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Research Article

Grammar Express Unleashed: A Microlearning Hub Approach to Least Learned English 7 Competencies

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ABSTRACT

The study employed a mixed-method developmental approach to design a learning hub imbued with microlearning to address the least learned competencies in English 7. The least learned competencies were identified by considering existing test results in the locale of the researcher, which were supported by the findings of existing studies in the literature through a systematic review. The researcher assumed the roles of content creator and curator and identified relevant microlearning materials available for access. Experts validated the quality of the identified learning content through an adopted questionnaire. Afterwards, the researcher designed the Grammar Express. ICT experts were asked to validate the platform using an adapted rubric to determine whether it is suitable as a learning website. An adapted questionnaire was used to measure the level of acceptance of Grammar Express by language teachers. Meanwhile, an adapted questionnaire was used to evaluate the level of usability of the platform as perceived by the students. Based on the findings, the respondents believe that Grammar Express is useful since it offers tangible benefits and can enhance instruction. Similarly, in terms of perceived ease of use, Grammar Express requires less effort to learn and utilize. In addition, there is a strong positive attitude to incorporate Grammar Express in language teaching. Furthermore, there is a strong intention to use Grammar Express, which indicates a high level of acceptance and enthusiasm for the platform. In terms of usability, there is a strong inclination toward frequent use and displayed confidence in navigating the platform independently.

Keywords: *Learning hub, Grammar, English, Language learning, Technology integration*

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Introduction

E-learning has become an emerging trend in the education system around the world. From being an alternative channel to deliver lessons, it has become a sustainable platform for providing rich learning experiences. Virtual education is highly valued for its flexibility, cost-effectiveness, and convenience in terms of access. It serves as a dynamic alternative for self-motivated students who can effectively manage their learning goals and stay focused on their tasks (Dung, 2020). A type of e-learning platform comes in the form of a virtual learning environment (VLE). According to Oxford University Press (2016), a VLE is a web-based system designed to deliver educational materials to learners. It enables learners to access learning materials and participate in learning activities in a virtual or remote setting. It is widely acknowledged as an internet-based platform that facilitates a range of educational activities, such as online courses, quizzes, and tutorials (Naimi-Akbar et al., 2023).

Microlearning is a relatively new concept in the field of education and training, which is often seen as a natural extension of e-learning. Concentrating on the digital delivery medium, Göschlberger and Bruck (2017) defined microlearning as a didactic notion in which brief, comprehensive, and cogent learning materials are distributed to the audience. While some might mistake microlearning for simply shortening lectures, it is much more. As Allela (2021) pointed out, microlearning is an action-oriented approach that leverages technology to break down complex knowledge into digestible pieces. Furthermore, according to Nugraha et al. (2021), microlearning is a type of innovation in the learning process that can be made feasible by various instructional resources, including podcasts, PowerPoint slides, infographics, motion graphics, videos, video-conferencing, and gamification. Sirwan Mohammed et al. (2018) emphasized that the VLE platform grants learners the flexibility to access information at their convenience, anytime and anywhere, and in their preferred media format for learning. Hence, microlearning modules can be generated in different formats and uploaded onto a VLE for learners to access conveniently. By utilizing a VLE, microlearning content can

be delivered to learners in a structured and orderly manner.

Although most Filipinos speak English fluently, there has been a gradual decline in their proficiency. According to the English First (EF) English Proficiency Index (2023), the Philippines' position fluctuated over the years. The country must intensify its efforts to improve English teaching and learning. Caiga (2022) summarized the TOEIC results of students from a tertiary education institution and found that there is a low overall English proficiency level of the students. According to Hikmah et al. (2019), learners do well when writing content but often struggle with mechanics. Learners may have an idea of what to write about but need help to proceed in the writing process due to difficulties in constructing grammatically sound sentences. Meanwhile, Bentsen (2017) opined that grammar instruction should be more frequently addressed in schools. The learners' frequent grammatical errors have resulted in fossilized erroneous utterances. By systematically reinforcing grammar concepts throughout their learning journey, students can develop a deeper understanding of English grammar, which is essential for success in standardized tests such as TOEIC.

