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Recent Innovations and Improvements to Feedback and Collaboration Options for English as a Foreign Language Courses

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Abstract: *This study will detail preliminary use of the Google Suite for Education, a recent innovation that vastly improves synchronous and asynchronous opportunities for students and teachers to interact and communicate. In particular, the study will discuss findings from a two-week unit that taught undergraduate students how to design a questionnaire, administer it, and explain their results as part of an academic presentation in a University of the Ryūkyūs' compulsory first-year English as a Foreign Language (EFL) College English Course. Results of the study and an ensuing discussion will be based on the teacher's field notes, teacher and peer evaluations of the group presentations, descriptive statistical results from a fifteen-item questionnaire administered to the students, as well as open-ended student comments solicited at the end of the questionnaire.*

本研究では、Google Suite for Educationの予備使用に関する詳説を行う。Google Suite for Educationとは、学生と教師間の同期型・非同期型の交流とコミュニケーションの機会を大幅に改善した近年の技術革新である。筆者は、Google Suite for Educationを、琉球大学学部1年次の外国語必修科目である「大学英語」で用いた。本研究では特に、アンケートの作成・管理方法とアンケート結果の説明方法を教えた同科目内の学術的プレゼンテーションの一部である2週間のユニットの研究結果を議論する。研究の成果と今後の議論は、教師の実施調査記録や教師と生徒によるグループプレゼンテーションの評価、生徒を対象にした15項目のアンケートの記述的な統計結果、また、アンケート末部の自由コメント欄に基づくものである。

Introduction

The provision of timely feedback about students' language production and the creation of opportunities for students to interact in the target language are critical tasks for English as a foreign language (EFL) teachers, yet these are also some of their most challenging responsibilities. This is especially so in tertiary settings, where class sizes are frequently large and often meet only once a week. Additionally, many universities' curriculum guidelines are demanding more learning outcome results in less time. Guidelines such as the University of the Ryūkyūs Global Citizen Curriculum (URGCC) exhort that the goals of such language classes should transcend the mere instruction of language and incorporate other skills such as critical thinking and the use of information communications technology (ICT).

This study will detail preliminary use of the Google Suite for Education, a recent innovation that vastly improves synchronous and asynchronous opportunities for students and teachers to interact and communicate. In particular, the study will discuss findings from a four-class/two-week unit that taught undergraduate students how to design a questionnaire, administer it, and explain their results as part of an academic presentation in a University of the Ryūkyūs' compulsory first-year English as a Foreign Language (EFL) College English Course. The College English Course is an introductory course that emphasizes English for academic purposes and has an ambitious number of specific syllabus objectives that were often perceived as challenging to fulfill given the allotted class time. Amongst those objectives is a syllabus component that aims to teach students how to make an academic presentation. The objectives were fairly specific about what was to be taught, but not how, and this seemed like a good op-

portunity to trial the potential for ameliorated feedback and collaboration in an EFL classroom setting using the Google Suite for Education.

Background and Rationale for the Current Study

Shortly after the World Economic Forum of 2012, the term 'Fourth Industrial Revolution' gained increasing usage to describe the current era (Schwab, 2016). The Fourth Industrial Revolution describes a world where (a) the internet and its users are closely entwined (cyber-physical integration), and (b) cloud computing and 'the internet of things' are pervasive. This nomenclature may seem arcane to some, but it aptly describes the experience of a growing number of people in the world: anyone who (a) owns an internet-capable device, and (b) uses it to connect to social networks such as Line or Facebook, and perhaps (c) uses one device, such as a smart phone, to interface with another device. An example would be somebody who uses their smart phone to check Line or to post to Facebook, and then maybe connects their phone to their car stereo (via Bluetooth) to play music on his/her drive home. For many people, this is the extent of how their device usage qualifies as participating in the Fourth Industrial Revolution. It is largely for personal ends and often with little awareness of the vast changes in which they are participating.

