Using Apps and Technology to Enhance the Classroom

授業の充実及び向上のためのアプリとテクノロジーの有効活用

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Abstract

As technology has become more prevalent in everyday life, opportunities to use it in different educational settings have also grown. Many university students spend considerable amounts of time online and have their own smartphones, so learning new technology and applications is not too difficult. Using technology in the classroom can allow teachers to deliver lesson content in exciting new ways, and students can discover new strategies to enhance their academic studies. What is more, students seem to be more intrinsically motivated and engaged in their work when doing projects that utilize technology. This report describes some of the practices involved in using technology and internet-based applications in classes and educational settings at Tokai University's Sapporo campus. Three faculty members share their experiences and methods on using technology in a variety of ways, from lesson content delivery in the classroom to tips on better productivity, for both teacher and student.

要 旨

日常生活においてテクノロジーの使用がますます普及するにつれ，様々な教育環境下でそれを使用する機会も増えている。多くの大学生がスマートフォンを所有し，インターネットを長時間利用しているという現状を考えれば，新しいテクノロジーやアプリケーションを利用した学習方法は学生にとってそれほど難しくはないと考えられる。授業でテクノロジーを使用することによって，教員は学生に興味を持たせるような新しい方法で授業内容を提供できるようになり，学生は自らの学習を進めていく際に活用できる新しい学習方法を見つけることが可能となる。また，テクノロジーを利用したプロジェクトに取り組ませることで，学生の内発的動機をより高めることができると考えられる。本報告では，東海大学札幌キャンパスの授業やその他の教育の場面における，テクノロジーやオンラインのアプリケーションを使用した実践を紹介する。特に 3 名の教員が実践した授業や，授業を向上させるためのヒントなど，テクノロジーを活用した経験と方法を，教員と学生のために共有する。

Keywords: Technology, Productivity, Learner Motivation, Student Engagement
キ ー ワ ー ド：テクノロジー, 生産性, 学習者の動機づけ, 学生エンゲージメント

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1.   Introduction

As technology has become a bigger part of everyday life, chances to use it in educational settings have grown considerably. Many university students own a computer or smartphone and spend significant amounts of time online. Today's students have grown up with technology and they literally carry the world wide web in their pockets. For this reason, they seem to embrace technology quickly and are not afraid to try new apps, especially when compared to attitudes among older generations. Brozek & Duckworth (2011) found that the current generation of high school and university aged students hold general positive attitudes about using technology in the classroom. Wolff (2016) notes that while smartphones consume a large part of university students' time, they are primarily used as tools for social networking and gaming. In this way, they can sometimes become a distraction. Teachers, however, can introduce educational apps and show students how more productive use of their smartphones can help improve their academic studies (Cochrane, 2015).

For a busy teacher, keeping up to date on new applications and web-based technology can seem daunting, but thankfully, many of the new e-Learning tools are user friendly and easy to learn. Today's teachers can take advantage of an ever-growing range of educational apps and technology to deliver lesson content in exciting new ways, improve productivity and manage information more efficiently. Students can learn how to harness the power of the internet and use it to strengthen their approach to learning academic material. The authors of this report found that using technology in educational settings can lead to higher levels of student engagement and intrinsic motivation. Technology has a way of grabbing student attention and getting everyone in the classroom involved. Students also seem to be more involved and self-motivated when progress and assignments are tracked publicly online (Field notes, 5/22/18).

2.   Description of Methods

This paper describes some of the ways that technology and web-based applications are being used at Tokai University's Sapporo campus. Three faculty members from the International Communications Department introduce specific e-Learning tools and discuss how they have enhanced the classroom environment and benefitted both students and teachers alike. The following apps and technology are reviewed in this report:

Kahoot!

Quizlet

Facebook Groups

M-Reader

Weebly

Survey Monkey

Google Forms

Tokai University's Learning Management System

Personal observations from instructor field reports reflect on some of the positive findings discovered, while challenges and ideas for future improvement are also mentioned.

2.1   *Kahoot!*

The free web application *Kahoot!* (2018) is a game-based response platform. Launching in 2013, it has gained wide global acceptance with more than 1 billion users worldwide (Fig. 1). In educational classroom settings, using *Kahoot!* has many benefits. Plump (2017) found that *Kahoot!* can be used to add vitality, student engagement, and meta-cognitive supports to higher education classrooms with limited instructor or student training required.
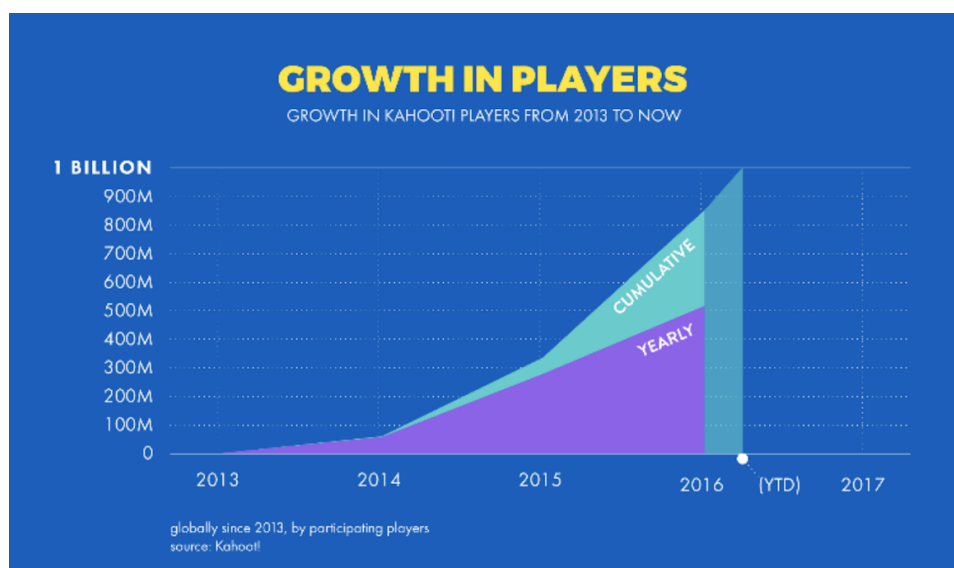