Furthermore, according to the results of an institutional test in English, it has become evident that Grade 7 English as a Second Language (ESL) learners in the locale of the researcher are having difficulty grasping grammatical concepts. Challenges encountered in grammar learning align with the conclusions drawn from prior local research. Apolonio's (2021) investigation shed light on learners' struggles with comprehending subject-verb agreement rules, utilizing the simple past and past perfect verb tenses, and applying the voices of the verb. These findings underscore the presence of a discernible gap in grammar instruction. Moreover, the current study drew upon the recommendations of Sirwan Mohammed et al. (2018) and Choudhary and Pandita (2023) in their respective studies. The former recommended the use of microlearning in education, while the latter suggested the exploration of microlearning in virtual environments to attain learning outcomes. Building on these, the present research aimed to leverage microlearning techniques to

address the least learned competencies (LLCs) related to grammar in English 7 by creating a VLE that incorporates the concept of micro-learning as an intervention. The study also aimed to assess the acceptability as perceived by language teachers and the usability of the VLE among ESL learners. Acting upon this concern shall remediate the learners' deficiencies in the competencies of their previous level since the English curriculum is being taught in a spiral progression (Department of Education, 2016). This means that learners are being taught grammatical items, structures, and different types of texts at progressively higher levels of difficulty and complexity. This progression enables learners to advance from foundational language proficiency to more advanced levels.

Methods

The study adopted an explanatory mixed-method approach, which integrates both qualitative and quantitative research approaches to provide comprehensive insights and validation. Explanatory design involves analyzing quantitative data initially, followed by qualitative data (Creswell & Plano Clark, 2007). These qualitative data are subsequently utilized to explain the initial quantitative findings. By employing this approach, the study aimed to achieve a more holistic understanding by leveraging the strengths of both quantitative and qualitative methodologies. The study used a purposive sampling method to determine the respondents. It is a non-probability sampling technique that involves selecting subject units because of the potential data that can be gathered relevant to the study (Nikolopoulou, 2022). In this case, the researcher had observed the concerns that the study aimed to address in her locale. Since the study intended to remediate the learning of English 7 competencies, Grade 8 students were asked to serve as student respondents for the usability evaluation of the platform. Also, language teachers were asked to serve as respondents for the evaluation of the acceptability of the platform. The adapted TAM questionnaire from Weng et al. (2018) and the SUS questionnaire from Lewis (2018) were employed as research

instruments, along with a validated interview questionnaire.

Result and Discussion

The microlearning hub was tailored to the needs of the locale and existing literature. Through this, the relevance of the learning hub is guaranteed to be of great value since it mirrors the needs of the learners. Results from previous examinations were requested from the locale of the study. The parameter limits employed by Monteron and Sanlad (2020) were adopted to identify the level of performance of the learners in each competency. The percentage of correct responses for the competencies was identified by dividing the total number of correct responses in all test items for the competency as stated in the table of specifications over the maximum possible number of correct responses. The identified percentage of correct responses for the competency was matched to its level of performance. The following competencies with low mastery rating were categorized as least learned: (1) Observe correct subject-verb agreement; (2) Link sentences using logical connectors that signal chronological and logical sequence and summation; (3) Use the passive and active voice meaningfully in varied contexts; and (4) Use the past and past perfect tenses correctly in varied contexts.

Moreover, a systematic review of literature was conducted further to support the findings in the locale of the researcher. The researcher conducted an independent screening of all the studies that were retrieved from the search syntax used in the Google Scholar database and followed the guidelines of Xiao and Watson (2019) in conducting a systematic literature review. Seventy-four (74) records were reviewed according to title and abstract to identify if those were relevant to the review question. Studies that did not meet the inclusion criteria were excluded at this stage. The reasons for exclusion encompassed not being published between 2018 and 2023, not being situated within the context of the Philippines, or not being aligned with the target population. After this screening, twenty (20) studies remained. The researcher then assessed the full text of the twenty (20) studies for eligibility. Again, stud-

ies were excluded if they did not meet the inclusion criteria. Reasons for exclusion at this stage included not having a full-text version available

or not including a detailed discussion of the intervention and its outcome. Hence, seven (7) studies were included in the final synthesis.

