

The Effect of Revision-Making of Contextualized Student-Generated Questions on University Students' English Grammar Learning Performance

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Abstract: There is a great deal of research supporting the application of student-generated questions (SGQ) to English curriculums, and recent studies have found L2 learners to benefit further from an elaborated SGQ approach — contextualized SGQ (cSGQ), which leverages the provision of a context for students to base on their generated questions. Previous research has also proved the advantages of making revision on English learner's writing proficiency but its relevance to English grammar learning is yet to be exploited. Thus, the present study aimed to investigate the effect of cSGQ learning tasks combined with the practice of making revision of the given context on L2 learners' English grammar learning performance. A pre- and post-test quasi-experimental research design was adopted, and 88 university students enrolling in freshman English class were invited to participate. The results showed that students in the cSGQ-revision group outperformed those not given the opportunity to make revision in both linguistic knowledge and pragmatic understanding.

Keywords: contextual learning, English grammar learning, online student-generated questions, revision-making

1. Introduction

English grammar has been considered one of the essential elements in teaching and learning foreign languages and Zhou (2018) suggested that English grammar is “a necessary framework in a language system”. As basic as other components like vocabulary and pronunciation tend to be, English grammar plays an important role in monitoring if those basic components are in their correct places in sentences (Borjars & Burridge, 2019).

When it comes to teaching and learning English grammars, which involves linguistic knowledge and pragmatic understanding, researchers in functional schools in the field of linguistics highlight the significance of the communicative aspects of using languages rather than the memorization of the rules of the target languages (Feng, 2013). Learners are believed to develop communicative competence by actually using the linguistic knowledge and cultivate their pragmatic understanding with the provision of contexts (Schwarz & Hamman-Ortiz, 2020), which refers to the comprehension of the language used within contexts, where language users should accurately decode the contextual meaning of the used language in order to achieve the success of communication (Bachman & Palmer, 2010).

Student-generated Questions (SGQ) has been considered one of the innovative ways of teaching and learning English, which involves having students construct questions and corresponding answers on the learning topic (Yu, 2020; Yu, 2021a). Several advantages of SGQ on teaching and learning have been found, including demonstrating and verifying one's understanding and knowledge of the learning materials, resolving misconceptions, and filling knowledge gaps (Juan, 2021; Offerdahl & Montplawasir, 2014). Moreover, in the process of completing SGQ tasks, several effective learning strategies were activated, such as reviewing

the learning materials, finding core concepts, and transforming the learned knowledge into forming new cognition (Bangert-Drowns, et al., 2004; Yu, 2012; Yu & Liu, 2008).

Recently, in view of testlet increasingly prevalence in contemporary assessment practice and distinctive benefits (e.g., efficiency in terms of item development and test administration) (Keng et al., 2008; Lane et al., 2016), Yu (2021b) developed the world's first-ever online student-generated testlets system to support students' formulation of a group of related question items on the basis of a given situation or scenario, and its learning potential as a meaningful extension of SGQ was preliminarily assessed. Leveraging the power of contextual learning (Ampa, et al., 2013; Surya, et al., 2017), 'contextualized student-generated questions' (cSGQ) was later coined (Cheng & Yu, 2021; Lin & Yu, 2021), and the importance of the provision of a context where meaningful and relevant information is provided for students to base their generated questions is stressed. That is, students are given a specific scenario where students generate questions, which should correspond to the given scenario and reflect the situational clues and details of the given context, such as the characters in the story and the timeline of the events. In so doing, students should not only detect and analyze the important information presented in the given context but also apply the learned linguistic knowledge and information embedded in the given context for successful attainment of the cSGQ learning tasks (Lin & Yu, 2021; Yu, 2021b).

Despite that a couple of follow-up preliminary studies supported and substantiated the learning effects of cSGQ (Lin & Yu, 2021; Lin & Yu, 2022), existing studies involved students generating questions based on a fixed scenario. In light of revision-making, defined as the process in which writers could go back and forth in order to move forward (Zamel, 1982) and also known as process-based approach, has been commonly practiced in L2 writing classroom and Goldstein (2015) suggested that revision in writing was a process with various factors interacting and mediating each other within the texts in which students' texts were created through cyclical processes. From the socio-cognitive view on revision, revision making refers to the process where learners make changes to the texts, learning the conceptual ideas of using words, phrases, sentences and paragraphs, and modifying both linguistic and non-linguistic forms within the texts so as to achieve the purpose of successful communication (Finkenstaedt-Quinn et al., 2021; Gere et al., 2019).