Fig. 1: Growth in Number of *Kahoot!* Players Worldwide, 2013-2017 (Harrell, 2017)

As a classroom e-Learning tool, *Kahoot!* shows a lot of promise. With a user-friendly interface, *Kahoot!* is simple to learn, giving teachers the ability to create multiple choice-based quizzes, surveys, and homework assignments in any subject area. Teachers can make their own *Kahoot* or save time by using readymade *Kahoots* that were created by other users. A vast number of *Kahoots* can be found on the website, and teachers can edit any readymade content to their liking. Once a *Kahoot!* has been created or selected on the teacher's host computer, the teacher shares an access code with students. Using a mobile device such as an iPad or a smartphone, students then log on to *Kahoot!* as individuals (Fig. 2). From there, the teacher can decide if the *Kahoot!* will be played in competitive head-to-head mode (individual students) or in team mode (groups of students). During this time, the *Kahoot!* website tracks student achievement by looking at responses (either individual or team) amid the *Kahoot* gameplay, as well as overall achievement results while students are logged in. This live feedback can inform teachers about a student's understanding of the lesson material and whether or not desired learning outcomes were reached.

Audience engagement with *Kahoot!* is quite high. Students seem to enjoy playing *Kahoot!* because it is fast-paced, visually stimulating, and fun to play. Bright colors, background music, and sound effects enhance the gameplay, adding to the aesthetic appeal. Users can also upload video and sound clips to a *Kahoot*, which allows for interesting variety in quiz design. Other gameplay factors draw audiences in. For example, after each *Kahoot* question has been asked, the correct answer is publicly displayed on the teacher's host screen. Team scores and leaderboard rank are also displayed after each question, showing score streaks, motivating students to work together, and further stoking the sense of friendly competition and rivalry.

Fig. 2: Example of *a Kahoot!* Quiz (*Left:* Host screen with multiple choice answers. *Right:* Student view on a mobile phone screen.)

Perhaps the best feature of *Kahoot!* is its simplicity, allowing teachers and students of all technology skill levels to use this application in the classroom. Students can use *Kahoot!* to make their own quizzes to demonstrate their understanding of subject matter, or to survey their peers. At Tokai University Sapporo, *Kahoot!* has been used in a variety of ways, including quizzes given at Open Campus events, during high school visits, and on parent visitation days. Tokai students have made *Kahoots* for group gameplay at school parties, English café events, and in seminar classes. The fast paced, interactive elements of *Kahoot!* gameplay make it a fun icebreaker activity, suitable for any occasion. But *Kahoot!* is more than just an entertaining game. It can also be used to reinforce academic content in meaningful ways. A new feature of the website allows teachers to assign *Kahoots* as homework with the "challenge" option. This enables teachers to create lesson content and send a link directly to student's smartphones. In TOEFL preparation class at Tokai University Sapporo, academic vocabulary challenges were given as homework assignments in Spring semester 2018. Students reported that they enjoyed studying vocabulary words this way, and the instructor noticed that the homework completion rate was higher than with the traditional worksheet methods previously used (Field notes, 5/25/18).

Overall, *Kahoot!* has proven to be a versatile and useful e-Learning tool in the classroom. It is user friendly and open ended, giving teachers another way of delivering academic subject matter in an engaging manner. For these reasons, it is highly recommended by the authors of this report.

2.2   *Quizlet*

Quizlet (2018) is a user-friendly Web 2.0 application which enables teachers and students to make and study with digital flashcards. The app is particularly easy to use, even for those with relatively little computer experience (Foster, 2009). A variety of features of this application significantly augment flashcard use for the purpose of deliberate vocabulary study. Indeed, in a recent study conducted on 139 Japanese university students, *Quizlet* was found to be significantly more effective than paper flashcards at improving vocabulary gain scores at lower levels of English ability (Ashcroft, Cvitkovic & Praver, 2018). Through the *Quizlet* site users can access millions of sets of user-created flashcards. These cards can be copied and modified from existing sets or created anew. The site also allows users to make their own flashcards, together with the option of including a variety of media such as audio,

pictures and multiple languages. In addition, *Quizlet* users have the opportunity to hear card-content with the text-to-speech function.

In order to study using *Quizlet*, it is necessary to click on a set of flashcards from those available. Teachers can set up classes and invite students registered on *Quizlet* to join their class. Sets of flashcards can be grouped according to class by the teacher. Once working within a set of flashcards, students can choose from eight study modes. These are *Learn*, *Flashcards, Write, Spell, Test, Match, Gravity* and *Live*. The following section describes only three of these applications, namely *Flashcards*, *Learn*, and *Live*.