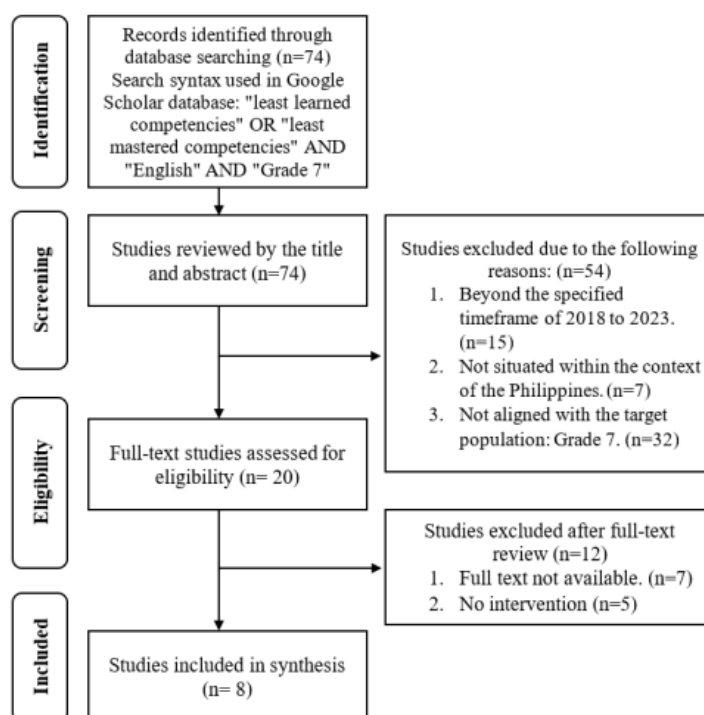


Figure 1. Systematic Review of Literature Workflow

The studies of Apolonio (2021), Cabaltica and Osabel (2021), Cordova et al. (2019), Linggat and Orge (2019), Puno and Villanueva (2019), and Sarasua (2021) highlighted the difficulties of learners in grasping the rules of subject-verb agreement. Meanwhile, the study of Cordova et al. (2019) underscored the difficulties of learners in using logical connectors. Also, the studies of Apolonio (2021), Sarasua (2021), and Sarasua and Tadije (2019) found that learners struggle to understand and use the simple past and past perfect tense of the verb, while Apolonio (2021) found difficulties in learners in using the voices of the verb. Similar least-learned competencies in the literature strengthen the need to address these shared educational challenges. This proved that the observed challenges are not only confined to the locale of the researcher but also to various settings and times.

The systematic approach provided by the ADDIE model, as advocated by Ghani and Daud (2018), has been instrumental in guiding the development of the Grammar Express

microlearning hub. Before developing the microlearning hub, the researcher considered the various elements essential for the planning stage, from the recommendations of Torgerson and Iannone (2020). The matrix outlined the learners' needs, the desired outcomes, solution type, delivery methods, target audience, content formats, and the necessary technological infrastructure. By clearly laying out the learners' needs and the intended impact of the platform, the matrix sets the direction for the entire project. Content creation and curation was then undertaken by the researcher. The content curation process that Kanter (2011) advocated was followed, which involves three steps: seeking, sensing, and sharing. The process of curating and condensing grammar learning content licensed under Creative Commons resulted in the inclusion of relevant materials that are freely available. Secondly, sensing involved presenting the materials in an orderly and organized manner on the platform. Lastly, sharing involved appropriately citing the sources of the learning resources. Furthermore, a

copyright and intellectual property policy was displayed on the footer of Grammar Express, stating that the materials curated in the learning hub were solely for educational purposes. The developer does not claim ownership of any third-party content or materials that may be referenced, linked to, or embedded within the learning hub. Such third-party content/materials remain subject to the intellectual property rights and ownership of their respective owners.

Afterward, seven (7) experts in English language education were asked to evaluate the

learning content to ensure quality and accuracy using an adapted evaluation rating sheet for non-print materials from the Department of Education (2009). The experts validated the learning content according to content quality, instructional quality, technical quality, and other findings. To pass each criterion, the resource must score a minimum of 30 out of 40 points for Content Quality and Instructional Quality, 39 out of 52 points for Technical Quality, and 16 out of 16 points for Other Findings.

Table 1. English Language Experts Validation Rating of Grammar Express

Criteria	Mean	Interpretation
content quality	38.57	Passed
instructional quality	38.43	Passed
technical quality	49.86	Passed
other findings	16	Passed

Once all suitable learning content was identified for inclusion in the learning hub, the development process proceeded to the next stage. The researcher then utilized the Google Sites platform to design the learning hub. It is a web-based application that offers building websites

with multiple web pages that can be integrated with other Google services. The design of the site was based on the manual published by Pixel Academy (2021), which encompasses the dos and don'ts of user-interface design.



