Learners' Opinion on Automated Feedback: A Case of Beginner Japanese Course

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Abstract:
This study investigates the impact of an automated feedback system in a beginner Japanese course, focusing on the transition from a binary to a color-coded feedback mechanism in online grammar quizzes. Conducted within a flipped classroom setting, it explores the cognitive and affective responses of college students to this change. Through semi-structured interviews with eleven learners, the research highlights how the new feedback format affected their learning experiences and study motivation.
While the impact on study motivation varied among students, the overall response was positive, with many noting reduced anxiety and increased satisfaction with the feedback system. The study contributes to understanding the effectiveness of feedback strategies in digital language learning environments, underscoring the importance of well-designed feedback mechanisms in enhancing learner engagement and performance.

Keywords: flipped classroom, automated feedback, metalinguistic feedback, feedback and motivation

1. Introduction

According to Krashen's Monitor Model, "acquisition" is subconscious knowledge where self-monitoring is possible, and "learning" is conscious knowledge where learners can monitor themselves through competency. Thus, overcorrection of linguistic errors is not necessary if acquisition is the focus of language learning (Liu, 2015). In parallel, grammar should not be focused, especially in spontaneous speech where learners cannot monitor their output (Li, 2014; Lichtman & VanPatten, 2021). However, other researchers emphasized that meaning-oriented communicative context found higher achievement in language acquisition when supported with form-based instruction (Lightbown & Spada, 1990; Takimoto, 2006).

Form-based instruction indicates explicit feedback or guidance on learners' errors. The clarity of explicit corrective feedback is better at mitigating the risk of erroneous uptake by learners in the language classroom (Kang, 2009). Li (2010) states that various research justified the positive impact of corrective feedback regarding learners' noticing their mistakes when given correct linguistic forms and explanations. Either implicit or explicit corrective feedback can be validated as helpful in increasing the learners' uptake, depending on the delivery strategies of an instructor in in-person activities (Zarei et al., 2020). However, feedback in computer-based assessments like quizzes or tests should be tailored to support self-study, particularly in settings like flipped classrooms, where instructors are not always present.

The context of this study is a flipped classroom where pre-class, in-class, and post-class activities are tied together. Learners need to study new grammar content and memorize vocabulary before class time to participate actively in class activities. In this regard, providing asynchronous scaffolding through prompt feedback is equivocally important as providing comprehensive study material online to motivate learners and ensure they understand the content adequately to perform during class time. Thus, this study seeks to understand the impact of an automated feedback system in a Japanese language course by examining student opinions and

experiences. It focuses on how this asynchronous, interactive feature influences learner motivation and perceived utility. By analyzing learner responses, the study captured the affective dimensions of elaborated explicit metalinguistic feedback and explored its role in fostering learner potential and advancing learners' developmental zones. In this regard, the research questions of this study focus on learners' opinions on the new feedback format that links to two potential outcomes: enhanced learning experience and study motivation. In parallel, the research questions are:

RQ1: What are the learners' opinions about the new feedback type (elaborated with color coding)?

RQ2: How did the new feedback impact learners' study motivation and learning experience?

In a Japanese language-specific context, Nagata (1993, 1997) employed an experimental methodology to assess the influence of intelligent feedback on student achievement, as well as its efficacy. Contrarily, this research delved into learners' perceptions regarding their educational experiences with automated, explicit metalinguistic feedback and the resultant effects on their motivation. The study's importance lies in its investigation of the cognitive and affective impact of explicit metalinguistic feedback format within learners' authentic learning contexts, diverging from a singular, contrived experimental setting (which is a highly controlled environment for the purpose of conducting an experiment) and adopting a qualitative approach to understand learners' perspectives in depth, that might not be visible through a quantitative design.

2. Literature Review

2.1. Motivation and Feedback

Feedback is a multi-dimensional instrument in language learning environments. Research shows it can boost intrinsic motivation and self-efficacy, especially when learners navigate the complexities of language learning (Busse, 2014). Multiple feedback resources, such as from teachers, peers, and automated systems, can enhance the motivation and achievement performance of the students compared to a single feedback resource(Cen & Zheng, 2024).

Learners may get feedback in different forms, and the impact of feedback can be contingent on the individuals' perceptions. A comprehensive meta-analysis (Wisniewski et al., 2020) states multiple dimensions explaining why feedback effectiveness varies depending on the context. Its effectiveness is more prominent in cognitive and physical outcomes than motivational and behavioral outcomes. From a cognitive perspective, it is essential for task improvement, although some previous research shows inconsistent results. Motivationally, feedback can either positively or negatively influence aspects like intrinsic motivation and self-efficacy, depending on its nature. Specifically, uninformative feedback, such as simple rewards or punishments, often negatively affects motivation. High-information feedback is the most effective feedback type that provides detailed insights into tasks, processes, and self-regulation. Regarding feedback direction, teacher-to-student feedback is generally more effective than student-to-teacher feedback (Wisniewski et al., 2020).

