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Self-Initiated Self-Repair in STEM Students' English Oral Presentations: A Qualitative-Dominant Mixed-Methods Study

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Abstract

The purpose of this study was to examine the trouble sources that contributed self-initiated self-repair. In addition, it also explored the repair strategies used by Science, Technology, Engineering, and Mathematics (STEM) students during English oral presentations at Bahir Dar University, Ethiopia. The study employed a qualitative-focused mixed-methods design informed by a Conversation Analytic perspective. The participants were 20 grade 11 students, and six presentations were selected for detailed analysis. The selected recordings comprised 69 minutes of public speech data. The researchers recorded, transcribed and coded, and analyzed based on major trouble sources such as lexical, morphological, and syntactic. In addition, the data were analyzed based on the four repair strategies: replacement, repetition, insertion, and abandonment. Both researchers independently coded the transcripts, producing an inter-coder agreement rate of 91.66%. Qualitative analysis constituted the primary analytical procedure, while frequencies and percentages were used descriptively to summarize the identified patterns. The analysis identified 1,274 utterances and 518 instances of self-initiated self-repair. Lexical trouble sources were the most frequent, accounting for 224 cases (43.2%), followed by morphological trouble sources with 178 cases (34.4%), and syntactic trouble sources with 116 cases (22.4%). Among the repair strategies, replacement occurred most frequently, with 186 cases (35.9%), followed by repetition with 126 cases (24.3%), insertion with 115 cases (22.2%), and abandonment with 91 cases (17.6%). The qualitative extracts demonstrate that learners used self-repair

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Data Availability Statement: *All relevant data are within this paper.*

to modify lexical choices, grammatical forms, sentence structures, and emerging formulations while maintaining the continuity of their presentations. The findings show that self-initiated self-repair constituted an important resource for monitoring and managing spoken English during oral presentation. However, because the study did not compare STEM and non-STEM learners, the observed repair patterns are interpreted as practices documented among STEM participants rather than as effects caused by the STEM disciplinary context.

Keywords: Self-initiated self-repair, trouble source, repair strategy, Conversation Analysis, oral presentation, EFL, STEM students

Introduction

Self-repair is an interactional practice through which speakers identify and address problems that emerge in their own ongoing speech. Such problems may involve lexical retrieval, grammatical formulation, pronunciation, sentence construction, or the expression of an intended meaning. When speakers themselves both identify the trouble and carry out the correction without another participant initiating the process, the practice is commonly referred to as self-initiated self-repair (Hosoda, 2006; Schegloff et al., 1977; Trisanti, 2017).

Self-initiated self-repair is particularly important in second- and foreign-language communication because it provides observable evidence of learners' monitoring of their developing spoken production. Rather than regarding every repair as an indication of deficient linguistic competence, repair can be understood as one of the resources speakers use to maintain the progress, accuracy, and comprehensibility of their talk. Speakers may repeat an item while planning what to say next, replace an inappropriate word or grammatical form, insert information that they consider necessary, or abandon an emerging structure and formulate another one.

From a Conversation Analytic perspective, repair involves the management of a "trouble source" in talk (Schegloff et al., 1977). A trouble source is the element in an utterance that becomes problematic for the speaker or interlocutor, while repair initiation marks the recognition of the problem and repair outcome concerns the way the difficulty is resolved. Self-initiated self-repair is therefore particularly relevant to understanding how language learners monitor and modify their own speech while communication is still in progress.

Previous research has demonstrated that second- and foreign-language learners employ a range of self-repair practices in classroom conversations, general interaction, oral tasks, and proficiency interviews (Cho & Larke, 2010; Emrani & Hooshmand, 2019; Estaji & Rajabi, 2019; Rabab'ah, 2013; Sato, 2012). However, less attention has been given to self-initiated repair during extended oral presentations, where speakers are required to sustain their talk for a longer period and have fewer opportunities for immediate assistance from an interlocutor.