In *Flashcards* mode, cards are displayed one at a time and are used in a similar way to traditional paper flashcards. Clicking on the card reveals the other side of the card—displaying the term definition, for example. It is also possible to adjust the settings to show the definition before the term or include audio, which can provide students with a useful and surprisingly accurate model of pronunciation. Moreover, audio can be slowed down, which may help some students to notice the correct pronunciation of new items. The *Learn* study option prompts the user with the written / spoken / image form of one side of a card, one at a time, from the card set (Fig. 3). The student must then recall the item and type it. If an item is entered incorrectly, *Quizlet* will display the answer and the correct answer must be typed in by the user before he/she can move on. For registered users, the site maintains detailed records of all *Study* activities, allowing individuals to monitor their own progress. A simple algorithm tracks mistakes and recycles items which have been missed.
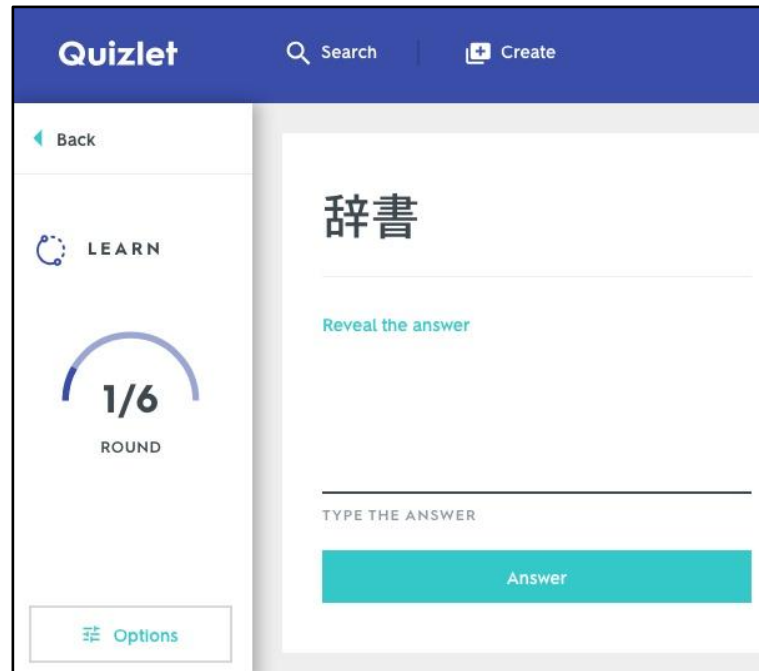
Fig. 3: *Quizlet* Learn Study Mode

The *Live* function on *Quizlet* was launched in 2016. It is an interactive, team-based classroom activity. To use *Live*, the teacher needs to be logged into *Quizlet* with the computer screen displayed for all students to see. The teacher then activates the *Live* function and the access-code is automatically displayed on the screen. Students enter this code into their mobile device in order to join the activity, upon which their names are displayed on the screen. *Live* then assigns students into random teams, whereby they sit together and the game starts. Teams have to work together to correctly answer questions and race other teams to the finish line (Fig. 4). The app is designed so that everyone on a team must contribute. By introducing a competitive element, the app encourages collaboration and can be a powerful motivator for students. Overall, *Quizlet* is an effective tool to encourage students to deliberately study new vocabulary.
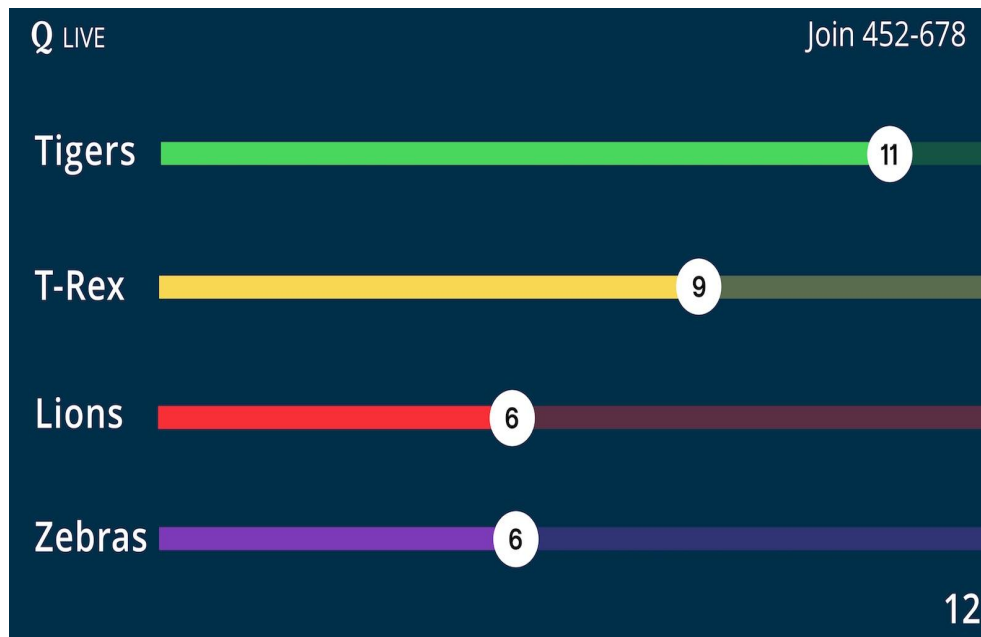
Fig. 4: *Quizlet Live* Race Screen