In recent years, data-driven automated feedback, namely generated by computers, systems have gained momentum, supporting more individualized and adaptive feedback to learners (Deeva et al., 2021). However, the feedback type may not be elaborated or specific at the individual level. Feedback lists these systems' feedback classifications as corrective,

suggestive, informative, and motivational feedback (Deeva et al., 2021). Corrective feedback has been attributed to different roles by different theoretical perspectives; cognitive interactionist theories see it as a support on form-meaning when learners engage in communication. Skill-learning theories are considered to assist learners in enhancing their procedural knowledge of the target language, and according to sociocultural theory, teachers' prompts should trigger learners' self-correction strategies (R. Ellis, 2010).

This paper focuses on corrective feedback types, and thus, the paper uses corrective feedback classification to share crucial details of corrective feedback. (Table 1)
Table 1 shows corrective feedback types that are applicable in a classroom setting. Automated feedback types can be individualized, adaptive to the learner's input, immediate, learner-controllable, or data vs expert-driven (Deeva et al., 2021). The feedback system used in this study uses non-adaptive, non-individualized, and immediate feedback structure.

Table 1: Taxonomy of Corrective Feedback (Adapted from Adams et al., 2011)

Input/Output Dimension	Feedback	Example (John goed to school)	Explicit/Implicit Dimension
Input-providing	Explicit correction	No, it's not good – went.	More explicit ↕
	Recast	John went to school	More implicit
Output providing	Metalinguistic feedback	-ed is for past tense of regular verbs, and "go" is an irregular verb.	More explicit ↕
	Elicitation	John…?	
	Repetition	John goed to school?	
	Clarification Request	Pardon?	More implicit

2.2. Explicit Metalinguistic Feedback

Research on language learning suggests that explicit feedback through direct metalinguistic form may increase learners' noticing of their errors and understanding of semantically difficult-to-understand structures (Li, 2014). In another study, explicit metalinguistic feedback showed more effective performance results than implicit feedback (Carroll & Swain, 1993). Language learners also found explicit metalinguistic feedback most helpful compared to other feedback types (Bodnar et al., 2017), and cognitively mature age groups may benefit from metalinguistic more than elicitation (Choi, 2016). Li (2010) states more studies are needed to understand the effects of corrective feedback, which include but are not limited to "speakers and learners of languages other than English, that involves language learners of higher proficiency (as most of the studies are about beginners), that is conducted in L2 contexts, and that is implemented in the computer mode" (p.349). Nagata (1997) reflects the effectiveness of automated metalinguistic feedback over translation feedback in learners of Japanese. However, as indicated in the limitations, long-term retention and generalization to other Japanese grammatical rules are needed as further research topics.

The relevance of this study draws attention to the focus on the explicit feedback used on computer systems. Research demonstrated that automated elaborate feedback was effective in retrieval-based learning, such as quizzes in learners' regular online learning environment (Enders et al., 2021). Nagata (1993) employed an intelligent automated feedback system that uses Natural Language Processing (NLP) to allow the system to capture the learners' cognitive structures and give sophisticated feedback to learners on one of the difficult concepts of the Japanese language, the particles. Metalinguistic feedback can be listed as the most common application to rephrase the feedback types on computer systems. Metalinguistic feedback means giving explicit linguistic feedback in response to the learner's error with a given task and includes two forms: direct and indirect. Direct metalinguistic form corrects the learner's erroneous output. It provides a comment on metalinguistic rules, whereas the indirect form only encourages the learner to think over the error and thus facilitates metacognitive awareness (Li, 2014).

2.3. Theoretical Foundation

Providing feedback to learners, constructive or not, is a way of interaction between the two sides of agency: the learner as the receiver or builder of the new knowledge and the knowledge provider as an instructor, computer, or other types of material that intentionally facilitate the learning experience. As a social interaction component, feedback, when in constructive and positive form, can foster the learners' intrinsic motivation, impacting learning quality and leading to better performance in learning (Ryan & Deci, 2000). Especially in flipped classrooms, where self-regulation becomes a key component for success, course design should include clear feedback on assignments, incentives to increase student motivation, as well as crafted guidance and assessment mechanisms as principal design elements to ensure the self-study part of the course is well scaffolded (Rotellar & Cain, 2016).

A more language learning-centric perspective becomes prominent when the feedback type narrows to corrective feedback. In second language acquisition, explicit corrective feedback can be linked with cognitive theories (N. C. Ellis, 2006). Specifically, two theoretical perspectives, the noticing hypothesis (which emphasizes learners' attention to used forms) and the output hypothesis (which emphasizes learners' skill acquisition through their own output), are the overarching theoretical basis for automated feedback in the language learning domain (Lichtman & VanPatten, 2021).

Thus, this lens shaped the research question on learners' perception of the utility of the new feedback form. On the other hand, elaboration of the feedback is linked to the first research question, which aims to reveal how the study motivation of the learners changes. This research question is linked with the motivational dimension of self-determination theory, considering student motivation as a psychological need in their education (Ryan & Deci, 2020).