A further gap concerns the relationship between the problem that triggers repair and the operation subsequently used to address it. Studies identified particular strategies such as repetition, replacement, insertion, and abandonment; however, less attention was given to the connection between these repair operations and the lexical, morphological, and the syntactic trouble sources that precede them in English as a Foreign Language (EFL) oral presentation data.

The present study addresses these gaps by examining the oral presentations of STEM students participating in English-language training at Bahir Dar University. The participants' STEM background

defines the population and educational context of the investigation. However, because the presentation topics were not restricted to discipline-specific STEM content and the study did not include a non-STEM comparison group, the study does not seek to demonstrate that STEM disciplinary membership causes particular repair patterns. Rather, it documents the trouble sources and self-repair practices that occurred in the English oral presentations of these students.

The study adopts a Conversation Analytic perspective on repair and employs a qualitative-dominant mixed-methods design. Qualitative analysis of the recorded presentation extracts provides the primary basis for interpreting how speakers identify and resolve trouble, while descriptive frequency counts supplement the qualitative analysis by showing the distribution of the identified categories. Accordingly, the study addresses two research questions:

1. What lexical, morphological, and syntactic trouble sources trigger self-initiated self-repair in STEM students' English oral presentations?
2. What self-initiated self-repair strategies do STEM students use in their English oral presentations, with particular attention to which strategy occurs most frequently?

Literature Review

Repairs in Conversation Analysis

Repair is a fundamental organizational practice through which speakers manage problems involving speaking, hearing, or understanding in interaction (Schegloff et al., 1977). Within Conversation Analysis, repair is not limited to the correction of grammatical errors. A trouble includes an unsuitable lexical choice, difficulty retrieving a word, an incorrect form, unclear reference, an incomplete formulation, or any other element that a speaker treats as requiring modification.

Repair strategies are distinguished based on who initiates the repair and who completes it (Schegloff et al. 1977). These possibilities include self-initiated self-repair, other-initiated self-repair, self-initiated other-repair, and other-initiated other-repair. This study focused on self-initiated self-repair, in which students display an orientation to trouble in their talk and strategies they employed to resolve it.

This approach is important for examining foreign language speech since learners regularly produce language while simultaneously monitoring their linguistic and communicative adequacy. According to Levelt (1983), speakers detect mismatches between intended and produced speech and revise their utterances while speaking.

In Conversation Analytic research, repair is not considered to be a communication failure. Rather, it is understood as a mechanism through which participants manage and resolve problems that arise during interaction. A speaker's decision to repeat, substitute, insert, reformulate, or abandon part of an utterance may therefore reflect the active management of emerging trouble in ongoing talk. Accordingly, the analysis of self-initiated repair provides insight into how speakers recognize and address difficulties as they produce their speech.

Self-Initiated Self-Repair in EFL Contexts

Research in EFL and ESL settings has identified self-initiated repair as a recurring feature of learner talk. Rabab'ah (2013), for example, documented different repair strategies in EFL learners' oral discourse, while Emrani and Hooshmand (2019) used Conversation Analysis to investigate self-initiated

self-repair structures among advanced Iranian EFL learners. Khodadady and Alifathabadi (2014) likewise showed that EFL learners use repair as a resource for managing difficulties that arise during oral communication.

A few repair operations occur through previous studies. Repetition has been associated with speech planning and fluency management because repeating part of an utterance can provide additional time for formulating what follows (Bada, 2010; Rieger, 2003). Sato (2012) similarly observed self-initiated repair attempts among Japanese learners speaking English. Replacement enables speakers to substitute a previously produced lexical or grammatical item with one considered more appropriate (Emrani & Hooshmand, 2019).

Other research has shown that self-repair may serve communicative purposes beyond grammatical correction. Hosoda (2006) demonstrated the relevance of repair to the management of language expertise in second-language conversation. Kaur (2011) showed that self-repair may increase explicitness in English as a lingua franca interaction. Estaji and Rajabi (2019) identified strategies including repetition, replacement, insertion, and abandonment in classroom conversations, while Cho and Larke (2010) reported several verbal and non-verbal repair resources among ESL learners.