2.3   *Facebook Groups*

Creating a *Facebook* group within a class can be an effective classroom management strategy for teachers. Many university students are already familiar with *Facebook*, and the number of users in Japan is currently estimated at 29.5 million (Statista, 2018). One challenge, however, is that many of Japan's *Facebook* users are over 30 years of age. Younger people in Japan seem to gravitate to other social networking or messaging apps such as LINE, Twitter, and Instagram (Neely, 2018). If teachers can persuade their students to create a free *Facebook* account and become "friends" with the instructor, the teacher can then add students to form a class group. Once this has been accomplished, students need to be trained to regularly check their *Facebook* group page for updates and assignments. Privacy issues are not a problem, because personal information such as grades or assessments are not shared publicly. A downside of befriending students on *Facebook*, however, is that teacher posts on their regular *Facebook* wall will no longer be hidden from students. Some instructors take issue with this reality.
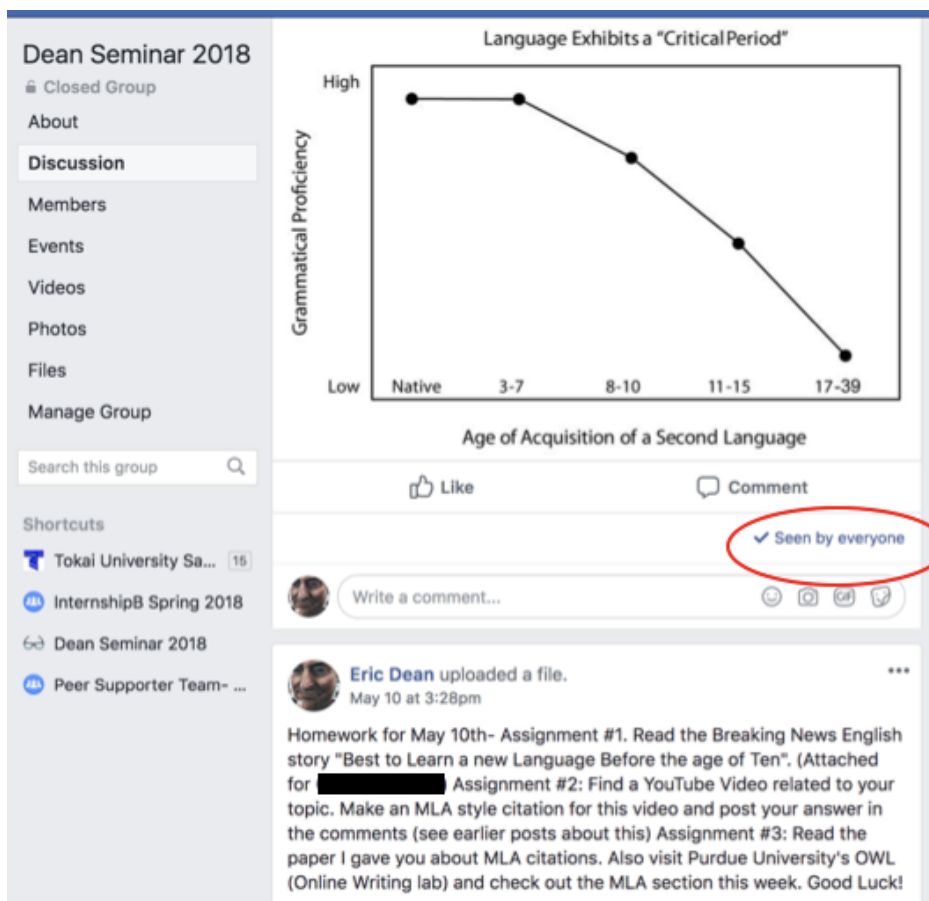
Fig. 5: Using a *Facebook* Group Page to Post Homework Assignments in a Class

At Tokai University Sapporo, the authors of this report have been successfully using *Facebook's* group feature with various classes and student clubs for several years. They found that there are many benefits to creating a group page with students. For example, teachers can post weekly lesson content and homework assignments for all students to see (Fig. 5). Students can access this content at any time on their smartphones or computers, giving them time to review and reflect on the content learned in the classroom. This adds a new dynamic to the class. Hall (2014) notes that self-reflection outside of the classroom is an important means of reinforcing learning.

Another benefit of using a *Facebook* group is that students who miss class due to illness or job-hunting related absences are able to access class information and keep up to date on project deadlines and assignments. With administrator privileges in a *Facebook* group, teachers are able to verify which students have viewed posts and which students have ignored them. Students who routinely skip class or make excuses about late assignments

don't have a strong argument if they choose to actively ignore the *Facebook* group updates. It makes them more accountable for their learning and helps eliminate excuses. An additional benefit is that lesson content can be given vitality because videos, related links, and photos can be easily posted and shared among group members instantly. What's more, communication between teachers and students is better and peer to peer comments are given a platform. New features such as live polling and live broadcasting have added depth to the levels of communication possible on *Facebook*.

It's clear that the positive benefits of using a *Facebook* group in a class outweigh any challenges. By using technologies that students are comfortable with like *Facebook*, faculty can create a dynamic learning environment through the merging of the creative, collaborative, social, and interactive capabilities of this powerful platform (Fontana, 2009). The authors of this report agree with this assessment and recommend making a *Facebook* group for any class that requires extra communication, lesson review, or scheduling.

2.4   *M-Reader*

One of the most practical and effective ways to facilitate incidental vocabulary acquisition is through extensive reading (ER). This involves large amounts of L2 input from reading many texts for the purpose of enjoyment and to develop reading fluency. ER programs typically offer students a large variety of graded reader books to choose from in terms of genre, topic and level. *M-Reader* (2018) is a free browser-based program which enables teachers to check whether their students have read and understood their graded readers. Upon finishing their book, students take a ten-item quiz, either on their mobile device or a personal computer (Fig. 6). The quiz has a 15-minute time limit for completion to prevent students from referring back to their graded reader for the answers. The ten questions are taken from a question bank of between 20 and 30 questions in order to ensure that students reading the same books are given different tests. Those who pass the test will see a picture of the book cover appear on their *M-Reader* homepage. Once a student has taken a test, they may not retake the same test. A student is only allowed to take a maximum of one test per day. The application has quizzes from more than 6,000 graded readers from many different publishers.
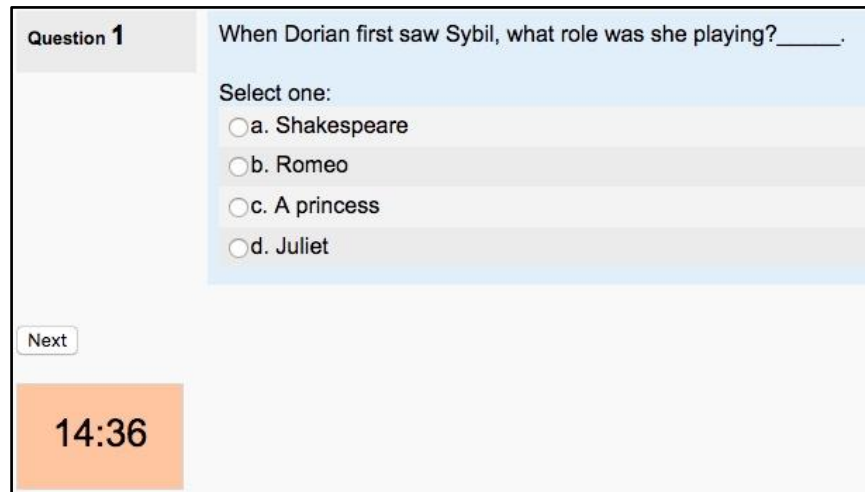
Fig. 6: Example Question on *M-Reader* for 'The Picture of Dorian Gray' Graded Reader Quiz

At Tokai University Sapporo, *M-Reader* was first introduced to students in Fall semester 2017. In both Reading Strategies 1 and third year seminar classes, students were asked to read a particular number of books during the semester, and then use *M-Reader* to verify they had read and understood the book content. All students successfully fulfilled the requirements of the assignment, and class survey feedback indicated that they enjoyed reading English books with this e-Learning tool (Field notes, 1/12/18). In April 2018, a library of more than 200 graded readers was made available to all students and staff at Tokai Sapporo. Those teachers at Sapporo Campus interested in using *M-Reader* and graded readers should contact *Bob Ashcroft* (bob.ashcroft@tsc.u-tokai.ac.jp) and *Catherine Cheetham* (catherine.cheetham@gmail.com) for those at other Tokai campuses.