The Fourth Industrial Revolution has been a boon to consumers, but its implications are only beginning to be articulated in the labour market and, perhaps more importantly, the educational institutions where learners acquire the basis of skills that they will use to compete in the workplace. There is a growing mismatch between the skills taught in higher education and the skills young people need to know to seamlessly join the workforce of today (Stewart, 2016). They have to be faster than previous generations, and more adept at numerous skills. They require not only ICT skills but also a host of other abilities that together are often referred to as 21st century competencies. They include improved abilities in areas such as cognitive skills, creativity, communication skills, team work, and perseverance (Collet, Hine & du Plessis, 2015; Soland, Hamilton & Stecher, 2013). Most Japanese youths use ICT and these other skills to a certain extent, however the ends towards which they use them and the degree of sophistication they demonstrate are often

significantly different than those required for employment purposes. At least where ICT skills are concerned, Japanese youth are aware of this and reported that they felt themselves to be lacking the basic ICT skills necessary for employment at double the OECD average according to a 2012 Survey of Adult Skills. This rate was the highest in the survey, and double that of the next most dire case (OECD, 2015, p. 124). This is not because of a lack of initiative on the part of government or educational institutions. In 2013 the Japanese Cabinet Secretariat declared its objective for Japan to become the world's most advanced IT nation (Japanese Cabinet Secretariat, 2013). Similar directives and initiatives from the highest levels of government and administration have been urging greater efforts to promote better ICT skills and other 21st century competencies amongst youth in particular. At the University of the Ryūkyūs this has taken the form of the University of Ryūkyūs Global Citizenship Curriculum (URGCC, see Figure 1). These particular guidelines were facilitative when implementing this study. They supported a rationale that was immediately and concretely tied to institutional curriculum goals.

The Google Suite for Education

While the imperative to implement ICT and other 21st-century competencies has frequently been communicated at the highest levels, there has been less concrete discussion as to 'how', and this has led to implementation challenges at a syllabus level. Especially with regards to ICT, it has often been difficult for teachers who do not have access to computer labs to incorporate such components in their syllabi. Previous research has identified the mobile/smart phone as a promising alternative that could be used for certain ICT-based syllabus objectives (MacLean, 2010; MacLean & Elwood, 2013); however, only recently has a full set of productivity applications become available that allow smart phone as well as computer usage. A powerful and free set of productivity tools for classroom collaboration known as the Google Suite for Education (GSE) is increasingly being used in educational settings. It consists of a cloud-based file storage and synchronization service, known as Google Drive, where users can create, store, and share files of almost any format. A key feature of Google Drive is that it enables users to create numerous files with its core applications: (a) Google Docs for word processing, (b) Google Slides for presentations, (c) Google Forms for sur-
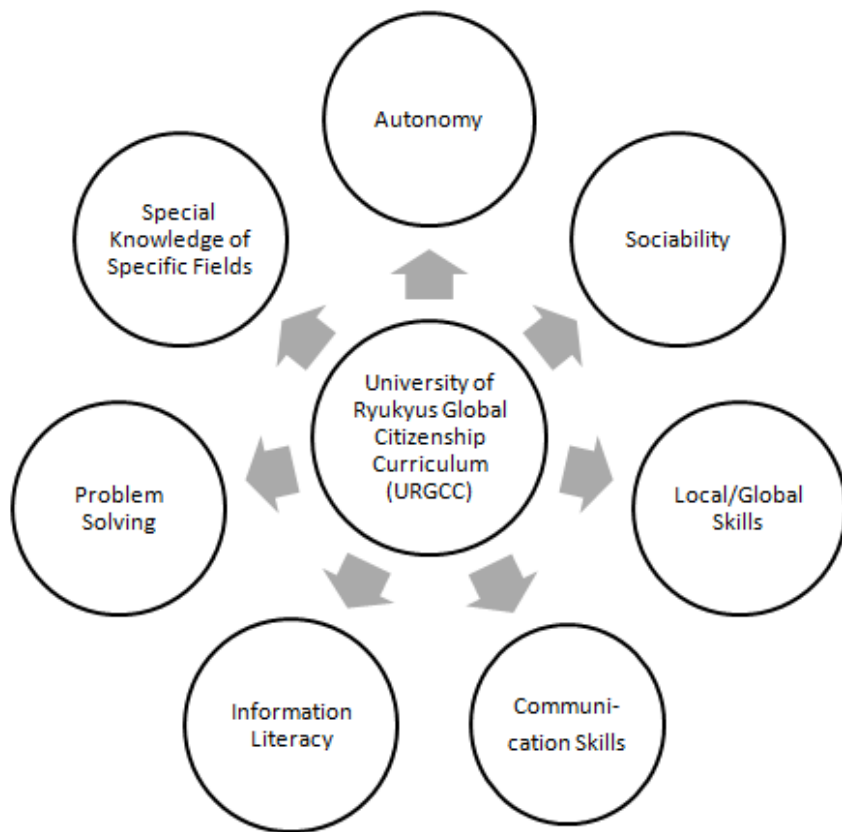
Figure 1. University of the Ryūkyūs' Global Citizenship Curriculum