Nevertheless, much of the available research has focused on conversational interaction, classroom dialogue, proficiency interviews, or relatively interactive speaking activities. Oral presentations differ from these contexts because a presenter is required to produce relatively extended stretches of speech while independently monitoring lexical choice, grammatical formulation, sentence organization, and the progression of the presentation.

Research has also provided comparatively limited evidence concerning self-initiated self-repair among STEM students in EFL contexts. STEM learners constitute an educational population for whom English oral communication may be relevant to study, project presentation, professional development, and academic participation. However, identifying STEM students as an under-researched population does not in itself imply that their repair behavior is necessarily different from that of learners in other academic disciplines. Comparative evidence would be required to establish such a difference.

The present study therefore treats the STEM background of the participants as an important contextual feature while restricting its empirical claims to the repair patterns documented in the recorded presentations.

Trouble Sources, Repair Strategies, and Research Gap

Self-repair begins when a speaker treats some aspect of an emerging utterance as problematic. Trouble sources may occur at lexical, morphological, syntactic, semantic, or discourse levels. Lexical trouble may involve word retrieval, inappropriate lexical selection, or difficulty expressing an intended meaning. Morphological trouble may involve tense, subject–verb agreement, or word-form selection, whereas syntactic trouble may arise when speakers have trouble in organizing a phrase, clause, or sentence.

Speakers can respond to such troubles through several repair operations. Repetition may enable the speaker to maintain the floor while planning subsequent speech (Bada, 2010; Rieger, 2003). Replacement involves substituting one linguistic item or formulation with another. Insertion adds material to an emerging utterance, often increasing specificity or completing a formulation. Abandonment occurs when a speaker discontinues an emerging structure and redirects or reconstructs the utterance.

These categories are analytically related because a repair strategy is a response to an emerging trouble source. Nevertheless, one trouble-source type should not be assumed to correspond mechanically to one particular strategy. A lexical problem, for example, may lead to replacement in one instance and insertion or abandonment in another, depending on how the speaker resolves the trouble.

Three gaps are therefore relevant to the present study. First, there remains relatively limited research on self-initiated repair in extended EFL oral presentations compared with conversational or interactive speaking settings. Second, relatively little published research has documented such repair among STEM students in Ethiopian university English-language learning contexts. Third, previous studies have more often classified repair strategies than explicitly examined their relationship with the trouble sources that preceded them.

The present study addresses these gaps by first identifying lexical, morphological, and syntactic trouble sources and then examining the self-repair operations through which the speakers responded to the difficulties identified in their ongoing speech.

Methods

Research Design

This study employed a qualitative-dominant mixed-methods design to investigate self-initiated self-repair in students' English oral presentations. The qualitative component constituted the primary analytical approach because interpretation depended principally on close examination of recorded and transcribed instances of trouble and repair in the speakers' ongoing talk.

A Conversation Analytic perspective informed the identification and interpretation of repair. Following Schegloff et al. (1977), the analysis treated repair as an observable variable involving a trouble source, an indication that students had recognized the problem, and an attempt was made to modify or resolve it.

In addition, the researchers took quantitative data to supplement the qualitative information descriptive role. After they coded the qualitative data, the frequencies and percentages were calculated and summarized, the distribution of the identified trouble-source categories and repair strategies were made. The quantitative results were therefore used to complement rather than to replace the qualitative analysis.

Trouble sources were classified as lexical, morphological, and syntactic, while self-repair strategies were classified as repetition, replacement, insertion, and abandonment based on relevant repair literature mentioned by Ardini (2015), Cho and Larke, (2010), and Estaji and Rajabi (2019).

Participants and Context

The participants were grade 11 STEM students enrolled at Bahir Dar University. Twenty students, consisting of 12 males and 8 females, participated in the oral presentation activity.