2.5   *Weebly*

Weebly for Education (2018) is a Web 2.0 application which allows teachers and students to make their very own website (Fig. 7). It uses a drag and drop, graphical user interface (GUI), which means even those with no experience of HTML or code writing can create a professional looking website and/or blog. The user first chooses a template for their site (for example blog, travel log, educational), then a site theme - of which there are many to choose from. The user then builds the site by dragging and dropping components from the menu at the side of the screen. As with *Quizlet* and *Weebly*, the teacher should first set up their own account, and then invite students to join. For the unpaid version, teachers can create and supervise up to a maximum of 40 student accounts. Using the web-based teacher's dashboard, or the *Chrome* app, teachers can monitor students' progress as they

create their websites. Teachers can view recent student updates to their sites, and students can submit homework assignments to their teacher through the *Weebly Education* site.

Fig. 7: Weebly for Education Homepage

Weebly for Education is an ideal tool to use for project-based learning (PBL). In one of the author's classes, students worked in small groups to create a webpage for a website designed for international students coming to study in Sapporo, Japan. Students were required to work together, coordinating their efforts both in and out of class. They soon learned how to use the drag and drop format, and many reported enjoying the creative aspect of making their webpage. The content of the page was all in English which helped students to practice and further develop their language skills. The fact that the site was ultimately published and intended for practical use outside the classroom seemed to significantly motivate students to produce quality work in terms of language, relevance and presentation. Grading of students was performed according to the quality of the finished webpage in terms of language (vocabulary and grammar accuracy), content (relevance and quantity), and presentation.

By nature of the language-focused curriculum in the International Communications Department, students give many oral presentations. Evaluation by teachers independently has long been a time-consuming and challenging process. In recent years, online peer assessment has increasingly become a valuable tool. Advantages of using online platforms include instantaneous feedback, ability to poll a large pool of respondents, automated data analysis, and

higher student engagement in learning. There are now numerous web-based survey tools, but this paper will focus on the authors' use of Survey Monkey, Google Forms and Tokai University's Class Management System.

2.6   *Survey Monkey*

Survey Monkey (2018) is a versatile online survey tool that allows users to design, collect and analyze survey questions (Fig. 8).   The platform is user-friendly and provides many multilingual templates that can be readily customized and shared with respondents using a web address.
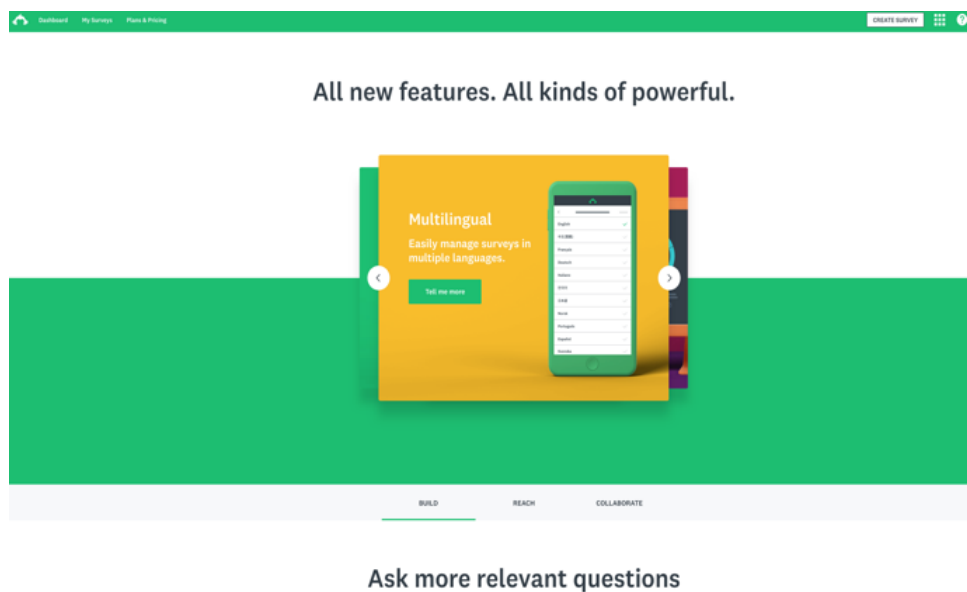
Fig. 8: *Survey Monkey*, Survey Creation Page

The authors successfully used *Survey Monkey* in the spring semester to rank freshmen teams competing in a Campus Photo Rally and a "Better Tokai" Campus Improvement Contest. In the past, instructors prepared colored *post-it* notes for 80-100 participants to vote for teams in the categories of Best Teamwork, Best Photo, and Best Presentation (Fig. 9). This required considerable time to prepare, distribute, collect and manually count the handwritten ballots. With the use of *Survey Monkey*, co-participants could vote electronically using their mobile phones and instructors could show the real-time voting progress on a large screen (Fig. 10-11). Although the automated display of results provided a more transparent and exciting selection of

winning teams, one drawback of this ranking method was the inability to provide detailed comments and feedback that handwritten *post-its* allowed.

