## Short Research Papers

## Reliance on Quizlet for Content and Assessment

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When emergency remote teaching was implemented in Semester 1，2020，course content and assessment schedules needed to be quickly amended．Having previously found Quizlet， a popular digital flashcards mobile app and website，to be an effective and enjoyable vocabulary learning tool，both authors independently included it in their online courses． Using Quizlet，teachers can assign vocabulary sets for students to learn，and for teachers to track student progress via a teacher account on the Quizlet website．In the emergency online teaching situation，this seemed an ideal tool by which content could be delivered and upon which assessment could be based．Throughout the semester，the majority of students carried out their assigned vocabulary study，but questions arose about the degree to which students were benefiting from these tasks and the extent to which they may or may not enjoy them． There was also the possibility that some students might be＂gaming＂the system．A survey（ $N$ $=386)$ was administered to help clarify whether relying so heavily upon Quizlet for online class content and assessment had been a good decision．The survey results suggested that the students enjoyed using Quizlet，that they perceived benefits in doing so，and that they took the work seriously，and therefore that utilizing Quizlet had been a good approach to take．

2020年の前期に緊急遠隔授業が実施された際，コース内容と評価スケジュールを早急に修正する必要があった。デジタルフラッシュカードのモバイルアプリとウェブ サイトで人気のあるQuizletが，効果的で楽しい語彙学習ツールであることを認識し ていた 著者2人は，独自に遠隔授業にQuizletを取り入れた。Quizletを使用するこ とで，教師は生徒が学習する単語リストを割り当て，Quizletのウェブサイト上の教師 アカウントを介して生徒の学習状況を確認することができる。緊急時のオンライン授業では，コンテンツを提供し，それに基づいて評価を行うことができる理想的なツ ールだと思った。学期を通して，大半の学生は与えられた単語学習を行っていた が，学生がこれらのタスクからどの程度効果が出ているのか，楽しんでいるのかい ないのかという疑問が生じた。また，一部の学生がシステムを不正行為している可能性もあった。そこで，オンライン授業のコンテンツと評価を多大にQuizletに頼っ

> たことが正しかったかどうかを明らかにするために，アンケート調査を実施した（ $\mathrm{N}=$ 386）。アンケートの結果，学生はQuizletを使うことを楽しみ，メリットを感じ，真剣に取り組んでいることがわかり，Quizletの活用は良いアプローチであったと考えられ た。

In early 2020，the COVID－19 pandemic forced teachers to implement emergency remote teaching in lieu of physical classes．Revised syllabi and assessment criteria had to be quickly decided upon．Complicating the rush towards alternate plans and approaches was the question of whether students would have and be able to use computers in their homes for online classes．Computer ownership and literacy was suddenly a major stumbling block．Decisions regarding content and delivery were further complicated by issues such as textbook availability．Amid the confusion over what resources would be accessible，it was assumed that most， if not all，students would possess a smartphone or touchscreen device，and thus that tasks which could be facilitated on mobile devices were preferable．

Through discussions of the many decisions that needed to be made as the semester began，the authors each decided that their revised syllabi would include digital flashcard study using the smartphone app Quizlet（https：／／quizlet．com／ mission）．Each had used Quizlet before，both in personal learning（for example， Japanese vocabulary，kanji，etc．）and in administering vocabulary teaching programs．Both were confident that Quizlet could be used to deliver distance learning content and provide a reliable form of assessment．

Quizlet is a well－established and well－regarded teaching and learning technology．Dizon（2016）and Montaner－Villalba（2019）both found that significant vocabulary gains for Spanish learners could be attained using Quizlet． In a Japanese－English study using Quizlet as well as another digital flashcard platform，Dizon and Tang（2017）found no significant difference in score outcomes between digital flashcard study vs paper flashcard study．They did find，however，that students tended to prefer digital flashcards．Similarly，Davie and Hilber（2015）found no significant gain in vocabulary test scores over more traditional paper methods amongst university students of business English，but their participants reported positive perceptions of Quizlet．Chien（2015），in a
study of three digital flashcard platforms including Quizlet, reported positive attitudes by university students studying English regarding digital flashcard activities. Lander's (2016) finding that Quizlet met with "resounding approval" (p. 258) from the majority of students, suggested to the authors that we could have confidence in it as we headed into an unfamiliar teaching situation.

During the semester of emergency remote teaching, the authors each used Quizlet in various ways, using different word lists of different lengths. One used sets between 15 and 30 words drawn from course textbook chapters and materials being used for each lesson. The other took a more general approach to vocabulary development and created much longer word sets that drew upon the New General Services List, a high-frequency word list of 2,800 words (Browne et al., 2013). Similarly, however, each teacher set weekly tasks and milestones that were to be met as the semester progressed.