STEM students take an English language course to strengthen academic English communication, including oral communication and presentation skills. Hence, this study was conducted while students were taking the English language course. Though the students' language proficiency levels were not formally measured through a standardized proficiency test, the classroom performance and instructor evaluation indicated that they generally functioned at an intermediate level appropriate for the presentation activities.

The students prepared their presentation activities in groups but delivered the presentations individually. Their presentation topics focused on selected historical, social, or inspirational individuals. Even though the participants were STEM students, the presentation topics themselves were not necessarily technical or discipline-specific STEM topics. Additionally, they were allowed preparation time and could organize notes in advance. This arrangement produced relatively extended stretches of spoken English in which self-initiated self-repair could be observed.

For the purpose of this study, six presentations were selected for detailed transcription and analysis among 20 presentations. Selection was based on the availability and quality of the recorded speech for detailed examination.

Data Collection Instrument

Oral presentation was the primary data collection tool. The presentation task required students to introduce their topic, organize and explain relevant information, and conclude their presentation appropriately.

The task was considered appropriate for examining self-initiated self-repair because speakers were required to formulate and sustain spoken discourse while simultaneously monitoring their own language production. Students were encouraged to communicate their ideas orally rather than to read a completely prepared script. The presentation task constituted the source of the spoken data. A mobile phone was used only as a recording device.

Data Collection Procedures

Data collection took place during the students' regular English language classroom. The students were first informed about the oral presentation activity and were provided with preparation time.

Before the presentations were recorded, the students were briefed about the purpose of the study and their consent was obtained. The presentations were then audio-recorded using a mobile phone. The six presentations selected for detailed analysis provided a total of 69 minutes of recorded speech.

Following data collection, the recordings were manually transcribed verbatim. The transcription preserved features relevant to self-repair, including repetitions, lexical substitutions, grammatical reformulations, insertions, hesitation markers, and abandoned formulations. The researchers listened to the audio repeatedly while comparing it with the transcripts to improve transcription accuracy.

Data Analysis

Self-initiated self-repair sequences were analyzed through a qualitative data analysis approach. Researchers repeatedly listened to the recordings and checked the transcripts. Potential repair sequences were identified by examining points at which speakers appeared to interrupt, repeat, replace, extend, or reformulate their emerging speech.

Second, the trouble source associated with each identified repair was coded according to three operational categories: lexical, morphological, and syntactic. Lexical trouble involved difficulties with word selection, lexical retrieval, or lexical meaning, whereas morphological trouble involved grammatical morphology, including tense, agreement, or word-form selection. Syntactic trouble concerned difficulties with the organization of phrases, clauses, or sentences. These categories were used to identify the linguistic domain in which the speaker appeared to encounter trouble during the production of an utterance.

Third, the repair operation used by the speaker was identified and coded as replacement, repetition, insertion, or abandonment. Replacement referred to the substitution of one form for another, while repetition involved repeating part of the preceding or emerging utterance. Insertion referred to the addition of linguistic material to emerging utterance, whereas abandonment involved discontinuing an emerging formulation and reorganizing it. Attention was given to the relationship between the identified trouble source and the subsequent repair operation. The analysis did not assume a one-to-one relationship between trouble-source categories and repair strategies; instead, each extract was interpreted on the basis of what the speaker demonstrably did in the recorded utterance.

Both researchers independently coded the transcripts using the agreed operational categories. The independent coding produced an inter-coder agreement rate of 91.66%. Disagreements were subsequently discussed and resolved through comparison of the relevant transcript extracts until agreement was reached. The final data set therefore reflected the jointly agreed coding decisions.

Following the qualitative coding, descriptive frequencies and percentages were calculated to show the distribution of the identified trouble sources and repair strategies. These numerical summaries served a supplementary descriptive purpose by indicating how frequently the different categories occurred in the data. They were not treated as independent evidence of causal relationships between trouble sources and repair operations; rather, they were used to complement the qualitative interpretation of the repair sequences.

