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研究課題名(和文) Immediate Feedback And The Use Of Polling Systems For EFL Instruction

研究課題名(英文) Immediate Feedback And The Use Of Polling Systems For EFL Instruction

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研究成果の概要(和文)：この研究はEFL(第二外国語としての英語)教育での即時フィードバックの可能性と効果を調査したものである。我々はその広範多機能性からクラウドシステムを採用した。これらは文法語彙指導、課題管理、学生同士/自身による相互評価システム構築に用いられデータ収集と即時フィードバック付与を実現した。これらは実に有用で革新的な活用法である。被験者にはクラウド学習への意識調査も併せて行われ、その非常に好意的な反応からこれらがEFL教育において今後より強固に導入統合されることを示唆している。研究成果は国際論文および研究発表で披露され更なる出版や発表も数多く進行中でありこの研究がより多大な貢献をもたらす事が予想される。

研究成果の概要(英文)：This research investigated the plausibility of providing immediate feedback to students and its effects in English as a foreign language (EFL) classrooms. We used a cloud-based system because of its numerous applications and versatility for compiling and delivering immediate and slightly delayed feedback for the instruction of grammar and vocabulary, as well as to check homework assignments and to implement peer and self-evaluation in oral communications classes. It has been extremely effective and innovative. Student perceptions about the use of GSE were surveyed and showed largely positive responses and receptiveness for further integration of this technology in this EFL setting. Results were published and presented internationally, and future publications and presentations are in process at the time of this report, and it is expected that this research will generate further, exponential, dividends.

研究分野：Foreign Language Instruction

キーワード：Immediate feedback electronic polling peer evaluation self-evaluation peer collaboration learner-centeredness ICT enhanced interaction

1 . 研究開始当初の背景

It is often problematic for English as a foreign language (EFL) learners to receive ample feedback about their performance. Moreover, most EFL classes have a large number of students. Therefore, it is very challenging to check whether students have prepared adequately for classes, by doing their homework, such as comprehension questions or a plan for group discussion work. Especially when this is written in their notebook, it poses a significant logistical and time challenge. This research project has significantly mediated these conditions.

We know from first and second language acquisition studies that it is vital for learners to receive comprehensible input and feedback about their language production efforts. With these points in mind, we have been researching how to better collect and respond (give feedback) to students' work.

Prior to this grant, we were using automated response units, also known as clickers. They amalgamated student responses and made this data available for relatively quick viewing and analysis. This also made it possible to immediately give students answers to test questions following an exam. We hypothesize that such feedback is most likely to result in learning and retention because it is delivered immediately after students have devoted significant time as well as cognitive and emotional resources toward answering such questions. Essentially, we believe there is a window of opportunity shortly after students have completed language learning tasks when feedback from the teacher has greatest salience.

Clickers proved effective to a certain extent for providing such feedback, though they are decidedly less effective than recent cloud-based applications. The devices are about the same size as a remote control and they have a keypad where students input their answers and transmit them to the teacher's computer via Bluetooth technology. Clickers were effective in classroom situations and resulted in several innovations in how to teach EFL learners. Nevertheless, there were some notable constraints: (1) the devices use proprietary hardware and software that can only be used in the classroom, which limits student access to them to 90 minutes

each week. (2) the size of the keypad and the screen are so small that student responses are more or less limited to responding to multiple choice questions, true/false questions, or text answers of one or two words. (3) the communication that is possible with these devices is one-way from student to teacher only. The makers of the devices we were using introduced a new cloud-based software at the beginning of this grant period that we enthusiastically awaited, however it was thoroughly ineffective when we trialed it using Windows and Mac computers. Moreover, our existing hardware began to break down to the point where we thought it best to look for an alternative system. Ultimately, we purchased 30 Chromebook computers and we have been using Google Suite for Education (GSE) cloud-based applications.

2 . 研究の目的

The aim of this research was to establish an environment where every EFL student is actively engaged in their learning and it is possible to record and give feedback to students about their performance, in almost every occurrence immediately or as soon as possible. With this in mind, we asked several research questions:

- (1) What is the effect of polling technology enabled immediate feedback on grammar and vocabulary instruction? Does it lead to better short-term retention? Does it lead to better long-term retention?
- (2) Does the use of polling technology to collect and administer grammar and vocabulary homework assignments yield better results than quasi-experimental and control groups?
- (3) Can polling technology improve student performance in oral communications tasks when it is used to elicit self-assessments and peer-assessments following such tasks?
- (4) How do students perceive the long term regular use of polling technology in each of the above contexts? Are they willing/able to use their own devices, such as smart phones and tablets, for such instruction?

3 . 研究の方法

Data from this study is being triangulated using results from formative assessment of students, student reports, and qualitative and quantitative assessments made by a

group of professors and compared with students' self-assessments and peer assessments. Research has involved approximately 1200 students roughly divided into control groups, quasi-experimental groups, and experimental groups.

4 . 研究成果

The most notable outcomes of this research are related to the potential that cloud-based instruction has enabled for the provision of immediate feedback.

Based on our research questions, we are publishing and presenting about the following results.

(1) We expected results that would prove or disprove the effectiveness of polling technology for grammar and vocabulary instruction.