Fig. 9: Using Handwritten *Post-Its* for Peer Evaluation Feedback

Fig. 10: Online Peer Evaluation

Fig. 11: Campus Rally Prize Winners with Live, Online Voting Results in Background

One unexpected result of the authors using *Survey Monkey* in classes has been the interest generated among students, with an increasing number of senior students using the platform for conducting online surveys of classmates to gather original data for their graduation thesis research. While *Survey Monkey* is free for creating surveys of up to ten questions and for polling up to 100 respondents, users must upgrade to a paid subscription for more in-depth surveys. In order to overcome the cost and size limitations of *Survey Monkey*, the authors have also created surveys using *Google Forms*.

2.7   *Google Forms*

Google Forms (Fig. 13) is among a multitude of free online applications designed by Google in the G-Suite for Education (Fig. 12).
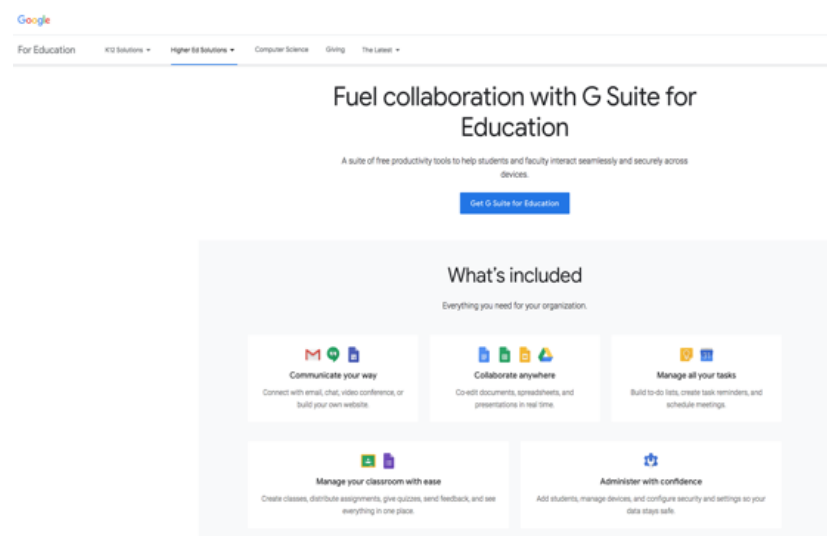
Fig. 12: Google for Education

Unlike *Survey Monkey*, *Google Forms* can be used to create surveys with an unlimited number of questions and respondents. *Google Forms* also allow the addition of images and videos that provide a more personalized and creative survey design. Finally, another advantage of *Google Forms* was the ability for the authors to collaborate in designing, editing and analyzing the results.
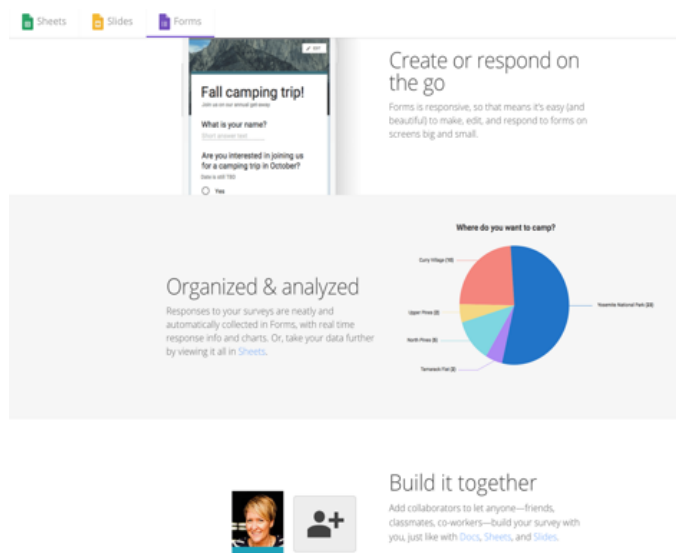

Fig. 13: *Google Forms*

In addition to using *Google Forms* for peer assessment of presentations, one author used the platform to gauge the efficacy of the Peer Supporter Program. Design templates allow for the inclusion of various question formats including multiple choice, checkboxes, linear scale and short answer. Similarly, responses are automatically displayed in numerous formats by question, by individual or an overall summary provided in graphs (Fig. 14).
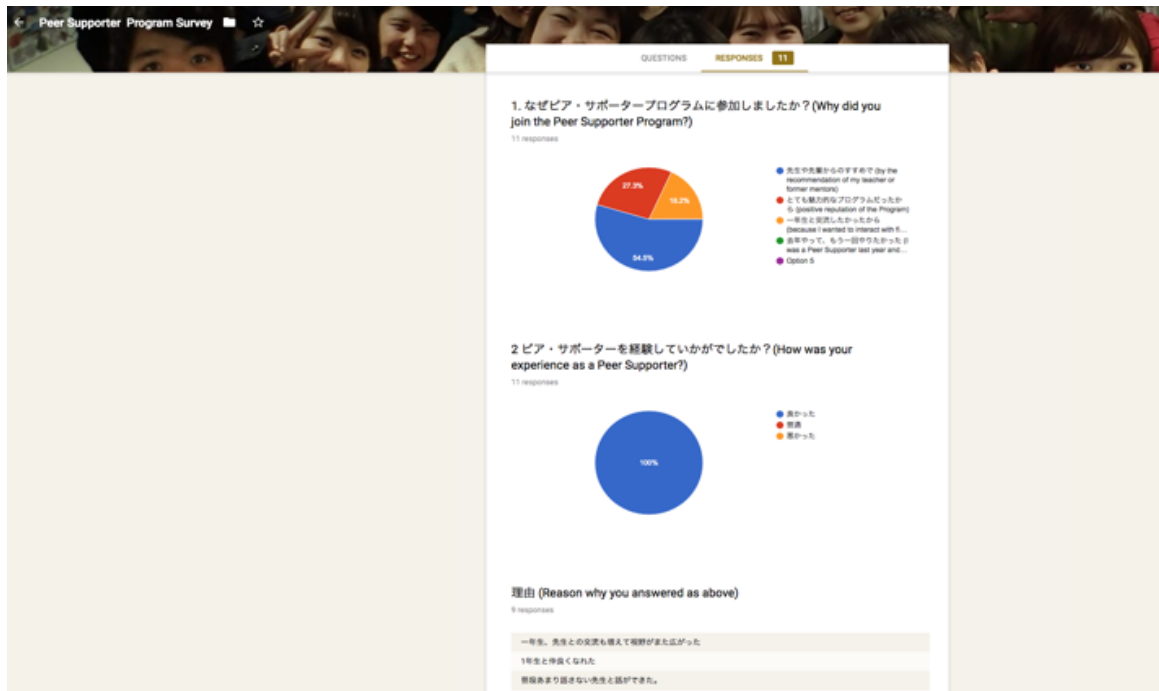
Fig. 14: *Google Forms*- Response Analysis