veys, and (d) Google Sheets for data analysis. Users can share files and communicate using almost any kind of ICT device that can connect to the Internet, including smart phones, tablets, PCs, Macintosh computers, and Chromebooks. Together, these applications make up a powerful set of collaboration tools that have the potential to decrease the amount of time needed to teach a given concept, and increase the breadth of what can be taught given a limited number of class hours. Moreover, where foreign language classes are concerned, these applications represent the possibility to augment the quality of interaction by increasing the volume of feedback available to learners and the timeliness of its delivery. The GSE allows for feedback such that teachers and students can chat within an application, and monitor and comment in real time or asynchronously while changes to their work are being made.

Peer Evaluations

The presentation component of this unit was designed with consideration of the innovations that the GSE has made possible for the transmission of feedback to learners in a timely manner. It was con-

ceived with reference to a set of beliefs that are influenced by social constructivism (Vygotsky, 1978, 1986), and research that asserts that students should be given opportunities to practice twenty-first century skills in the form of communication that involves peer feedback, knowledge sharing, and critical thinking that will enable them to succeed in life and in their future workplaces (O'Brien, Franks, & Stowe, 2008; Pellegrino & Hilton, 2009; Topping & Ehly, 2001). The American Psychological Association's (APA) learner-centered principles for cognitive and meta-cognitive factors influencing learning are particularly relevant to peer assessment and this syllabus unit, for example the 14th principle, which notes that "Setting appropriately high and challenging standards and assessing the learner as well as learning progress—including diagnostic, process, and outcome assessment—are integral parts of the learning process" (APA, 1997). Peer evaluation provides an opportunity for increased self-regulated learning and facilitates social processes that are conducive to a meaning-focused and content learning oriented classroom environment, all the while teaching the use of tools that enable students to seek help from their peers or teachers, work in groups, and engage in purposeful collaboration and feedback (Mitchell & Bakewell, 1995; Newman, 2008). Implicit in this approach is the belief that a new classroom culture can emerge through peer evaluation, one that has the potential to develop learner autonomy (Birjandi & Azad, 2009, Webb, 2016), and deepen students understanding of and appreciation for the evaluation process (Falchikov, 2003; O'Donovan, Price, & Rust, 2008). Until recently it has been difficult to involve a whole class in the evaluation process along the lines envisioned by this survey and presentation unit. The sheer amount of data that would have to be processed would consume an unfeasible amount of time and resources for most teachers. However, if the tools made available by the GSE can successfully be mastered by students, it may be possible that they can serve as a conduit for augmented teacher and peer feedback. As Mun and Lee (2015) have noted, successful implementation depends on how well the
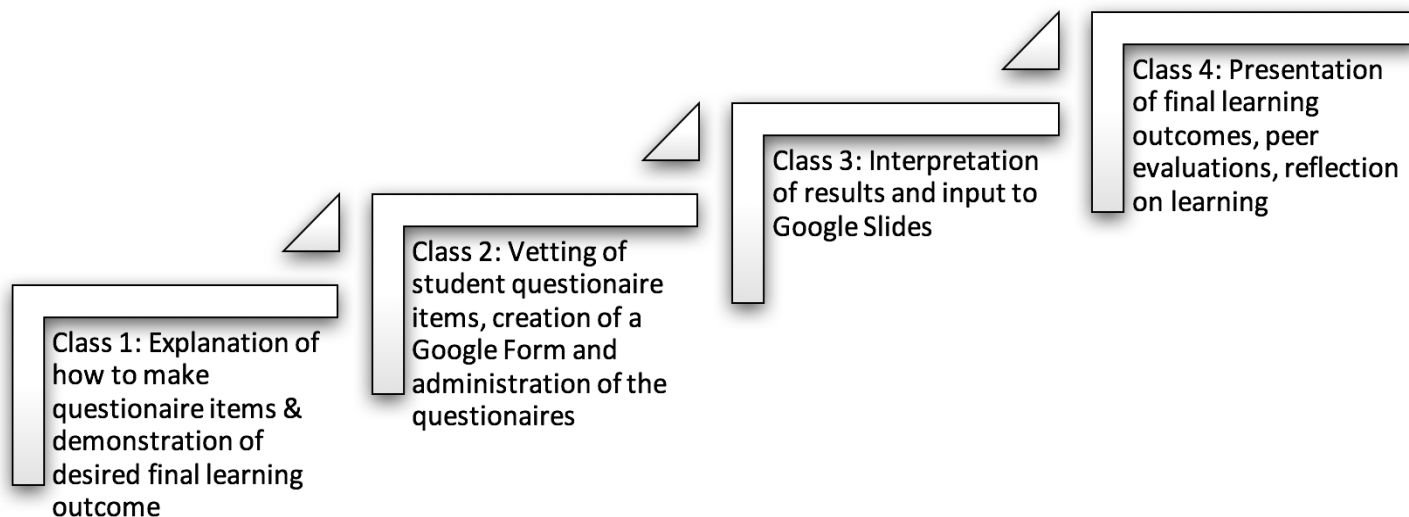
Figure 2. Syllabus objectives by class.