Previous research has proven the critical role of making revision on learners' writing process (Barkaoui, 2016; Hayes, 2012). In the process of revision, writers gain insights into and heighten awareness to both linguistic and non-linguistic communicative functions of the language used in the texts, noticing possible problems such as the spelling mistakes and incoherence of the texts, and coming up with solutions to the identified text problems, which may contribute to students' repeatedly read the writing passages, finding and addressing the potential problems within the texts, and thinking better ways to improve the quality of the work (Finkenstaedt-Quinn, et al., 2021).

With the advantages of making revision on the English writing, the present study aimed to investigate the possible influence of making revision combined with cSGQ learning activities on English learners' grammar learning performance in terms of linguistic knowledge and pragmatic understanding. To be more specific, two research questions are examined in the study:

RQ#1 Do students in the cSGQ-revised group have better English grammar learning performance in terms of linguistic knowledge than the group with a fixed, given scenario for SGQ (i.e., the originally conceived cSGQ)?

RQ#2 Do students in the cSGQ-revised group have better English grammar learning performance in terms of pragmatic understanding than the fixed-scenario SGQ group?

2. Method

2.1 The Participants and Study Design

The participants of this study were college students and their English proficiency level was B1 according to the Common European Framework of Reference for Language Learning,

Teaching, Assessment (CEFR). A pre- and post-test quasi-experimental research designs was employed, and two treatment groups were devised – the comparison group (the cSGQ-fixed group) ($N = 44$) and the experimental group (cSGQ-revised group) ($N = 44$).

The topics for cSGQ learning activities were tenses and subjunctive moods. Before the experiment, all participants in the two groups took a pre-test to assess their knowledge on the two targeted English grammars, tenses and subjunctive moods. In total, four cSGQ learning activities were arranged and took place right after instruction on tenses and subjunctive moods. Training on the essential skill and knowledge on SGQ, cSGQ and system use was arranged in consideration that all participants didn't have experience in SGQ before the study. Finally, all participants took the same set of tests to assess their competencies on the two targeted English grammars.

2.2 The Learning System and the Design of Revision Tasks

The online student-generated testlets learning system developed by one of the authors was used in this study (Yu, 2021b). As shown in Figure 1, the half-bottom part is the area for both groups' participants to generate a set of questions on the basis of the given scenario (the half-top portion) for the cSGQ learning tasks. As mentioned, the participants didn't have prior experience in SGQ, a button placed at the upper-left corner above the SGQ field was incorporated as procedural prompts to link to the main idea with key ideas and example sentences for students to refer to when generating questions on the targeted English grammar.

As for system use, the only difference between the two groups lies in that for the participants in the cSGQ-fixed group, the given context (i.e., the top portion) field were fixed so making revision of the given context was not possible whereas the participants in the cSGQ-revised group were allowed to make revision of the given context at their discretion. With revision-making in place, the participants can edit the given scenario by deleting, re-arranging, or adding any words/phrases/sentences before proceeding to cSGQ learning tasks. Such revisions are expected to influence students' use of English vocabulary and grammars, which, in turn, is expected to influence students' English grammar learning performance. As scaffolding for making revision, the participants in the cSGQ-revised group can click on the button placed at the top of the context field, so as to refer to the hints and important notes, for example, the subjects, the time, the sequence of action.

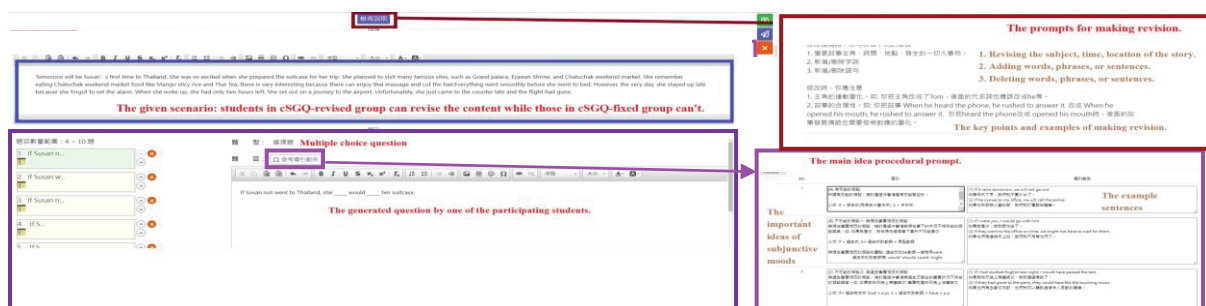


Figure 1. A Screenshot of Testlet for cSGQ-revised learning tasks.