Although it was felt that that online surveys would improve the response rate, in some cases it was less effective than traditional paper surveys (Field notes, 7/24/18). The authors would like to explore ways to improve the response rate including giving class time to complete the survey rather than sending it to students after class, collecting e-mail addresses of respondents, and making the submission of feedback mandatory for the completion of a program. One possible area of concern in using these incentives is whether students will give honest responses if the questionnaire is non-anonymous.

2.8 *Tokai University's Learning Management System*

Another versatile and valuable source for academic support is Tokai University's *Learning Management System* (2018). The free, online system is set up to provide access to both teachers and students (Fig. 15) and resources include a course management and communication system (Fig. 16).
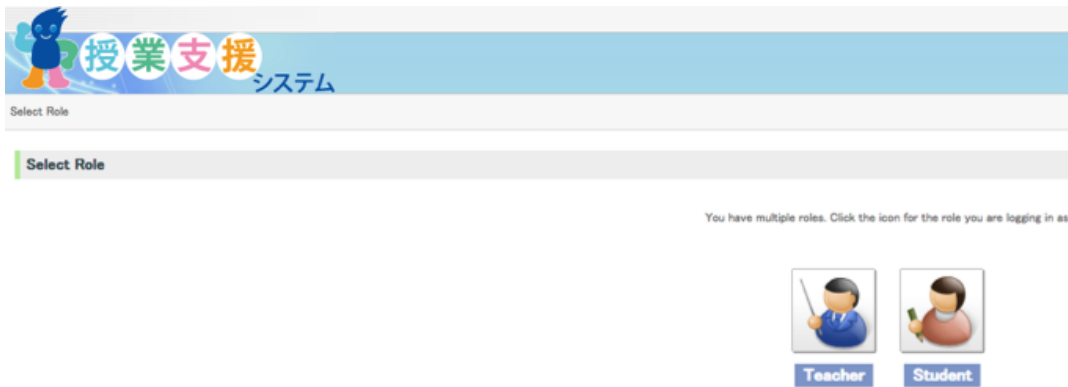
Fig. 15: Tokai University's *Learning Management System* for Teachers and Students
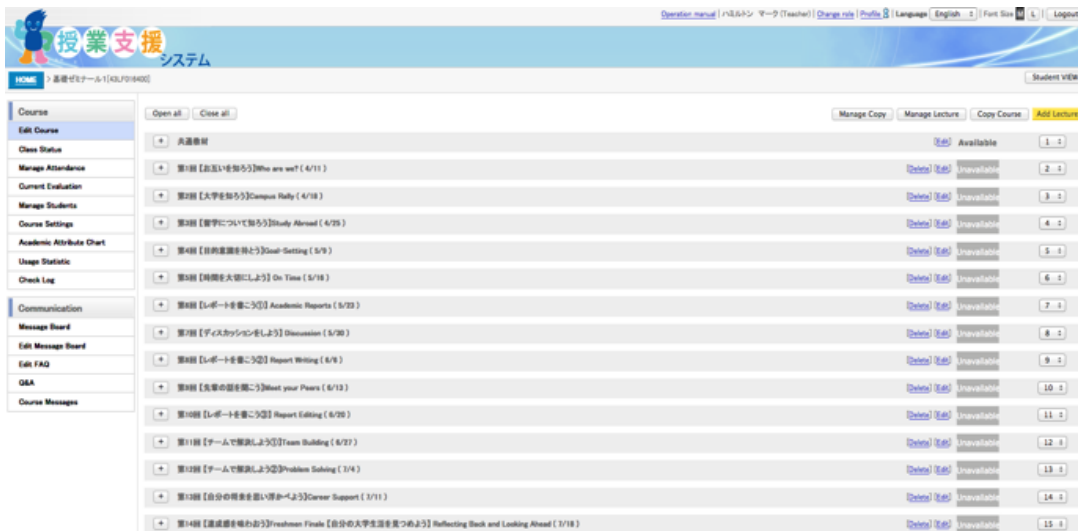

Fig. 16: Course Management and Communication Functions

Assigned with four new classes for all freshmen students across all departments, one author explored more efficient means for taking attendance, eliminating tardiness, and achieving peer evaluation of presentations in large classes.

The *Learning Management System* is linked to the Campus Life Engine Platform and automatically provides teachers a list of all their classes and enrollment roster. Using the "Manage Attendance" function, teachers can set up a mobile self-check-in system by simply

providing   students   a   password   at   the   beginning   of   each   class   (Fig.17).

Fig. 17: Online Attendance, Mobile Access, Time-limited Self-Check in with Password

Teachers can regulate the check-in time frame, for example only within the first five minutes of class, and thereby put the onus on students to be responsible for time management. The author found this system completely eliminated tardiness and saved time in collecting and recording accurate attendance. On the other hand, allowances needed to be made, and records kept, for students who forgot, or lost power on, their mobile phones (Field notes, 7/25/18). One other possible flaw is the potential for students to share the password to classmates not in attendance. This problem can be deterred by requiring students to submit reflection notes at the end of each class, or on a random schedule, as a crosscheck.