Figure 2. Grammar Express Home Page

The homepage features a large banner that says, "Learn Grammar in Minutes!" to capture learners' attention. Below the banner, there are a few sections that highlight different features of the website. The first section is called "Grade Level." This section allows users to select the grade level of their choice. The second section

is called "Video Lesson Highlights." This section features the website's most popular video lessons. The lessons cover topics such as subject-verb agreement, logical connectors, active-passive voice, and simple past and past perfect tense.

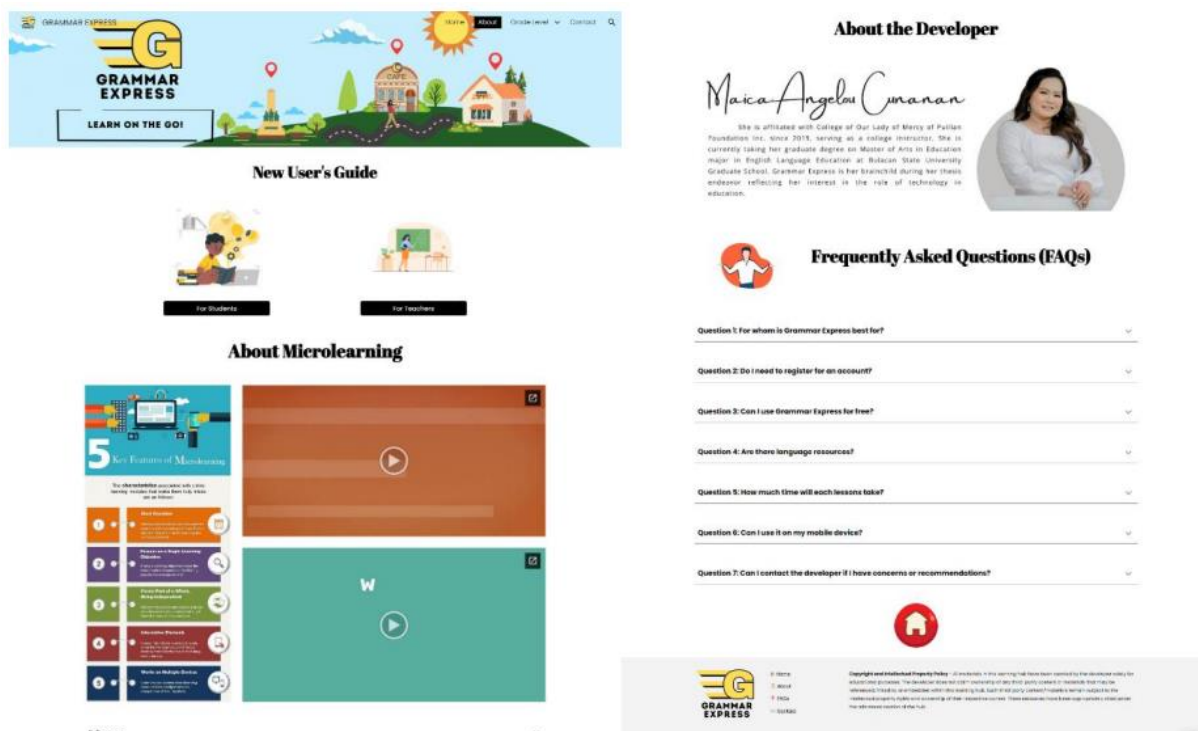


Figure 3. About Page of Grammar Express

To guide the potential users of Grammar Express, a separate user guide for language teachers and students is presented to help onboard new users, provide instructions, standardize use, support self-help, and encourage adoption of the platform. The important key features of microlearning were discussed such as learning contents should be available on-demand, useful in itself, and accessible from any device. This implies that learners can access the content of Grammar Express whenever

and wherever it is convenient for them. This flexibility makes learning more accessible and convenient for use. Also, a brief introduction to the developer was included to inform the users about her background. In addition, an FAQs section has been created to address possible common questions that users may have about their use of Grammar Express. This can minimize confusion and ensure that users are aware of the platforms' capabilities



Figure 4. Teacher's Guide to Grammar Express

The Teacher's Guide page provides a comprehensive overview for language teachers to understand and utilize the Grammar Express microlearning platform. It includes an introduction of the platform, an overview of the sitemap, and available content. The guide aims

to equip educators with all the necessary information to confidently introduce the Grammar Express platform to their students and maximize its benefits as a supplemental learning tool to reinforce grammar skills



Figure 5. Student's Guide to Grammar Express

The Student's Guide to Grammar Express aims to inform learners about the premise of the hub and the independent use of its contents. It introduces the overall layout, navigation of the hub from the homepage, and the available learning resource types. It intends to

encourage learners to take ownership of their grammar skill development through independent and self-directed use of online resources based on their unique needs and learning preferences.