Ethical Considerations

Ethical procedures were followed throughout the study. Ethical clearance was obtained from Bahir Dar University before data collection. Participants were informed about the purpose of the research and provided consent for their presentations to be recorded and analyzed for research purposes.

Personal names were not used in the transcripts, analysis, or reporting of the findings. Participant codes were used instead. The recordings and research data were accessible only to the researchers and were handled in a manner intended to maintain participant confidentiality.

Results

The findings are presented in the same order as the research questions. The first subsection identifies the trouble sources that triggered self-initiated self-repair. The second examines the repair strategies used to resolve the identified troubles and reports their relative frequencies.

Across the six selected presentations, the analysis identified 1,274 utterances and 518 instances of self-initiated self-repair. Because a repair instance constitutes the analytical unit in the present study, subsequent percentages are calculated with reference to the 518 identified repair instances rather than interpreted as the percentage of all utterances containing repair.

Trouble Sources Triggering Self-Initiated Self-Repair

The researchers identified the three categories of trouble sources which are lexical, morphological, and syntactic.

Among these trouble sources, lexical trouble counted the highest, which had 224 cases (43.2%). The next one was morphological trouble which counted 178 cases (34.4%), while syntactic trouble accounted for 116 cases (22.4%) (see Table 1).

Table 1 *Distribution of trouble sources*

Trouble source	Frequency	Percentage
Lexical	224	43.2%
Morphological	178	34.4%
Syntactic	116	22.4%
Total	518	100%

Lexical Trouble Sources

This type of trouble occurred when speakers had difficulty selecting an appropriate lexical item.

Extract 1

"…religion uh regional leaders…"

The speaker initially produced "religion" and then replaced it with "regional." The similarity in sound between the two forms suggests an emerging lexical selection problem that the speaker immediately recognized and repaired.

Extract 2

"…national hero umm heroine…"

Here, "hero" is replaced by "heroine." The repair changes the lexical item to one that more appropriately corresponds to the female referent.

These extracts show that lexical trouble did not necessarily result in complete interruption of the presentation. Speakers were often able to identify a problematic lexical choice and modify it within the same developing utterance.

Morphological Trouble Sources

Morphological trouble primarily involved grammatical form, particularly tense and subject–verb agreement.

Extract 3

"…his country were was under the rule…"

The speaker first produced "were" and then immediately replaced it with "was." The repair therefore addresses an agreement problem through direct substitution.

Another example occurs in:

Extract 4

"…Italy invade invaded Ethiopia…"

Here, the speaker initially uses the base form "invade" and subsequently replaces it with the past-tense form "invaded." The trouble source is morphological, while the repair operation is replacement.

These cases show how trouble-source and repair-strategy categories are analytically connected. Morphological difficulties in these extracts are resolved by replacing an initially produced grammatical form with another form.

Syntactic Trouble Sources

Syntactic trouble involved difficulties in organizing or maintaining an emerging sentence structure.

Extract 5

"…he is umm he was the member of the army…"

The speaker begins one formulation, hesitates, and reconstructs part of the clause. The sequence involves more than the correction of an isolated lexical item because the grammatical configuration of the developing utterance is reformulated.

Syntactic trouble sometimes resulted in relatively extensive repair because speakers had to reorganize more than one element of the emerging construction. Such cases therefore differed from short lexical or morphological substitutions, although the exact repair operation varied across individual examples.

Overall, the findings for RQ1 indicate that the students' self-initiated repairs were most frequently triggered by lexical trouble, followed by morphological and syntactic difficulties.

The analysis subsequently examined what the speakers did after these troubles emerged.

Self-Initiated Self-Repair Strategies

Four principal repair strategies were identified: replacement, repetition, insertion, and abandonment.

Replacement was the most frequent strategy, accounting for 186 cases (35.9%). Repetition occurred 126 times (24.3%), insertion 115 times (22.2%), and abandonment 91 times (17.6%) (see Table 2).