Class 1: Explanation of how to make questionaire items & demonstration of desired final learning outcome

Class 2: Vetting of student questionaire items, creation of a Google Form and administration of the questionaires

Class 3: Interpretation of results and input to Google Slides

Class 4: Presentation of final learning outcomes, peer evaluations, reflection on learning

automated response analyses of (in this case) Google Forms can be deployed, as well as how effectively peers exercise judgement during the assessment process. There has been some question as to the reliability of untrained raters, namely, student peers (Weigle, 1978). However, in the domain of ESL written feedback, Matsuno (2009) found that peer-raters were internally consistent and produced fewer bias interactions than self- and teacher-raters. Other researchers have reported no significant difference between learners' peer assessment and teacher assessment (Azarnoosh 2013; Saito & Fujita, 2009). It thus seems possible that students might be more intricately and actively involved in the assessment process through peer evaluation.

With the above in mind, the following study describes and evaluates a syllabus unit that employed recent innovations in order to guide students as to how to deploy and make use of ICT and other 21st-century competencies, notably collaboration and the provision of feedback to each other.

The study will consider two research questions:

(1) Given the relatively short time allowed for this teaching unit (four classes), were students able to effectively learn and use the skills necessary to complete their assignment?

(2) How did students evaluate their learning experience and the effectiveness of the collaborative format of this teaching unit?

Results of the study and an ensuing discussion will be based on the teacher's field notes, teacher and peer evaluations of the group presentations, descriptive statistical results from a fifteen-item questionnaire administered to the students, as well as open-ended student comments solicited at the end of the questionnaire.

Method

Participants

65 learners participated in this initial study, representing four majors and one undetermined (Other Major): English ($n = 27$, 54.54%), law ($n = 2$, 3.08%), tourism ($n = 19$, 29.23%), politics ($n = 6$, 9.23%), and other ($n = 11$, 16.92%). There were 34 females (52.31%) and 31 males (47.69%) with an approximate mean age of 19.

Procedure

Students were divided into groups of four and asked to decide a questionnaire topic pertaining to Okinawa Prefecture and to devise two questions each that would elicit information about peoples' attitudes toward their group's chosen topic. They combined their questions into one group Google Document and, following feedback about the effectiveness of their questions and the accuracy of their language use, students were taught to make and administer a questionnaire using Google Forms. Once students had administered the questionnaire, they were taught to analyze their results using Google Forms' Responses to access information such as charts, schematics, and other informatics information pertinent to their area of inquiry. One Google Slides presentation was created for each group in a folder inside a Google Drive and was shared by all class members. Each student was assigned two

frames (also known as a slide in PowerPoint) for which they would be required to present and interpret their data using the target language during a group presentation to their class. Students were taught how to take a screenshot of their data and paste it into a frame and how to discuss their results in English. Each group gave a presentation of approximately six minutes, and all students were asked to assign a grade of up to 100% for each group, as well as an assessment regarding their perception of the equity of work distribution within the groups based on the overall quality of the presentation and each members' contribution when presenting. This inquiry took the form of a five-point Likert scale question where one indicated a 'very unequal' perception of each member's efforts and five indicated a 'very equal' perception of each group member's efforts. A Google Form was used to collect these data and the results were anonymous except to the teacher who compiled the student responses. Participants used Macintosh Desktop Pros in one iteration and ACER Chromebooks in another (see Figure 2).