Use of the GSE is definitely superior for the instruction of grammar and vocabulary. It is decidedly possible to record all student responses to such questions and to provide immediate feedback about whether the student is right or wrong, and why. Moreover, it is possible to allow students to submit multiple times, thereby achieving a situation that better approximates real-life language learning situations. The technology used in this study has allowed us to overcome the technical limitations of normal EFL instructional situations where much of the feedback about students' performance of grammar and vocabulary tasks was either "right" or "wrong." Instead, most assignments are now "right" or "try again." Furthermore, it is possible to provide vastly superior feedback about why certain answers are wrong and others are right.

(2) We expected that students would be more attentive to homework assignments and this would enable better test results.

The procedures and teaching resources we developed for using cloud storage and the Google Suite for Education's applications have made it possible to assign student homework one week and to have a grade and feedback available before the next class. This eliminates at least a week from the usual process of collecting student work and providing feedback. Moreover, it is possible to set firm deadlines that are impossible to ignore. Students have

become significantly more attentive to homework assignments, and the scope and volume of such assignments has greatly increased.

For example, it is relatively simple to assign vocabulary or grammar questions from a text and to create a Google Form where students can input their answers from a smartphone, tablet or computer anytime anywhere within the term of the assignment. Students immediately get a grade and feedback and an explanation about possible answers to each question. At the deadline, a teacher can turn off the Form, so it is no longer possible to submit answers. The teacher can then check each student's score and mean scores for each question, thereby holding students accountable for each assignment and also deriving valuable information about where further instruction is or is not necessary.

Regarding whether this results in better test scores is an ongoing part of this research that will require further investigation.

(3) We expected that self-assessments and peer-assessments would encourage more active, reflective, and extended participation in oral communications tasks.

The procedures and teaching resources we developed for using cloud storage and the Google Suite for Education has innovated and greatly expanded what sort of feedback it is possible to provide students for oral communications tasks. In traditional EFL contexts, teachers assign topics for discussion and students discuss these topics in class. It is possible to collect notes that the students prepared for the activity at the end of the activity, but giving feedback about this is delayed and it is delivered after the event. Using the cloud, students are encouraged to submit their notes before the class and it is possible to transmit feedback to them about their language output that allows them to better accomplish the task. Moreover, using a Google form it is possible to ask them to evaluate their performance on a numeric and qualitative basis. By creating secret names for each student, it is possible to compile and publish these evaluations shortly after class, so that students can see this evaluation. Furthermore, this research has

implemented a follow up system where students record their discussion using their smartphones and upload it to a cloud folder shortly after class, so we are able to quickly provide students with a final grade and feedback according to rubrics designed for this study. The volume and detail of this feedback fills a void where it has been very difficult to assess oral activities in the past, given that they occur simultaneously between large numbers of students, such that the teacher can assess and provide feedback to only a few students each time. Now they get extensive feedback every time about their performance of oral activities such as pair and group discussion.

Use of cloud-based applications for oral activities such as presentations has also significantly augmented the potential for transmitting vital feedback for language learning. It is very difficult and often counter-productive to interrupt a student during a presentation for the purposes of giving them feedback. Moreover, compiling self and peer evaluations has required a significant amount of time in the past. Results from this research project have shown that it is possible and indeed relatively simple to provide greatly augmented feedback for oral presentations. Google Forms are used to collect scoring according to a five-point rubric and comments for each presenter from each class member that are immediately compiled in a spreadsheet. We take screenshots of this feedback and mail it to each presenter immediately after class. Furthermore, we record each presenter and upload the presentation to a cloud folder. The videos show the presenter on the right side of the screen, the PowerPoint presentation in the middle of the screen, and the teacher on the left. The teacher has a two-sided paddle with “P” on one side and “E” on the other. “P” is used to provide feedback to the presenter that something within the five-point rubric (with 20 sub-items) is amiss. “E” indicates that the presenter has made a spoken (English) error. Quickly flashing “P” then flipping the paddle to “E” indicates there is an English mistake within the PowerPoint, such as spelling or grammar.

Students have to access the cloud folder and watch their presentation again after class and prepare an assignment where they reflect about their performance and

react to the teacher’s feedback by identifying their mistakes and providing a revised version, such as the use of past tense instead of present tense, or use of the plural form for generalizations.

We anticipate that these procedures will be the basis of a significant volume of research as well as improvements in student performance. Moreover, the procedures and materials we have developed for this project are being made available to many colleagues, and our procedures can be replicated using free and widely available technology. That should make our findings generalizable to most oral communication instructional settings not only for English, but every modern foreign language instruction context. Although many of the findings for this research are still in press, we will make every effort to further publish and present them with acknowledgment of the JSPS funding that made them possible.

(4) We expected that students would endorse long term regular use of polling technology, however there might be reticence about using their own devices.

Students have accepted peer and self-evaluation ‘polling’ and actively participate in its use. In most cases they have indicated that they understand the reasons for its use, and indeed they appreciate it.

Students are accessing many of the resources we created outside of class, and it appears there is not much reticence to using their own devices.

5 . 主な発表論文等

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〔その他〕

Results from this research transcend website based transmission of information. It is a major accomplishment of this

research that effective “anytime anywhere” communication has been established with students and virtually everything pertaining to coursework is cloud-based and easy to access. Student assignments are stored in the cloud and can be accessed and commented on immediately after the student has finished. Students are part of a Google Community where they can view instructions about their assignments, vote in polls, create polls, and access links to homework that records their responses and provides them immediate feedback in cases where there is a clear answer. It is a multi-channel communication environment as opposed to the relatively static one-way communication that a website provides.

Our traditional website is <https://sites.google.com/site/ryudaigeorge/>

6 . 研究組織

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