Grade 7

Subject Verb Agreement

The subject and the verb must agree in number, which means that a singular subject should be paired with a singular verb, and a plural subject should be paired with a plural verb. By understanding and applying the rules of subject-verb agreement, you can ensure that your sentences are grammatically correct and effectively convey your intended meaning.

Logical Connectors

These are words or phrases that connect two or more ideas or statements in a logical and coherent manner. They play a crucial role in structuring and organizing thoughts, arguments, and written or spoken communication. By using connectors effectively, writers and speakers can enhance the clarity, coherence, and flow of their ideas, making their communication more persuasive and compelling.

Voices of the Verb

The voices of verbs, namely active voice and passive voice, play a crucial role in sentence construction and convey different perspectives. Understanding the voices of verbs allows writers to effectively convey their intended meaning and create well-structured sentences that suit their purpose and style.

Simple Past and Past Perfect Tense

These tenses are both used to talk about actions or events that happened in the past. However, they are used in different ways and convey different meanings. Understanding the differences between the Simple Past and Past Perfect tense can help you accurately convey the timing and sequence of events in the past.

Figure 6. Grade 7 Page of Grammar Express

This section contains the grammar topics intended for Grade 7 learners. It provides an overview of the common grammar challenges faced by ESL learners. It allows them to address

these challenges by exploring the website's resources on these topics, and they can deliberately choose specifically where they need improvement.