Student Perceptions of the Questionnaire-Making Syllabus Unit

Based on the research questions above, a 15-item questionnaire was used to query students about what they learned and how they perceived the teaching unit. A five-point Likert scale was used for 14 of the questionnaire items, where one indicated 'strongly disagree' and five indicated 'strongly agree". Seven items queried students about what they learned. Seven items inquired about their perceptions of the survey-making syllabus unit, and a final open-ended question asked students to comment about the teaching unit in English or Japanese. These data were subsequently exported to a CSV Excel file and serve as part of the analysis and discussion below.

Results

Student Achievement of Syllabus Objectives

All of the students were able to successfully complete each of the syllabus objectives specified for the unit in four classes. Notably, this included composing English questionnaire items using Google Docs, creating a Google Form for their group and administering their questionnaire to at least ten people, interpreting and inputting their data into Google Slides, and analyzing their results as part of a group presentation using the target language. The components of these assignments roughly corresponded to many 21st-century competencies (Collet, Hine & du Plessis, 2015; Soland, Hamilton & Stecher, 2013) and URGCC goals (see Table 1), and required a formidable range of skills and abilities.

To begin, students were shown an example of what their questionnaire should look like, and taught how to make questionnaire items. They were given some time in class to decide a topic for their group questionnaire, and asked to make two questionnaire items for the following class. Some of the students initially had trouble grasping the concept of Likert-scale items. Instead, they used open-ended 'wh' questions. At this point, the unique facility of the GSE was extremely useful for transmitting feedback. Firstly, students were able to combine their questionnaire items into one Google Document with little difficulty, and thereafter they could all view them at the same time. As well, the teacher was able to open each group Document and observe students as they reviewed the Document and discussed any possible mistakes amongst themselves. This process yielded numerous changes and discussion that indicated meta-awareness of the assignment's objectives and how to use the target language toward such ends. During this process, the teacher had each groups' Document open

Table 1: *Incorporation of URGCC Goals into Syllabus Objectives*

URGCC Goals	Syllabus Objectives				
	Question-naire	Forms Use	Data Interpretation	Slides Use	Presentations
1. Autonomy	o		o		o
2. Sociability	o				o
3. Local/Global Skills	o		o		o
4. Communication Skills	o	o	o	o	o
5. Information Literacy	o	o	o	o	o
6. Problem Solving	o	o	o	o	o
7. SKSP*	o	o	o	o	o

Note: *SKSP denotes Special Knowledge of Specific Fields.

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and gave its members feedback in oral and written form about their English usage as well as the form of their questionnaire items. Such a process would have been largely impossible before the advent of cloud collaboration. It was fairly easy in most cases to make it clear to the students what questionnaire items would not produce quantifiable results without extended analysis, and students were able to quickly make revisions so that all of the final questions were in a form that yielded readily describable results using statistics from Likert-scale questionnaire items. It was also possible to quickly and conveniently view all of the students' work and comment on it because it was available in a shared folder and thus readily available to view synchronously by the teacher and all group members.

The above facility for conveying necessary feedback made it possible in the second class for the teacher to demonstrate how to make a Google Form questionnaire, and to monitor each groups' efforts similarly to the above described process. By creating the questionnaire in a shared folder, monitoring the students, commenting on their work, and giving them feedback in real time the syllabus objectives were greatly facilitated. The Chat and Commenting features of the GSE were demonstrated for this, albeit somewhat sparingly given time constraints. Generally the teacher made verbal comments while sometimes augmenting this with explicit correction of written mistakes, since he was 'shared' to each document with Edit privileges and could make changes as he thought appropriate. There was some variation as to how fast each group was able to complete this part of the assignment, but those who finished quickly were able to proceed to more advanced formatting options, such as specifying a background color, and inserting images. By the end of the class, each group had successfully completed a Google Form questionnaire and administered it to at least ten people outside of their group.

In the final class prior to presentations, the teacher was again able to monitor and convey real-time feedback and comments about each groups' efforts to assemble their Google Slide presentation. Frequent mistakes included capitalization of titles, spelling mistakes, and basic formatting issues. Groups that quickly finished a basic presentation were then able to attempt more advanced formatting features such as adjusting font and color, choosing a background other than the default setting, and inserting images. They were also given brief time to further plan and rehearse their presentations, which they appeared to use with good effect.