3. Method

3.1. Research Design

Unlike an experimental approach to justify or reject a hypothesis, this study used a naturalistic approach with a case study, which targets exploring a certain number of participants' experiences in-depth (Crowe et al., 2011). The participants are the only group who experienced a change in their automated feedback format in a specific time frame, Spring 2023. This new format was a

change from binary “Correct/Incorrect” to elaborated explicit metalinguistic feedback in grammar quizzes that started in the second half of the Spring 2023 semester. In this regard, this case study explored Japanese learners’ opinions about the change in the automated feedback form they receive during their online grammar quizzes as a part of their assignments. Grammar quizzes are part of each unit in the textbook, and the learners take the grammar quizzes asynchronously, out-of-classroom. Eleven participants across different Japanese course levels, from 101 to 202, participated in the study.

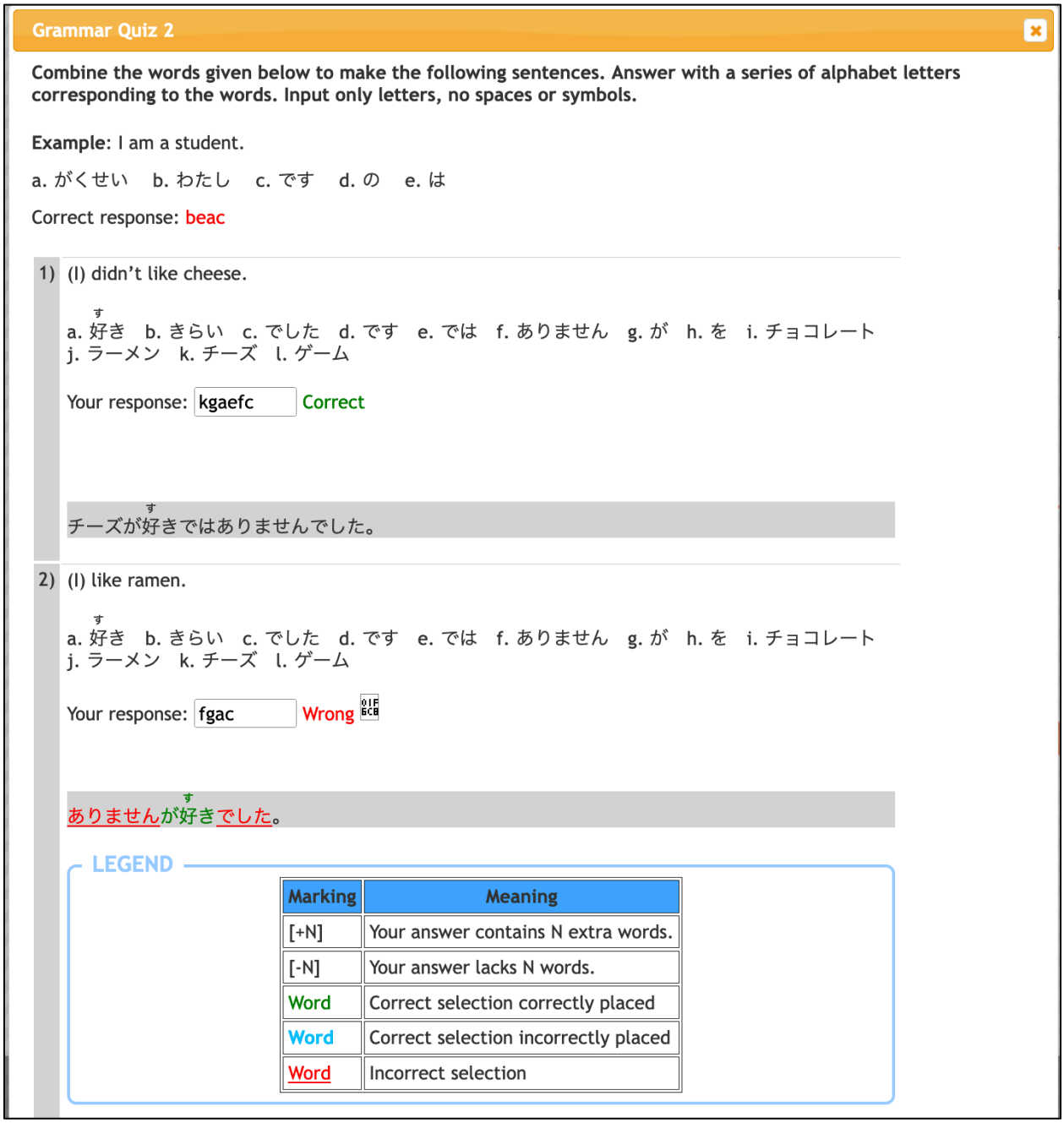
3.2. Research Context

In flipped classroom models, the tasks assigned to learners before class are pivotal in facilitating their anticipated educational outcomes through independent study, enhancing their learning, and engagement in subsequent in-class activities (Chang, 2023; Rotellar & Cain, 2016). Nevertheless, learners may encounter several challenges during this self-study phase. Primarily, the intricacy of the subject matter can significantly influence the learners’ perceived educational attainment, with their motivation potentially diminishing in the absence of adequate feedback. Secondly, in language courses emphasizing conversational exercises during class sessions, mastering content through pre-class activities is essential for effective participation in these in-class engagements.