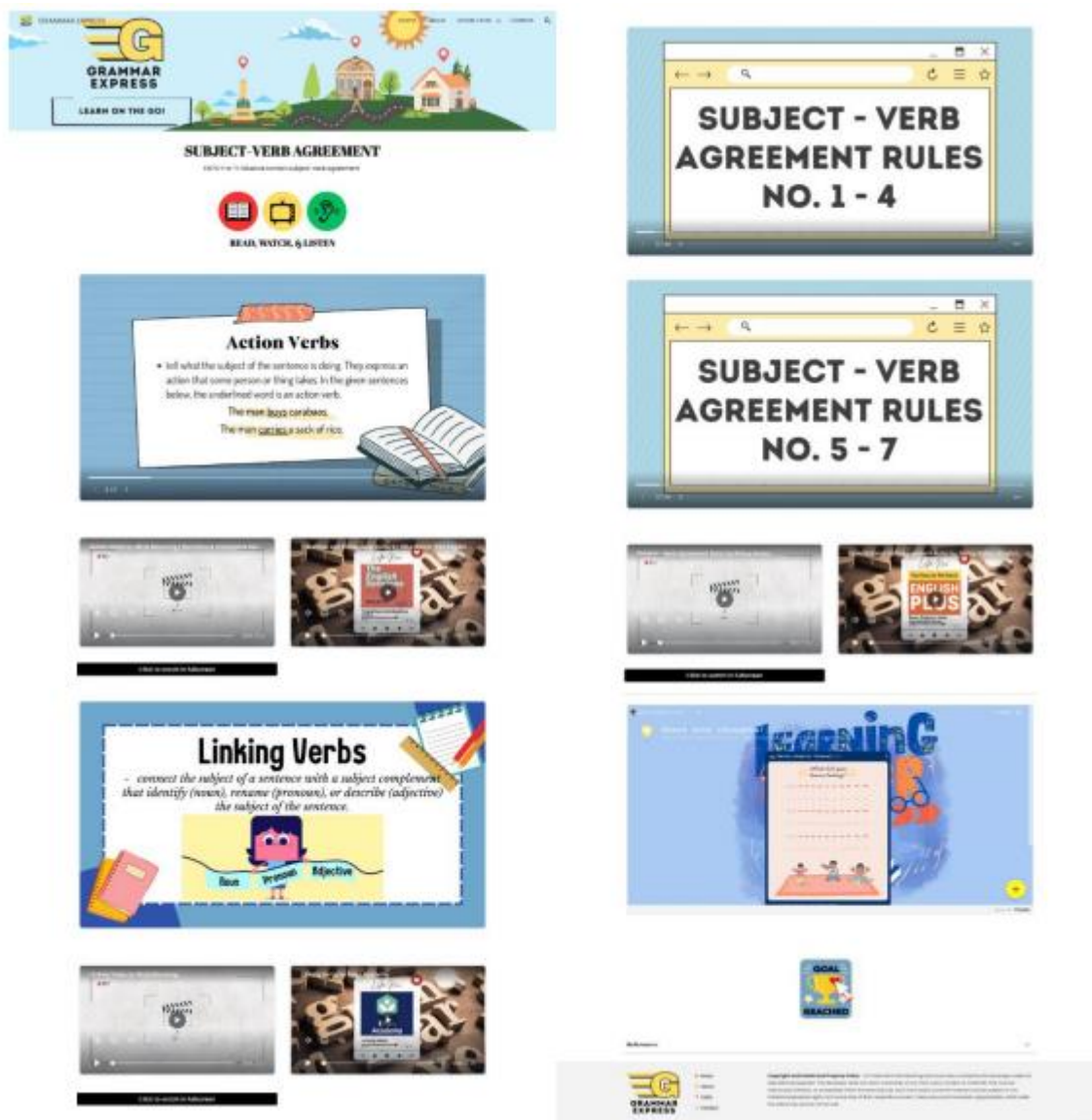


Figure 7. Sample Lesson for English 7

The learning pages in Grammar Express offer diverse microlearning materials such as infographics, presentations, podcasts, and short videos. Users can also practice with exercises to reinforce learning and share insights on a reflection wall, fostering peer-to-peer knowledge exchange

Three (3) experts in the field of Information and Communications Technology (ICT) were asked to validate the learning hub using an adapted rubric for learning website validation published by Ayers Institute for Teacher Learning and Innovation (2015). The adapted rubric focused on the credibility, authority, audience, website summary, educational value, and

design and navigation of the learning platform. After carefully considering the recommendations of the experts, the researcher redesigned Grammar Express to achieve a level of quality that is satisfactory for the experts consulted.

The language teachers evaluated the platform to assess its acceptability using an adapted TAM questionnaire. The components examined were perceived usefulness, perceived ease of use, attitude toward using, and intention to use. The following presents the components of the TAM, the mean scores each received, standard deviation, and verbal interpretation.

Table 2. Summary of Determinants of TAM

Determinants	Mean Score	Standard Deviation	Verbal Interpretation
PU	4.85	0.36	Strongly Agree
PEU	4.72	0.45	Strongly Agree
ATU	4.81	0.39	Strongly Agree
ITU	4.88	0.33	Strongly Agree

The results presented a strong acceptance across all key determinants. The mean score of PU is 4.85 with a standard deviation of 0.36, which means that, on average, the respondents strongly agree that Grammar Express is useful. The mean score for PEU is 4.72, with a standard deviation of 0.45, which means that the respondents strongly agree that Grammar Express is easy to use. In addition, the mean score of ATU is 4.81, with a standard deviation of 0.39, which means that the respondents strongly agree that they have a positive attitude toward using the platform. Lastly, the mean score of ITU is 4.88, with a standard deviation of 0.33, which means that the respondents strongly agree that they intend to use the technology in the future.

To support the quantitative findings, the researcher interviewed English language teachers to gather input on Grammar Express's strengths and weaknesses. On the one hand,

respondents commended the inclusion of the new user's guide for both learners and teachers, the alignment of the learning content with the curriculum standards, gamification, accessibility, and on-demand learning. On the other hand, a few weaknesses were noted, which reflect common drawbacks associated with online learning in general, such as connectivity problems and access to technological devices.

In terms of usability, the student respondents were asked to evaluate the level of usability of Grammar Express using an adapted SUS questionnaire. SUS consisted of ten (10) Likert-scale questions, each with five (5) response options ranging from "Strongly Disagree" to "Strongly Agree." The usability score for each item was calculated by subtracting one (1) from the user's response scale position. This resulted in a score contribution that ranged from zero (0) if the user strongly disagreed to four (4) if the user strongly agreed (Brooke, 2013).