Table 2 *Distribution of self-initiated self-repair strategies*

Repair strategy	Frequency	Percentage
Replacement	186	35.9%
Repetition	126	24.3%
Insertion	115	22.2%
Abandonment	91	17.6%
Total	518	100%

Replacement

Replacement involved substituting an initially produced lexical or grammatical item with another form.

Extract 6

"…Italy invade invaded Ethiopia…"

In this example, "invade" is replaced with "invaded." The trouble source is morphological, while the repair strategy is replacement.

Extract 7

"…our fathers umm our grandfathers…"

The speaker replaces the initial expression "our fathers" with "our grandfathers," suggesting that the first lexical formulation did not adequately express the intended referent.

Extract 8

"…national hero umm heroine…"

Similarly, the replacement of "hero" with "heroine" modifies the lexical choice to correspond more precisely to the intended referent.

These examples demonstrate that replacement could address different kinds of trouble. It was therefore not confined to grammatical errors; it also occurred when speakers revised lexical selection.

Repetition

Repetition occurred when speakers repeated a word or short sequence within the developing utterance.

Extract 9

"…she was very very courageous…"

Extract 10

"…I want to to talk about…"

The repetitions allow the speaker to maintain vocal continuity while the utterance develops. In the second example, repetition may provide additional planning time before the next element of the presentation is produced.

Not every repetition necessarily represents correction of an erroneous linguistic form. Instead, repetition can function as a repair-related resource through which speakers manage the timing and progression of their speech.

Insertion

Insertion occurred when a speaker added linguistic material to an already developing formulation.

Extract 11

"…hundreds of nationalists Indian nationalists…"

The insertion of "Indian" provides additional specification for the noun "nationalists." Rather than replacing the entire phrase, the speaker adds information to refine the referent.

This example illustrates how insertion may follow a speaker's recognition that an emerging formulation requires greater specificity.

Abandonment

Abandonment involved discontinuing or substantially redirecting an emerging formulation.

Extract 12

"…education is the best I mean the basic key to kill the cycle of poverty…"

The speaker begins with "the best" but does not continue that formulation. The expression "I mean" marks a shift to "the basic key," producing a reformulated version of the intended message.

Abandonment therefore differed from simple replacement because the speaker did not merely substitute one isolated word for another. Instead, the developing formulation was interrupted and reorganized.

Taken together, the findings for RQ2 show that students employed all four repair strategies. Replacement was the most frequently identified strategy, but the qualitative examples also demonstrate that different operations were used according to the nature of the emerging problem and the way the speaker attempted to continue the utterance.

Discussion

The purpose of this study was to investigate self-initiated self-repair in the English oral presentations of STEM students. In addition, it also aimed to examine strategies students employed to resolve those troubles. The study confirmed that students employed various kinds of self-initiated self-repair related to lexical, morphological, and syntactic trouble sources. Likewise, it also indicated four main repair strategies: replacement, repetition, insertion, and abandonment.

From a Conversation Analytic view, the findings demonstrated students' observable orientation to trouble in their own ongoing speech. Rather than waiting for another participant to identify or correct a difficulty, the speakers themselves interrupted, modified, expanded, repeated, or reorganized their emerging utterances. This pattern is consistent with the account of repair proposed by Schegloff et al. (1977), in which they mentioned that self-repair represents an organized resource for managing trouble in talk.

Among trouble sources, lexical trouble was the most frequent trouble-source category. The data indicated that lexical difficulty involved both incorrect selection and selection of a form subsequently treated by the speaker as insufficiently appropriate. The change from "religion" to "regional," for instance, demonstrates immediate modification of a lexical selection, while "hero" to "heroine" shows adjustment of a lexical item in relation to the intended referent. These findings are compatible with previous research identifying vocabulary and lexical formulation as important sources of difficulty in EFL oral production (Betti & Mahdi, 2020; Rabab'ah, 2013).