The author also used the survey creation feature in Tokai's Campus Life Engine for students to peer evaluate poster presentations on countries involved in the FIFA World Cup. Peer assessment, in this case, was necessary as the syllabus protocol specified active methods of evaluation and it was impossible for the teacher to individually evaluate 30 group presentations during one 100-minute period. The instructor created a five point-linear scale to assess five criteria: 1) Poster Design, 2) Presentation Contents, 3) Voice Volume, 4) Teamwork and 5) Eye Contact, and shared the criteria and peer evaluation method with students in advance of their poster preparation. In a format similar to the World Cup (held during the same time frame), teams were divided into eight different groups (A-H) and on the presentation day, four teams presented simultaneously in four corners of the classroom. Other teams assigned to present in the same corner evaluated their classmates using mobile devices. This process was repeated eight different cohorts of presenting groups and allowed for feedback from approximately 18 peers. The average was automatically calculated and used to assign a presentation score worth 25% of the grade (Fig. 18).
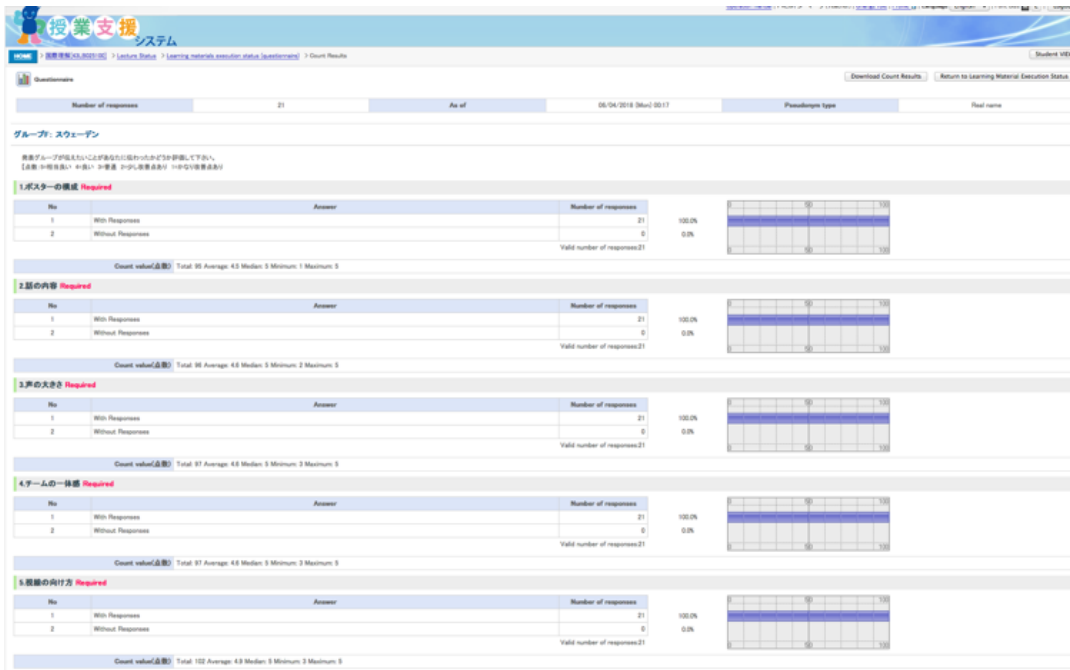
Fig. 18: *Learning Management System*- Peer Assessment Results Analysis

The instructor further evaluated posters submitted by students to check the depth of research, effort in design, acknowledgement of sources, and quality of information in order to assign a poster score worth an additional 25% of the grade. Giving students responsibility for evaluating classmates, encouraged them to be more cognizant of their own performance and lead to greater effort in researching useful information and presenting it in an engaging format (Field notes, 6/9/18, 7/19/18). This observation supports research that shows "a significant relationship between the quality of peer feedback students provided for others and the quality of the students' own final projects." (Li, Liu, Steckleberg, 2010).

In an informal poll of colleagues, no other teachers in the International Communications Department were actively using Tokai University's *Learning Management System*. The author is grateful for the training provided by the Associate Dean and hopes that more teachers and students utilize the free resources available to further engage and assess students. More promotion and campus-wide training in the use of apps and technology will be needed to achieve this goal.

3.   Conclusion

The explosive growth and development of computer technology is having a considerable impact on many aspects of foreign language pedagogy. The majority of language teachers seem to recognize the opportunities afforded by Computer Assisted Language Learning (CALL). However, overwhelmed by the variety of applications available, it can be difficult for teachers to recognize which CALL applications will enhance student learning and which will not. The aim of this paper is to help teachers in this respect by describing a selection of computer-based tools, tried and tested by the authors at Tokai University, Sapporo. The functions of these eight tools (Table. 1) range from vocabulary-learning and social networking, to web-site building and keeping track of students' attendance. Some of them help to raise levels of students' motivation and engagement. Others provide more stimulating or accessible ways to study. Yet others ensure a significantly more diverse range of study options available or make life easier for the teacher by simplifying administration procedures. Diverse though their functions may be, one thing they all have in common is their potential to dramatically enhance the experience of students and teachers alike.

Application	Function
Kahoot!	Interactive Classroom Quizzes
Quizlet	Digital Flashcards with Interactive Classroom Quizzes
Facebook Groups	Class Management
M-Reader	Graded Reader Management
Weebly for Education	Website Building / Class Management
Survey Monkey	Online Surveys
Google Forms	Online Surveys
Tokai University LMS	Attendance Records / Online Surveys

Table 1: The Online Tools Described in this Paper, along with their Functions

The authors would like to offer a final word of advice to teachers who are considering embracing CALL and integrating more computer-based applications into their teaching. From our own experience, the first time using a new app with a class can be a considerable source of worry and even stress. Indeed, the fear of the unknown can put many teachers off. We have found that at some stage it is necessary to simply take a leap of faith and just see how it goes. As with all things in life, nobody is an expert from the start and it is necessary to learn from our mistakes. The innovations in computer-based technology will only continue to accelerate, and those teachers and students who embrace this technology, and endure the associated learning curve, will be richly rewarded.

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