Considering the enhancement of learning and motivation, this study investigates Japanese language learners’ perceptions of automated feedback in quizzes and essential pre-class assignments in a flipped classroom setting to reveal how elaborated feedback can impact learners’ study motivation and learning experience. These courses utilize an online textbook facilitating home study, incorporating features that support communicative learning, such as oral responses and unit-based testing. A key component is the grammar quiz, which focuses on grammatical accuracy through syntax questions, conversation blanks, and sentence translation. Learners respond via multiple choice or sentence component typing, with two attempts allowed; the highest score is recorded, and correct answers are shown on the third attempt without affecting grades.

In Spring 2023, developers implemented two significant updates to the online textbook: a full Kanji list tab to the textbook menu and elaborated metalinguistic feedback on grammar quizzes. This study primarily examined the update on the latter, a departure from the earlier binary “Correct/Incorrect” feedback. After updating, learners received elaborate feedback in an explicit metalinguistic format (Figure 1).

Figure 1: Binary versus Explicit Metalinguistic Feedback



Note. Question 1 shows Correct/Incorrect format (old), and Question 2 shows explicit metalinguistic format (new)

3.3. Sampling

This study took place in a large mid-western university in the U.S. The researcher acquired learners' directory information (who enrolled in one of the Japanese courses, 101, 102, 201, and 202 in the Spring 2023 semester) from the institutional data analytics center after IRB had

approved the study. The researcher shared the study information with all potential participants via e-mail, stating the planned participant number as 15. Due to general course sequences in the Spring 2023 semester, 102 enrollments were arent higher than 101, and 202 enrollment numbers were higher than 201. In this regard, among 174 learners, 22 learners showed interest (13 from 102, 2 from 101, 3 from 201, and 4 from 202) in participating in the study, and 15 learners were selected based on their return priority as first come first served principle across their course levels. In other words, each course level's participants were given priority among the same course level participants. In total, 15 learners (2 from 101, 8 from 102, 2 from 201, and 3 from 202) were included to proceed to the consent form, and 13 learners signed the consent form. 2 participants had schedule conflicts and offered re-scheduling that did not meet the participants' schedule. Due to the limited time for data collection, the researcher continued with 11 participants. Their enrolled Japanese course levels in Spring 2023 were 1 in 101, 5 in 102, 2 in 201, and 3 in 202. (Table 2) The language proficiency levels of the referred courses are the Japanese Language Proficiency Test (JLPT) N5 for 101 and 102 and N4 for 201 and 202.

Table 2: Participants' Demographic

Japanese Course Level in Spring 2023	101	102	201	202
# of Participants	1	5	2	3

3.4. Data Collection

The researcher conducted one 30 – 45-minute online semi-structured interview session with eleven participants. Semi-structured interview questions (Appendix A) collected participants' opinions about their experience with recent changes in the textbook features. Not all fifteen participants could not conduct interviews due to schedule issues with the planned participants. All participants started the interview and completed their sessions without withdrawing. The researcher asked seven questions focused on elaborated feedback (new automated feedback form) and another added feature to the learners' online textbook. However, participants shared opinions about both changes. The researcher recorded online meeting audio, took notes during the interview, and transcribed meeting recordings after the interview.

3.5. Data Analysis

The investigatory process commenced with the systematic organization of data within a spreadsheet, followed by the coding procedure, which was executed manually and with the assistance of NVivo, a sophisticated qualitative analysis software.

The investigator employed a rigorous six-phase reflexive thematic analysis framework delineated by Byrne (2022), encompassing a series of methodical steps. The distinct clarity afforded by this framework, originally proposed by Braun & Clarke (2006), facilitated a coherent analytic process. This methodology is characterized by its flexibility in theme delineation, iterative nature, and capacity to distill the crux of the findings, thereby forging a direct connection to the research questions through the researcher's reasonable determination of thematic prevalence. With the research targeting individual experiences and motivational dimensions, an essentialist epistemology was adopted, steering a data-driven inductive analysis predicated on the nuances of the interview data. In constructing themes, the researcher embraced

a semantic stance, concentrating on the explicit significances conveyed by participants without venturing into interpretative extrapolations. This structural approach underpins each analytical phase with a robust investigative ethos pertinent to qualitative research paradigms.