The mobile app features five activities through which assigned words can be learned and reinforced. A screenshot of each activity is shown in Figure 1. The first, called Learn, requires that students either manually select the correct meaning of a word that is displayed from four choices or enter it by typing. If a mistake is made, the correct answer is shown, and that word reappears relatively sooner as the learner progresses through their list of words. Once a word has been correctly selected or entered twice, it is deemed to have been "learned". The Flashcards activity allows students to turn a digital flashcard over between the target word and its meaning and swipe it away either to the right if it is considered "known" or to the left if it is not. The words sent to the left come up again once the deck has been cleared. Thus, learners can identify and focus on the words they have not yet mastered. The Write activity shows the learner the translation of a target word or term, in response to which they have to type the target word or meaning. Some allowance is given for typing or spelling errors. This activity is complete when all the words have been correctly typed. The Match activity displays twelve tiles, six of them showing target words and six showing their meanings. In a timed session, the learner has to tap a tile followed by its partner. If they match, the cards disappear and the game ends when all tiles have been removed. Finally, the Test activity facilitates a test according to the
learners' choice of settings, involving either typing, multiple choice questions, or true/false questions. Learners can also select how many items to include in their test.

When students complete an activity, their having done so is indicated on the teacher view in Quizlet's website by a green checkmark for that activity. Thus, each student's progress and completion is easy to track and record. During the semester, each of the authors required students to complete four of the five activities for each week's word set. This, it was assumed, would be a reliable indicator that students were engaging with the materials, developing their understanding, and demonstrating comprehension of the vocabulary items.

As the semester progressed, most students seemed to be meeting the weekly deadlines, and score updates were regularly provided to them. It appeared that the students were successfully engaging with the assigned vocabulary lists. However, as the semester progressed, the authors each began to question whether actual learning was taking place. There was no way of perceiving whether the completion of activities represented actual acquisition, either long-term or shortterm. In a regular classroom setting, weekly paper-based quizzes would be used to determine this, but the absence of that option caused considerable uncertainty about whether the Quizlet vocabulary study was bringing about any benefit for the students. Also, the opportunity to "game the system" was a concern, given that there was nothing to stop students simply swiping every card to the right in the Flashcards activity without applying effort towards actual learning, and


Figure 1. The Quizlet mobile app activities - Learn, Flashcards, Write, Match, and Test.
thereby earning one of their four required green checkmarks for doing so. Similarly, students could also assign themselves a one-question "test", answer it correctly, and gain a green checkmark for completing the Test activity. Concerns arose over whether too much reliance had been placed on Quizlet. Furthermore, towards the end of the semester, decisions regarding the year's second semester revised syllabi had to be made, including whether it would be wise to administer a similar program of vocabulary study again.

At this point, in order to answer the many questions that had arisen, an anonymous survey was administered. The survey was designed to help find answers to the following research questions:

1. Is simply monitoring the completion of tasks on Quizlet a valid and appropriate tool of online assessment?
2. Are students rushing through some of the activities without applying effort to learning the words? If so, to what extent?
3. Are students utilizing Quizlet as intended for actual learning, or merely working through activities without any perceived benefit?

## Method

The survey questions were translated into Japanese by a native speaker of Japanese. The surveys were administered in the final weeks of the semester via a Google Form with a link provided to students. Participants $(N=386)$ were enrolled in various first-year and second-year English courses at several Japanese universities. These students were studying different majors, such as engineering, English, law, and commerce. Their courses had different foci, such as reading and writing, listening and speaking, and TOEIC. Approximately $80 \%$ were first-year students, with the remainder being second-year students. The survey included an introduction stating that all answers were anonymous, that completion of the survey was voluntary, and that participation indicated informed consent for their answers to contribute to the teachers' research project. Respondents were emphatically encouraged to give honest answers. The following questions were asked with multiple-choice answer options. (Each question also included an opportunity for students to give comments in either Japanese or English.)

1. Overall, how much did you enjoy using Quizlet?
2. Approximately how much time did you spend each week on the Quizlet tasks?
3. What percentage of the words were you already familiar with?
4. Was reviewing words beneficial to you?
5. Did you feel your vocabulary knowledge grew as a result of Quizlet activities?
6. Which activity was best for you for learning words?
7. Rush A) Did you often rush through some words and activities?
8. Rush B) If so, why did you rush through? (This question required a written response).

## Results

We were interested in general attitudes across all students rather than attitudes that might be specific to their majors, so we analyzed all results as one dataset. Overall, the results confirmed that utilizing Quizlet in this way had been worthwhile and appropriate, with many positive and affirmative findings.

A majority of students reported positive engagement with the Quizlet app. More than two-thirds (71.3\%) reported that they "enjoyed" or "enjoyed a lot", while just over one quarter ( $27.4 \%$ ) reported not liking much or "disliking" it (Figure 2). These results suggest that a large majority of students enjoyed using Quizlet for vocabulary learning and review.

In answer to the second survey question, approximately $20 \%$ of students (Figure 2) reported spending less than 20 minutes per week carrying out their assigned Quizlet homework, whereas a similar number spent 60 minutes or more (Figure 3). The remaining 60\% fell somewhere in between, spending between 20-60 minutes per week, suggesting that this was an appropriate selfstudy workload.

In regards to how much of the vocabulary the students felt "familiar" with, roughly half of the students reported prior familiarity with $50 \%$ or more of the words they were assigned to study. Furthermore, around a quarter reported familiarity with $75 \%$ or more of the words (Figure 4). This suggests that, for


Figure 2. Responses to Question 1: Overall, how much did you enjoy using Quizlet?