2.3 The Instruments

There were 50 multiple-choice questions with 25 on tenses and with 25 on subjunctive moods. There were 36 questions for the test on linguistic knowledge and 14 questions for the evaluation on pragmatic understanding. The pre- and post-test were made by the authors and were validated by two professors who had more than 10 years of experience in teaching English at universities across southern Taiwan. They helped to correct the wording of the questions, choices and answers and provided feedback and suggestions on the refinement of the questions to make the questions congruent with the teaching objective and the experiment.

2.4 Data Analysis

For the purpose of this study, one-way analysis of covariance (ANCOVA) was conducted on the pre- and post-test of students' English grammar learning performance in terms of linguistic knowledge and pragmatic understanding.

3. Results and Discussion

3.1 Results Regarding the Participants' Learning Performance in Terms of Linguistic Knowledge

Based on the results shown in Table 1, both groups improved their linguistic knowledge after the experiment, and the adjusted score of the cSGQ-fixed group was lower than that of the cSGQ-revised group.

Table 1. *The Descriptive Statistics of Pre-, Post- and Adjusted Post-test of the cSGQ-revised and cSGQ-fixed Groups in Terms of Linguistic Knowledge*

Groups	Pre-test		Post-test		Adjusted post-test
	M	SD	M	SD	M
cSGQ-revised	30.31	7.59	40.59	10.29	40.14
cSGQ-fixed	24.18	8.02	31.05	9.45	34.43

With the F value of the interaction not reaching statistical difference, 1.53 ($p = .22 > .05$), it means that the regression coefficients contain homogeneity, and ANCOVA could be further performed. Using the pre-test scores as covariates, the results of the analysis of ANCOVA between the two groups shows that the F value between the two groups was 43.8 ($p = .00 < .05$). With statistically significant difference, it means that the two cSGQ activities influenced participants' learning in terms of linguistic knowledge.

3.2 Results Regarding the Participants' Learning Performance in Terms of Pragmatic Understanding

Based on the results shown in Table 2, the two groups improved their pragmatic understanding after the experiment, and the adjusted score of the cSGQ-fixed group was lower than that of the cSGQ-revised group.

Table 2. *The Descriptive Statistics of Pre-, Post- and Adjusted Post-test of the cSGQ-revised and cSGQ-fixed Groups in Terms of Pragmatic Understanding*

Groups	Pre-test		Post-test		Adjusted post-test
	M	SD	M	SD	M
cSGQ-revised	18.77	4.09	21.13	3.77	19.77
cSGQ-fixed	10.18	7.05	15.18	6.05	18.03

The F value of the interaction was 0.77 ($p = .46 > .05$), not reaching statistical difference, and suggesting that ANCOVA could be further performed. The results of the analysis of ANCOVA between the two groups show that, using the pre-test scores as covariates, the F value between the two groups was 40.26 ($p = .00 < .05$), reaching statistical difference. It means that the two cSGQ activities influenced participants' learning in terms of pragmatic understanding.

3.3 Discussion on Revision-making on Students' English Grammar Learning

Performance

As found in this study, the participants in the cSGQ-revised group had better learning performance in terms of linguistic knowledge and pragmatic understanding than those in the cSGQ-fixed group. From the socio-cognitive perspective, learners in the process of making revision would gain insights and awareness of the used linguistic knowledge and situational information (Barkaoui, 2016; Hayes, 2012). That is, when making revision, learners would pay more attention and better figure out what and how to improve the quality of their written texts, noticing possible problems, thinking and trying to figure out solutions to the currently encountered problems. Such processes would provide learners with more opportunities to rehearse the learned content and consolidate their knowledge before, during and after making revision, which should contribute to better learning performance. For example, when learners try to modify the sequence of the story, they need to familiarize themselves with the use of different tenses in order to successfully change the order of the events as depicted in the scenario.

4. Conclusion

The present study elaborates cSGQ learning tasks by introducing the element of revision-making of the given context (cSGQ-revised) for EFL learners, hoping to further help develop their target language proficiency as compared to the cSGQ-fixed learning tasks. The obtained results demonstrated that students in the cSGQ-revised group outperformed those in the cSGQ-fixed group in terms of both linguistic knowledge and pragmatic understanding. The findings of the present study provide the empirical support on the effect of cSGQ learning tasks with making revision on L2 learners' grammar learning performance.

Despite the potential benefit of cSGQ-revised learning activities on L2 learners, some limitations of using this innovative teaching and learning approach should be noted. Specifically, the present study focused on English grammar learning performance, and future studies could explore the potential of cSGQ-revised learning activities, say, on L2 learners' receptive and receptive skills.

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