3.6. Coding Process

After anonymizing the transcribed data, the researcher engaged NVivo to generate initial codes systematically, each succinctly defined to encapsulate responses to seven individual interview questions (IQs). The preliminary coding yielded seventy-nine discrete codes, apportioned as follows: one code pertinent to the frequency of usage (IQ1), eighteen codes encapsulating the experiential descriptions (IQ2), nine codes related to the benefits of the feature (IQ3), five codes addressing challenges and constraints associated with the new feedback format (IQ4), sixteen codes concerning the utility value (IQ5), seventeen codes examining study motivation alongside understanding and learning support (IQ6), and thirteen codes soliciting suggestions for enhancement (IQ7). In the interest of analytical clarity, three redundant codes were omitted—specifically, those reflecting synonymous concepts (e.g., ‘useful’ versus ‘usefulness’, ‘helpful’ versus ‘helpfulness’, ‘improved learning experience’ duplicate). The resultant seventy-six codes were then meticulously clustered into themes that resonated with the focal points of the research questions.

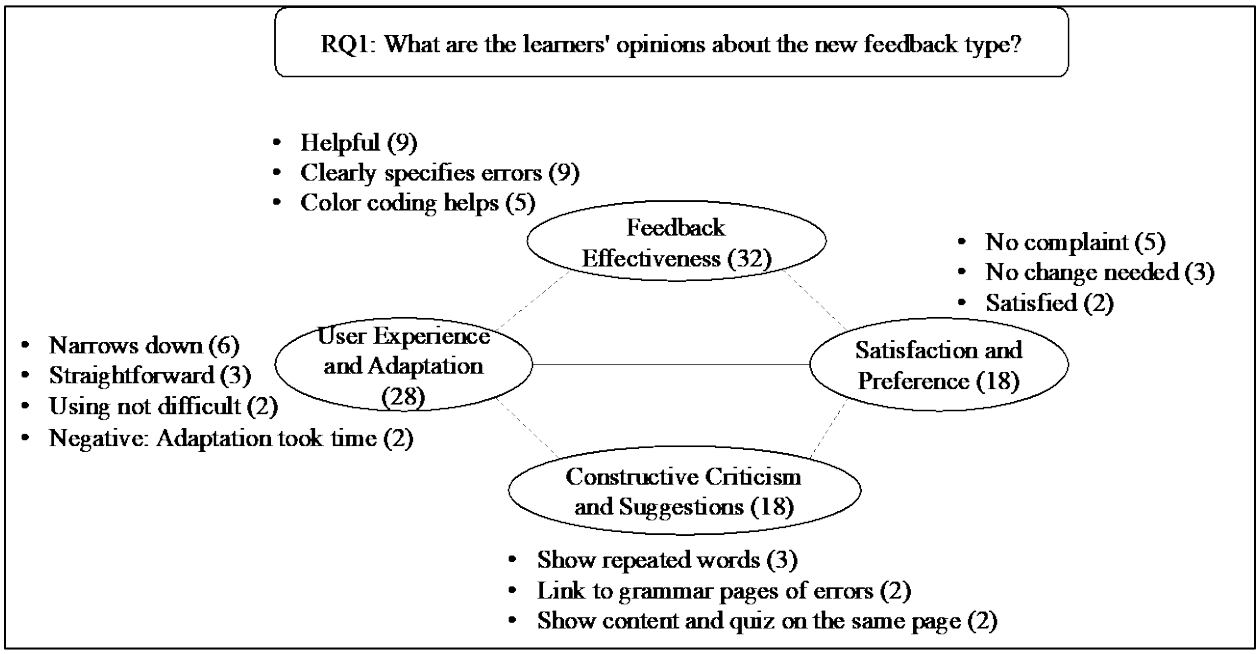
3.7. Trustworthiness

As part of the data triangulation process, the researcher shared notes and transcribed interview recordings with each participant. The researcher asked participants to check their notes and transcriptions and modify them if necessary. The participants were informed about the transcription and checking process during online interviews.

4. Findings

This section presents the findings from a reflexive thematic analysis to explore student opinions on a new automated feedback system (RQ1) and its impact on their study motivation and learning experience (RQ2). The analysis led to the identification of several key themes that provide insights into the learners’ experiences and perceptions. (Figure 2. and Figure 3.) The codes are categorized based on the closeness of each response type by the participants. For example, whether their response touches upon the technical functionality of the new feedback form, how learners perceive the value of the new feedback form, such as the new elaborated explicit format’s effectiveness on their learning or study motivation, and the major benefits of the new feedback form at an individual level. Various responses of participants nuanced different aspects of the new feedback format that can be categorized distinctively to highlight the depth of learners’ experience.

Figure 2: Thematic Analysis for Learners' Opinions on Using New Automated Feedback Format



Note. Research Question 1 related themes and major codes based on participants' responses.

4.1. Feedback Effectiveness

The theme 'Feedback Effectiveness' emerged prominently (32 references), characterized by codes indicating "Helpful"ness (9 references), "Clarity" and "Specifying errors" (9 references), about color code feature "Color coding is very helpful", "Color coding and awareness" (5 references) highlighting the practical utility of the feedback. This theme reflects the learners' positive opinions on the informative nature of the feedback. One student gave a detailed description of how they found the new feature (elaborated explicit metalinguistic feedback format) on grammar quizzes and the potential positive influence of the new form on their learning.