Figure 3. Responses to Question 2: Approximately how much time did you spend each week on the Quizlet tasks?
many students, time spent on Quizlet involved some learning of new words but also involved a significant amount of time reviewing and reinforcing knowledge of previously learned words. Any concern that this proportion of words being already familiar might render the task of working through them again pointless was abated by the responses to the following question.

Almost $90 \%$ of students reported that reviewing familiar words was "beneficial" or "very beneficial". This suggests that participants found Quizlet


Figure 4. Responses to Question 3: What percentage of the words were you already familiar with? beneficial for both acquiring new words and reviewing previously acquired words. It also indicates that many considered the Quizlet program generally to be of learning value and worthwhile. As with the "familiarity" aspect, "beneficial" also requires some clarification, though, and was at least partially answered by the following question, on whether the students felt that their vocabulary knowledge grew as a result of completing the Quizlet activities.

In answer to question 5 , on whether students felt that their vocabulary knowledge had grown, a clear majority of students ( $88 \%$ ) reported "yes" or "very much", compared to $12 \%$ that said "no" or "not really" (Figure 6). This further clarifies the previous question regarding whether the benefit might be derived from a perceived increase in vocabulary knowledge.

When asked about which specific Quizlet activity they felt was best for learning words, the Learn section yielded the highest rating with around $40 \%$ of student responses, with the Write section at around a third (Figure 7). It is interesting to note that Match, a more game-like and presumably fun activity, was preferred by only $8.1 \%$ or respondents as beneficial to vocabulary learning. Also, the Flashcards activity, which allows a user to self-test but does not test their accuracy, was reported by only $9.7 \%$ as best for learning words.

Finally, a two-part question was asked regarding rushing, by which we meant


## Very beneficial Beneficial Not really Not beneficial no response

Figure 5. Responses to Question 4: Was reviewing words beneficial to you?


Figure 6. Responses to Question 5: Did you feel your vocabulary knowledge grew as a result of Quizlet activities?
quickly performing whatever actions could be taken in order to attain the green checkmark in the least possible time or with the least possible effort. Almost two-thirds of students reported "rarely" or "never" rushing an activity (Figure 8). Around one in five sometimes rushed through, $9.3 \%$ reported regularly or often rushing through to complete an activity, and $7.5 \%$ did not respond. This indicates that the majority of students ( $83.2 \%$ ) were motivated to complete tasks


Figure 7. Responses to Question 6: Which activity was best for you for learning words? properly most or all of the time. It also indicates a generally positive attitude to the vocabulary-study program as a whole.

When asked why they rushed through tasks, $69.5 \%$ of students did not respond, suggesting that most of these students were from the $63.5 \%$ who "rarely" or "never" rushed an activity. Of the 117 who responded to this question, 84 stated that they rushed because "I already knew the words", and 33 admitted that "I just simply wanted to finish" the task. This would suggest that fewer than $1 \%$


Figure 8. Responses to Question 7. Did you often rush through some words and activities?
of students were "gaming" the system, although it is possible that the true figure might be higher.

Based on these responses, it appeared that many students were motivated to increase their vocabulary knowledge, that they valued the activities in Quizlet, and that they meaningfully allotted time to completing the assigned tasks.

## Discussion

The survey results suggest that relying upon Quizlet as a component of course content and as a means of assessment was justified. A majority of students reported enjoying engaging with the app and also reported feeling that it was beneficial for not only learning new vocabulary but also for reviewing vocabulary that they had previously acquired. The students' preference for the Learn and Write activities implies that they differentiated between a sense of fun and actual learning value, and favored the latter. It also appears that most students completed tasks thoroughly, rather than taking advantage of shortcuts. This all suggests that students were taking the learning opportunity seriously.

Most students allocated 20-60 minutes per week to Quizlet study. A small portion spent less than 20 minutes per week, but it is unclear whether this was due to disinterest, large study workloads, or prior familiarity with the word sets. Just over a fifth of all students reported spending more than one hour each week to complete the Quizlet tasks. Given how easily the activities could be completed without diligent effort, this suggests that they were taking the time to learn new words and successfully complete the tasks.

As the authors had varying class types, a follow-up study could further differentiate student attitudes according to English-class type and course major. Further, the notion of self-reported familiarity with some vocabulary could be followed up in greater depth, focusing upon the extent to which students are familiar with words that they might have considered themselves to be reviewing rather than learning. When students reported familiarity with words, it was unclear whether they were reporting deep vocabulary knowledge of a word or simple recognition from previous encounters. A pre- and post-test might reveal more about student vocabulary knowledge, but this was not an option at the
onset of this study.
A subsequent study could also follow up on why students might favor certain activities over others. Indeed, student preferences towards more demanding activities, such as Learn and Write over the more game-like Match, was one of the more surprising results and warrants further study.

Overall, utilizing Quizlet for content and assessment appears to have been a good decision. Quizlet can be recommended to teachers who wish to include a vocabulary-learning component in online courses.

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