Table 3. System Usability of Grammar Express as Perceived by the Learners

Descriptors	Mean Score	Verbal Interpretation
1. I think that I would like to use Grammar Express frequently.	3.47	Strongly Agree
2. I found Grammar Express to be simple.	3.66	Strongly Agree
3. I thought Grammar Express was easy to use.	3.63	Strongly Agree
4. I think that I could use the Grammar Express without the support of a technical person.	3.63	Strongly Agree
5. I found the various functions in Grammar Express well integrated.	3.61	Strongly Agree
6. I think there is consistency in Grammar Express.	3.63	Strongly Agree
7. I would imagine that most people would learn to use Grammar Express very quickly.	3.68	Strongly Agree
8. I found Grammar Express very intuitive to use.	3.68	Strongly Agree
9. I felt very confident using Grammar Express.	3.58	Strongly Agree
10. I can use Grammar Express without having to learn anything anew.	3.55	Strongly Agree
Total	36.12	
Standard Deviation	0.63	
SUS Score	90.30	Best Imaginable

The gathered mean scores in the table are very positive, ranging from 3.47 to 3.68, with all items suggesting that the learners strongly agree that the Grammar Express is a highly usable, simple, intuitive, and consistent platform for learning grammar. They felt confident using it independently and found its functions well-integrated. Moreover, they believed that most users could learn to navigate it quickly, even for those with limited technical experience. The high mean scores with an SD of 0.63 indicate that the data are relatively close to the mean. The low standard deviation implies that most users share similar perceptions and experiences that Grammar Express is easy to use, intuitive, and does not require technical support to operate. This overall positive feedback is indicative of a well-received user experience. Generally, a total SUS score of 90.30 falls within the "Best Imaginable" range (84.10-100.00), signifying an incredibly positive user experience and exceptional usability. It also falls under the 96-100 percentile range, which means that Grammar Express' score is higher than 96% of other applications tested by Lewis and Sauro (2009). The findings from the System Usability Scale (SUS) questionnaire indicate that the respondents strongly agree with the statements related to their perception of Grammar Express. These unanimous responses suggest that the respondents have a highly positive view of the platform's usability. They express a strong inclination to use Grammar Express frequently and find it to be simple, easy to use, and well-integrated with various functions.

To reinforce the quantitative findings, the researcher sought feedback on the strengths and weaknesses of Grammar Express from the learners. The learners appreciated the user-friendly feature of the learning hub, the engaging learning content, games, and practice exercises, and the organization and comprehensibility of the learning content. On the other hand, most of the respondents suggested adding more materials to provide more options for users. Generally, the respondents believe that they can use Grammar Express without needing technical support, which indicates a high level of self-sufficiency. The respondents also perceive consistency, intuitiveness, and immediate learnability in using Grammar Express,

which leads to a strong sense of confidence and minimal need to learn anything anew. All the collected quantitative and qualitative data suggest that Grammar Express is highly user-friendly and intuitive. It has a strong potential for widespread acceptance and adoption.

Conclusion and Recommendations

Based on the research findings, it can be concluded that Grammar Express offers tangible benefits and can enhance their teaching, which ultimately influences their decision to adopt and integrate it into their system. Similarly, in terms of perceived ease of use, Grammar Express requires less effort to learn and utilize, likely leading to greater user acceptance and sustained usage over time. Also, there is a strong positive attitude and willingness to incorporate Grammar Express in language teaching. Furthermore, there is a strong intention to use Grammar Express in an English class, indicating a high level of acceptance and enthusiasm for the platform. These suggest a highly favorable outlook for the adoption and implementation of Grammar Express in an educational setting, with the potential to impact students' learning interests and engagement positively. Furthermore, there is a strong inclination for frequent use and displayed confidence in navigating the platform independently which indicates its high level of usability. The perception of quick learnability and the potential for widespread adoption are strong indicators of Grammar Express' success. Additionally, the seamless integration of various functions within the platform contributes to a smooth and positive user experience. This identifies Grammar Express as user-friendly, intuitive, and effortlessly usable.

Considering the conclusions drawn, the researcher suggests the following courses of action:

1. The researcher recommends that Grammar Express can be used to address the least learned competencies in grammar as an intervention since it is both acceptable and usable.
2. As an alternative means of validating the platform, a pretest and posttest can be conducted to test the microlearning platform's

effects on the learning of grammar competencies.

3. A trial with a larger population is recommended to further assess the Grammar Express learning platform's acceptability and usability.
4. The expansion of scope and breadth of learning content within the microlearning hub can be pursued to accommodate other grade levels and varied learners' needs.

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