> P8: I thought that the grammar quiz was especially helpful because, like before, when I would take the grammar quiz, I wouldn't get a lot of specific feedback. So sometimes I would still be confused about certain parts of it, but then afterward, when it specifies more of like what you're missing and what you need to change. That was super helpful for my learning and also so I could do better on the quiz when I took it the second time.

The excerpt shows the pre-post comparison of the new feedback format. The positive impact of specific feedback indicates the potential effectiveness of explicit metalinguistic feedback on learners' self-study sessions.

4.2. User Experience and Adaptation

In the second major theme, 'User Experience and Adaptation' (28 references), learners shared the ease of the feedback format, characterized by codes of straightforwardness and some adaptation challenges. The codes "Narrowing down" (6 references) and "Straightforward" (3 references)

were the most prominent codes. There were also some codes for challenges. For instance, participants mentioned "Adaptation to new system" (2 references) and "(Feedback) Disappear after next attempt" (2 references), illustrating the transition from initial reluctance to the acknowledgment of the system's ease of use. Three different excerpts from participants indicated a rather easy adaptation period. The last excerpt mentioned adjusting to the new format and how the color coding elaboration disappears when they attempt to take the quiz again.

> P6: Umm, I thought the grammar quiz part worked perfectly. I didn't really have any issues with that. Umm, it took a bit of getting used to what colors meant what? But once I learned that, it was fine.
>
> P9: Umm yeah, I thought it was straightforward to use and easy to understand.
>
> P1: But I mean, I guess obviously just like learning to adjust from the previous formatting to the newer version was a little tricky just because I was so used to having to kind of start over the entire question again. And also, oh, I would say also like, not like when you start your second attempt, those red and green answers didn't stay, you know what I mean?

4.3. Constructive Criticism and Suggestions

Under the theme 'Constructive Criticism and Suggestion', codes "Needs Improvement" (2 references) and "Link to mistaken grammar pages" (2 references) pointed to areas where learners felt enhancements were necessary. A significant suggestion was for "More specific feedback" (1 reference), with a learner suggesting, "One critical improvement suggestion from the participants was indicating the repeated words" for filling in the blanks.

> P2: And also, like on some of the repeatedly used words, probably showing like how many times it should be used could be helpful.
>
> P3: It was not that much clear in the in the feedback that was given. Like sometimes I used to like make mistakes because of like some particles were repeated, like I was supposed to use them twice in the sentence and sometimes like, I forget to use one.

Another improvement suggestion by participants was to create links from items used in the grammar quizzes to the related grammar pages in the online textbook.

> P8: …but like, if you are doing like a grammar quiz that includes like multiple different grammar points, but it also includes like the one that you're currently working on, then like… OK, so if you take the quiz the first time and like you missed something since it's already set up to say like more specific things that you missed, it can also maybe like send you to a page that has more information about like a different grammar topic that you missed.

4.4. Satisfaction and Preference

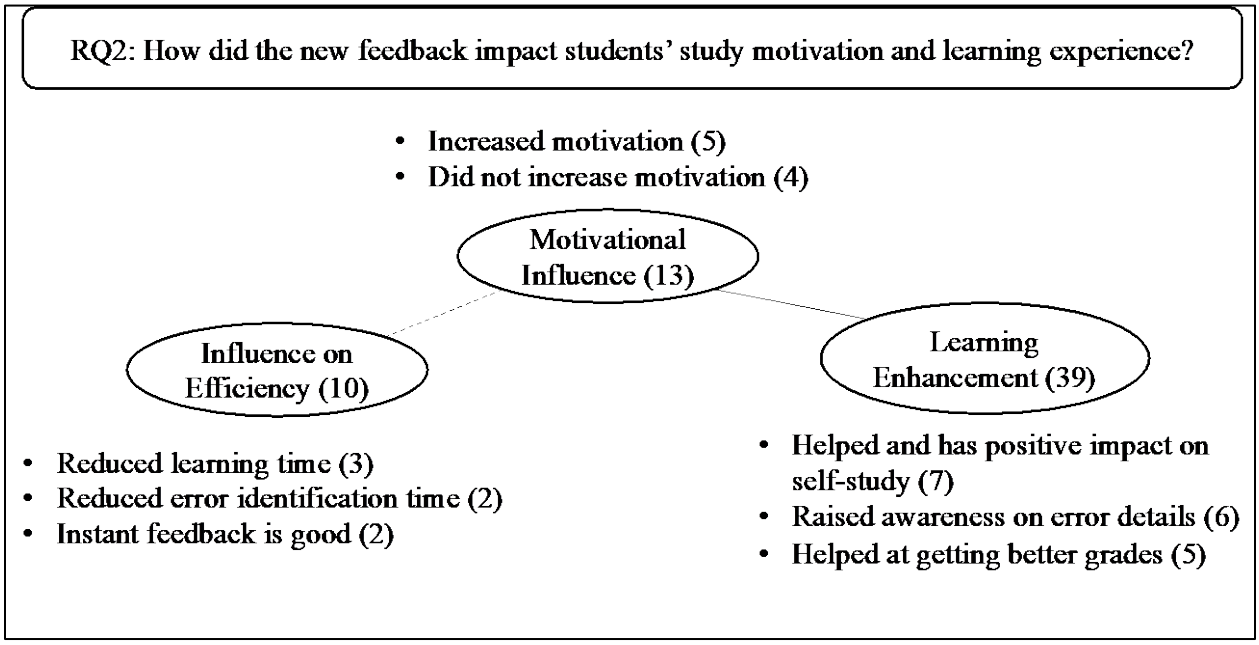
The 'Satisfaction and Preference' theme captures learners' overall contentment and specific likings toward the new feedback format. The codes "No complaint" (5 references)", "No change needed" (3 references), and "Satisfied" (2 references) indicate a favorable view.