The second most frequently used trouble source was morphological. For instances, speakers used "were → was" and "invade → invaded" which indicates that students sometimes monitored grammatical form while speaking and immediately substituted another form. These cases are supported by previous

findings by Levelt (1983) and Kormos (2000); they mentioned the view that self-repair can provide observable evidence of online monitoring of speech production.

However, the study indicated that syntactic trouble was less frequent than lexical and morphological trouble. This is understandable because a syntactic difficulty may require the speaker to reorganize several elements of an emerging clause rather than replace a single lexical or inflectional form. The findings therefore suggest that the extent of a repair can vary according to the scope of the trouble being addressed.

The second major finding concerns the repair operations used by the speakers. Replacement was the most frequent strategy. This finding is consistent with previous work showing that replacement is an important self-repair resource in learner discourse (Emrani & Hooshmand, 2019). In the present data, replacement addressed both morphological and lexical problems. The examples "invade → invaded," "fathers → grandfathers," and "hero → heroine" show that replacement can modify grammatical as well as lexical aspects of an utterance.

Repetition was also common. Previous studies have described repetition as a resource for maintaining speech continuity and providing time for online planning (Bada, 2010; Rieger, 2003). The present examples are compatible with this interpretation. Repetition does not necessarily repair an incorrect form; instead, it may enable a speaker to hold the floor while preparing the continuation of an utterance.

Insertion served a somewhat different function. In the example "nationalists → Indian nationalists," the speaker does not discard the original noun but adds a modifier that makes the intended referent more specific. This observation is compatible with research showing that self-repair may increase explicitness and refines meaning rather than simply correcting errors (Kaur, 2011).

However, the data indicated that abandonment was the least frequent strategy that students used. Nevertheless, it demonstrated an important aspect of online speech production because speakers sometimes appear to recognize that an emerging formulation cannot easily be completed in its current form. In such cases, discontinuing the initial formulation and beginning another provides a means of maintaining the progress of the presentation.

A key contribution of the present analysis lies in considering trouble sources and repair operations together. The results show, for example, that morphological trouble may be resolved through replacement and that lexical trouble may similarly result in replacement or another repair operation. This relationship should not be understood deterministically. The study does not show that every lexical trouble scenario necessarily results in one specific strategy. Rather, the extracts demonstrate that repair strategies are responsive to the particular problem the speaker encounters and to the way the speaker chooses to modify the emerging utterance.

The study was conducted with STEM students, but the findings need to be interpreted cautiously in relation to this context. The data demonstrate how a group of STEM students used self-initiated self-repair during English oral presentations. They do not demonstrate that the observed patterns were caused by the participants' disciplinary background. The presentation topics included historical, social, and inspirational figures rather than exclusively technical STEM subject matter, and the study did not include a non-STEM comparison group. It would therefore be methodologically inappropriate to claim that lexical trouble, replacement, repetition, or other patterns were uniquely shaped by STEM disciplinary communication.

The contribution of the STEM context is consequently best understood as contextual and population based. The study extends the empirical literature by documenting self-repair among an underresearched group of Ethiopian university STEM students participating in English-language training. Future comparative studies would be required to determine whether their repair behavior differs systematically from that of students in humanities, social sciences, or other disciplinary contexts.

Pedagogically, the findings suggest that self-initiated self-repair should not automatically be interpreted as communication failure. The ability to recognize and modify one's own emerging speech may instead indicate active language monitoring. Oral presentation activities can therefore provide teachers and learners with opportunities to observe how speakers manage lexical, grammatical, and formulation difficulties in real time.

Teachers may also use naturally occurring repair examples to raise students' awareness of different ways of managing difficulties during oral communication. For example, students can be encouraged to recognize when replacement improves an inaccurate form, when insertion increases specificity, when repetition provides planning time, and when reformulation is more effective than continuing an unsuccessful syntactic construction.

Conclusion

This study investigated self-initiated self-repair in the English oral presentations of STEM students at Bahir Dar University using a qualitative-focused mixed-methods though a Conversation Analysis approach. Specifically, the study examined the trouble sources that triggered repair and the strategies students used to address those difficulties.

