development and idea elaboration, showing learners' initiative to extend meaning.
Rephrasing	Leen changed: "teachers are mainly focused to cover the materials assigned" → "teachers are mainly focused on covering the assigned materials."	Sentence was reworded for grammatical accuracy and smoother phrasing.	Reflects lexical refinement and improved syntactic accuracy for fluency and clarity.
Correction	Noor corrected: "teachers' lack of creativity create a class environment" → "teachers' lack of creativity creates a class environment."	Subject–verb agreement was corrected.	Demonstrates attention to form–focused accuracy and local error correction.
Reorganization	Deema reordered section headings: moved "Lack of motivation" to appear before "Lack of well–trained teachers."	Change in paragraph order for logical flow and cohesion.	Shows awareness of textual structure and argument progression.
Deletion	No example was identified because deletion was absent in the revision process.	–	–

Appendix B

Coding Sheet Template for Revision Analysis

Entry No.	Author	Original Text (Before Revision)	Revised Text (After Revision)	Revision Type	Description / Rationale	Notes on Impact (Meaning/ Form/ Structure)
1	Noor	"students learn to think about the structure of what they are saying far too much instead of learning to enjoy the language."	"students learn to think about the structure too much instead of enjoying the language."	Rephrasing	Simplified expression for fluency.	Improved readability; no major meaning change.
2	Leen	"students still have limited access to native English speakers to practice the English language."	"students still have limited access to native speakers for practice."	Correction	Reduced redundancy and improved syntax.	Local accuracy and conciseness.
3	Deema	—	"Also, the teacher can recommend some movies or TV shows for the students to watch and improve their speaking skills."	Expansion	Added a concrete example to support argument.	Strengthened idea development and engagement.
4	Leen	"teachers lack of creativity creates a class environment where students are not encouraged to participate."	"Teachers' lack of creativity creates an environment that discourages participation."	Reorganization + Rephrasing	Changed the sentence structure for clarity and emphasis.	Enhanced cohesion and stylistic sophistication.
5	Noor	"these challenges and more will be discussed in details next along with some suggestions for solving them."	"Challenges and suggestions will be discussed next in details"	Reorganization + Rephrasing	Changed the sentence to avoid repetitive statement.	Increased focus and reduced redundancy.

Appendix C

Coding Guide for Revision Analysis

Code	Definition	Inclusion Criteria (When to Apply)	Exclusion Criteria (When Not to Apply)	Typical Indicators / Keywords	Theoretical Link
Expansion	Addition of new ideas, examples, explanations, or supporting details that extend the original meaning of the text.	Apply when a participant introduces new content that develops the argument or provides elaboration.	Do not apply if the addition only repeats existing information or adds minimal filler words.	"Also," "in addition," "for example," "another suggestion," "furthermore."	Text–based change (Faigley & Witte, 1981); meaning–focused revision (Storch, 2005).
Rephrasing	Modifying wording or sentence structure to improve fluency, clarity, or tone without changing meaning.	Apply when the sentence meaning remains the same but language is refined (e.g., replaced vocabulary, simplified syntax).	Do not apply if the change introduces new information or corrects only a grammatical error (code as Correction).	"changed wording," "improved phrasing," "restated for clarity."	Surface–level revision (Faigley & Witte, 1981); stylistic refinement (process writing).
Correction	Local adjustments to grammar, spelling, punctuation, or word form to improve linguistic accuracy.	Apply when the revision clearly fixes an error in grammar, mechanics, or spelling.	Do not apply if the change alters meaning or reorganizes text (use Expansion or Reorganization instead).	"corrected," "fixed," "grammar," "spelling," "verb tense," "agreement."	Form–focused change; LREs (Storch, 2005).
Reorganization	Movement or reordering of sentences, clauses, or ideas to improve logical flow, cohesion, or argument sequence.	Apply when a participant relocates sections, headings, or paragraphs to achieve better structure.	Do not apply to small rewordings or local corrections.	"moved section," "reordered," "changed order," "placed before/after."	Text–based revision; coherence–focused (Flower & Hayes, 1981).
Deletion	Removal of text (words, sentences, or paragraphs) to eliminate redundancy, irrelevance, or error.	Apply when content is intentionally removed to enhance focus or conciseness.	Do not apply when text is rewritten rather than removed (code as Rephrasing).	"removed," "deleted," "omitted," "eliminated."	Editing and conciseness (Zamel, 1983); efficiency–focused revision.

Author Statements

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Acknowledgments

The author appreciate the valuable contributions of the participants.

Author Contributions

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Consent for Publication

The author has read and approved the published version of the manuscript.

Funding

This research received no external funding.

Declaration of Competing Interest

The author declare no conflict of interest.

Informed Consent

Informed consent was obtained from all participants.

Ethics Approval

Ethics approval was granted by an Institutional Review Board.

Data Availability Statement

The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Use of Artificial Intelligence

Generative AI tool was used to create illustrative figures in this manuscript. All figures were reviewed and approved by the author.

Supplementary Materials

No supplementary materials are available.

Journal Information

The Editorial Board declared the below statement on behalf of the journal and publisher.

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