> P2: Yeah, it definitely motivate me to like, um learn because I'm more happy with the system. Especially sometimes when the feedback on which part I was making a mistake previously, I like sometimes got frustrated with the system. Is it like a mistake that was

because of the system or something else like because you know in Japanese, yes, language. There are multiple ways of saying one single sentence sometimes, and exactly, I'll be thinking that's the reason. So yeah, sometimes when I'm not noted with where did I make a mistake at? I'm just kind of mad at the system. But yeah, after it's giving a color-coded on, like if I'm using a wrong word or something, yeah, and I'll be just start thinking about like that part instead. So yeah, it's making it much easier, and I'm more happy with the system."

Here, the participant touches upon how satisfaction contributes to their study motivation through the newly elaborated feedback form.

Figure 3: Thematic Analysis for Learning Experience and Study Motivation



Note. Research Question 2 related themes and major codes based on participants' responses.

4.5. Learning Enhancement

In response to RQ2, 'Learning Enhancement' emerged as the most significant theme. This theme reflected the educational impact of the explicit metalinguistic feedback format, with codes like "Helped during self-study" and "Impact on self-study" (7 references). It showed the scaffolding role of the new format during self-study. The code "Raised awareness on error details" (6 references) indicates the metacognitive level of learning, and the code "Helped at getting better grades" and "Increased grades" (5 references) show the tangible value of direct metalinguistic feedback for the learners.

Multiple learners emphasized how they learned through their mistakes when elaborate feedback was there after the implementation. The second excerpt indicates how the participant applied their strategies to their weaknesses and focused on those points.

P6: That was really helpful because before, I didn't know what I was doing wrong. But once the new updates came, I could figure out what was wrong with each of the sentences that I got wrong and correct myself from there.

P1: Yes, I guess I benefited in the sense that I was more aware of the parts that I would consistently be getting wrong. You know, like the parts of the sentence or whether it's particles or different nouns or different adjectives, just like different types of vocab. Just seeing something like that, consistent with either green or red within different answers, kind of led me to be more aware of what I needed to work on or what I'm doing well in.

4.6. Motivational Influence

Motivational influence showed mixed opinions and various perspectives from the participants. Multiple participants stated they found the new feedback format to positively impact their study motivation, whereas some other participants found no impact on their motivation. "Increased Motivation" (5 references) suggests the feedback system's positive impact on students' motivation. Conversely, "Did not increase study motivation" (4 references) indicated that not all feedback was encouraging. One student shared a nuanced view: "Knowing instantly where I went wrong boosts my motivation to improve, though it can be disheartening to see so many mistake." In the excerpt below, the participants mention simplified identification of the errors and elaborated feedback was supportive to complete all assigned tasks daily.

P3: And yeah, I found this to be super motivational because, once you try again if you made any mistake, you try again, and you follow the feedback that you were given and you get it correct and like it. It's also like very motivational like completing all the quizzes and continuing to learn and do all the tasks on a daily basis.

The opposing opinions included more elaboration on how motivation was not an outcome of the new feature but helpful in other ways.

P5: I don't think it increased my study motivation, but understanding the content better it probably helped. Well, maybe not better, but faster. It helped in the speed of things.

Another participant mentioned the existence of feedback encouraged them in participation to participate in the activity.

P1: And so just knowing that support was kind of there within those questions was kind of kind of increase my motivation to like participate and yeah, if that makes any sense.