The study analyzed 518 instances of self-initiated self-repair across the six selected oral presentations. Lexical trouble sources occurred most frequently, followed by morphological and syntactic trouble. The students used four principal repair strategies: replacement, repetition, insertion, and abandonment. Replacement was the most frequently identified strategy.

The qualitative data demonstrated how trouble sources and repair operations were connected in individual instances of speech. Students resolved morphological problems, such as inappropriate tense or agreement forms, through immediate replacement. When they encounter lexical trouble, they substitute or refine expressions to produce a more appropriate lexical choice. These repair operations enabled students to maintain the progression of their speech while formulating their utterances. Insertion and abandonment also allowed them to expand, modify, or reorganize emerging formulations.

Furthermore, the study indicated that self-initiated self-repair is an important resource for managing ongoing spoken production. Students did not simply produce difficulties; they frequently displayed awareness of aspects of their own speech and made an attempt to modify them while continuing their presentations.

In a similar manner, the study indicated that the conclusions must remain within the limits of the evidence. Although all participants were STEM students, the present study did not compare their repair practices with those of non-STEM students, and the presentation topics were not exclusively discipline-specific. Consequently, the findings cannot establish that the STEM context caused or uniquely shaped the observed trouble sources or repair strategies. Rather, the study documents patterns of self-initiated self-repair among STEM students in an English-language oral presentation context.

The pedagogical implication is that oral presentation activities can provide productive opportunities for language learners to monitor and manage their own speech. Teachers may therefore regard self-repair not simply as evidence of linguistic difficulty but also as a potentially useful indication of learners' developing ability to identify and resolve problems during spoken communication.

Limitations and Future Research

Several limitations should be considered when interpreting the findings. First, although 20 students participated in the presentation activity, only six presentations were selected for detailed analysis. The relatively small analytical sample limits the extent to which the results can be generalized to other EFL learners or university populations.

Second, the study was conducted in a single university English-language classroom context. However, institutional practices, students' background, teachers' instruction style, familiarity of students with the given topic, and other variables may contribute to different results. Thus, future research should therefore examine self-initiated self-repair using larger and more diverse samples.

Third, this research only examined students' repair strategies in their oral presentations. However, repair practices may differ in other communicative contexts such as pair work, group discussion, classroom question-and-answer interaction, interviews, spontaneous conversations, and collaborative problem-solving tasks. Hence, comparative research across different speaking activities could therefore provide a more comprehensive understanding of contextual variation in self-repair.

Fourth, this research did not consider students' level of oral proficiency or their English language performance measured by standardized tests. Thus, future research could investigate whether learners with different proficiency levels or speaking-performance profiles differ in the frequency, type, or effectiveness of self-initiated self-repair.

Fifth, the present data do not permit conclusions about disciplinary effects. Although the participants were STEM students, the study did not include a non-STEM comparison group, and the presentation content was not consistently STEM-specific. Future studies could compare students from STEM, humanities, and social-science disciplines or examine presentations involving explicitly discipline-specific subject matter. Such designs would make it possible to determine whether disciplinary context is associated with different trouble sources or repair practices.

Despite these limitations, the study contributes to research on second-language repair by providing a qualitative-dominant analysis of the relationship between trouble sources and self-initiated repair strategies in extended English oral presentations. It also provides evidence from an Ethiopian university context that has received relatively limited attention in previous research.

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Author Contributions

Authors contributed to the conceptualization, analysis, writing, and editing of the manuscript.

Availability of Data and Materials

Not applicable.

Competing Interests

The authors declare that they have no competing interests.

Declaration of AI

In writing process of this manuscript, the authors used ChatGPT and Grammarly to support the language editing and readability. Other than these, the core research contributions, including conceptualization, analysis, methodology, and scholarly interpretation remain solely attributable to the authors, who reviewed and validated all content. The authors will take full responsibility for all contents included in the manuscript.

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