A unique affective aspect was the anxiety of getting low grades and participating in class activities. One student's excerpt explained:

P7: Umm, before I would go into homeworks with like a sense of fear. like I would be like, OK, this is anxiety. Because I knew that I might not get 100. And a lot of the times I would start these homeworks late. So I would miss office hours. Yeah, so after the feature was introduced, I was much more comfortable starting the homeworks because I knew that I would know what I'm doing wrong and I would be able to do it quicker…… Ohh, in terms of my motivation for learning uh, as I said, like the anxiety definitely was not very like helpful for my motivation. What would happen is that I would approach homework with anxiety and then I would not perform that well like I would get decent grades but still not like Max, right? So a few of my concepts would still be grammar concepts, and stuff like that would be not complete, right? And then, I would go to class the next day or the two days after. And then since they would be teaching the exact same topic I would not be able to answer in class because I would be doubtful of myself. Like

> what if I'm what I'm saying is right or wrong? I do not know. But then, yeah, but then afterward, I knew what was going on.

Consequently, the motivational aspect revealed various aspects from the participants' input with rich explanations.

4.7. Feedback Efficiency

Finally, 'Feedback Efficiency' was underscored by codes that emphasized the time-saving aspect of the feedback, such as "Reduced learning time" (3 references)", "Reduced error identification time" (2 references), and the appreciation of automated elaboration "Instant feedback is good/beneficial" (2 references). This efficiency was appreciated by learners, with one explaining: "The instant feedback has definitely made my study sessions more productive by cutting down on the time I used to spend figuring out what I got wrong." Another learner shared their opinion about the efficiency through elaborated feedback and color coding.

> P3: It really improved my experience compared to before I used to spend a lot of time trying to figure out what was my mistake for each quiz. But with this feature, it made it very much easier and it reduced the time needed for me to find out what went wrong and how to correct it.

5. Discussion

The findings of this study indicate multifaceted themes in using elaborated feedback on auto-graded grammar quizzes in language learning. The input of participants about the experience with the new system, as perceived utility value of the new feature formed around its efficiency, enhancement in learning, what are motivational points of having elaborated feedback feature, and learners' suggestion ideas.

Learners' opinions about the learning enhancement aspect of elaborated feedback are aligned with previous studies where explicit feedback led to better learning (Bodnar et al., 2017; Li, 2010; Nagata, 1997). Participants underscored that comprehensive, explicit metalinguistic feedback was instrumental in enabling them to pinpoint errors during their initial attempt at online quizzes. The employment of color coding was favorably received for its efficacy in highlighting areas of focus and identifying prevalent errors among learners. This observation corroborates Li's (2014) findings, which suggest an enhancement in learners' metacognitive error awareness. Furthermore, learners positively perceived the direct correlation between detailed feedback and improved quiz scores, with many reporting higher grades post-feedback implementation. The advantage of explicit feedback is in concordance with Petrović et al. (2017), emphasizing the significance of detailed feedback in improving performance outcomes."

The motivational perspective of elaborated feedback brought mixed results in this study, as previous research suggested the impact of feedback on student motivation (Busse, 2014; Wisniewski et al., 2020). Some participants shared that the new feedback feature did not impact their study motivation. In contrast, some participants shared unique perspectives, such as how having elaborate feedback reduced their anxiety towards quizzes, and the existence of elaborated feedback was encouraging in terms of feeling scaffolded. This finding highlights the importance of addressing the affective needs of learners under the Self-Determination Theory (Ryan & Deci, 2020) principals from a motivational perspective.

5.1. Limitations

Interviews were conducted six months after the new feedback format was implemented, and there was a summer break after their semester ended. Thus, learners might not remember exact details about the previous and new feedback format, which could jeopardize the precise assessment of the benefits or pitfalls of the new system.
Also, there was no question about learners' proficiency level or semester-end grade in the interview that could relate to their opinion on the feedback system. Furthermore, due to the time limitation to collect data, student numbers were kept at a minimum, and further data triangulation, such as collaborating with another rater, was not conducted.

5.2. Implications

A further study can be conducted to probe whether there is a relation between learners' grades and their perceived utility value of the new feedback format. Also, demographics such as first language, experience in another foreign language study, experience in online learning environments, and flipped classrooms can be researched quantitatively. However, current results can shed light on designing online textbook features based on user expectations and instructional design principles in subject-specific approaches, such as foreign language learning or math. Creating better learning environments to engage learners may be better to address the motivational aspect of asynchronous assignments.

6. Conclusion

The outcomes of this case study provide clear insights in response to the posed research questions. The initial research question probed the learners' multifaceted experiences with the course software, yielding findings that underscore a predominantly positive reception. Participants—learners of Japanese—reported that the revised automated feedback, particularly the color-coded elaborations, enhanced their user experience, rendering it more focused and intelligible during grammar exercises. Despite a period required for acclimatization to the new system, the feedback was perceived as pedagogically beneficial. Conversely, the learners articulated varied expectations within their suggestions for improvement, pointing to individualized educational needs.

Addressing the second research question, the data reveals that the learners unanimously recognized the positive influence of the new feedback on their learning experience, with a pronounced appreciation for its contribution to their autonomous study sessions. This finding is especially pertinent given the course's reliance on independent study for grammatical and lexical proficiency. However, in terms of motivational impact, the feedback influence was less pronounced, with learner testimonials reflecting a spectrum of effects on study motivation rather than a uniform enhancement.

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