Students made their presentations in the final class of this unit, and it was clear from the quality of the presentations as well as student responses to the ensuing questionnaire that completion of each of the presentation syllabus objectives was a success. While doing this, students were able to input peer feedback in a Google Form about each groups' performance which was immediately compiled and subsequently transmitted to the group at the end of the class, along with the teachers' feedback. As such, it appears the concerns expressed by Mun and Lee (2015) regarding students perhaps not being able to effectively use automated polling technology (Google Forms) were absent in this case. Student comments indicate they enjoyed the process and learned many new skills (see Appendix). Many of the comments indicate they derived an appreciation for the evaluation process that is in line with the findings of Falchikov (2003) and O'Donovan, Price, and Rust (2008). Moreover, some of the students' comments articulate a critical awareness and reflection about their learning that is desirable to encourage in further such efforts.

Student-Reported Learning Outcomes

Student responses from the post-unit questionnaire revealed that most of them positively viewed their achievement of the learning objectives for this teaching unit (see Table 2).

Student responses indicated that they achieved a solid understanding of the skills involved in the syllabus objectives, and it seems clear that, in this context, the instruction of ICT skills and English as a

Table 2. *Student-Reported Learning Outcomes*		
I learned to…	Descriptive Statistics	
	Mean	SD
make a questionnaire	4.35	0.62
use Google Forms	4.45	0.61
interpret data	4.42	0.61
take a screenshot	4.28	0.82
use Google Slides	4.48	0.71
use the GSE Chat and Comment functions	1.98	1.27
present data in English	4.43	0.61
Note: SD = Standard Deviation; GSE = Google Suite for Education		

foreign language were compatible when using the GSE. One item that somewhat detracts from these positive results was the relatively low level ($m = 1.98$) of learning students indicated where the use of the GSE's Chat and Comment functions were concerned, albeit the result of this query item had a standard deviation that indicates this was not altogether the case for all participants.

Teacher and Peer Feedback

The analysis of student responses about peer grading indicates they were generally consistent in their grading and the aggregate results closely approximated the teacher's scores for each of the groups (see Table 3).

A majority of students graded the presentations either "A" or "B" which correspond to grades of 90-100% and 80-89.5%, respectively. The teacher's mean grade evaluation for this unit was 86.5%. Peer evaluation behavior in this context therefore upheld the findings of Matsuno (2009), Saito and Fujita (2009), as well as Azarnoosh (2013). The teacher's grades and aggregated student grades were close enough that further use of peer evaluation in this context should be considered. These results thus suggest that peer evaluation is technically possible and students' aggregated results, given a class size of approximately 30-40 students, should be able to serve as a reliable part of the assessment process, or at least a facet that encourages deeper reflection about the learning processes involved in oral presentation contexts.

Student Perceptions of Work Equity

Table 3: Peer Grading Distribution by Letter Grade

Presentation Groups	Peer-Assigned Letter Grades				
	A	B	C	D	n/c
Group 1	27	31	5	1	1
Group 2	32	26	4	0	3
Group 3	43	19	1	0	2
Group 4	41	21	2	1	0
Group 5	33	30	1	0	1
Group 6	37	24	3	0	1
Group 7	43	20	2	0	0
Group 8	36	23	1	0	5
Group 9	33	17	1	0	14
Group 10	28	19	1	0	17
Count	353	230	21	2	44
% of Total	54.31	35.38	3.23	0.31	6.77

Note: n/c = no comments. Students were instructed to select "No Comment" for grades less than "D".

One concern when requiring students to collaborate in groups for an extended number of classes is that the possibility exists whereby some of the group members will not participate in the process for various reasons, and fail to adequately contribute to the overall learning outcome. In this case, student perceptions of the equity of group members' efforts were largely favorable (see Table 4).

Based on students' responses as to the equity of work distribution and effort, as well as the instructor's observations about this, it seems group work for the objectives of this syllabus unit is feasible. Moreover, it is a desirable feature because the amount of time it would otherwise take for each student to individually present their results would be precluded by time constraints and other objectives dictated by the (prescribed) syllabus for this course.

Student Perceptions of the Teaching Unit

Seven criteria were used to assess students' reactions to the questionnaire and presentation unit. Participants indicated a strong enjoyment of this type of activity and an appreciation of the skills they learned, although they were somewhat nervous making their presentations (see Table 5).

Students enjoyed the unit (Q1: 4.37), and liked working in groups (Q2: 4.35). While working in groups they were helped by other members (Q3: 4.46) and, to a slightly lesser though not significant extent, they helped other members of their group (Q4: 4.35). With respect to the knowledge gained as part of the questionnaire and presentation unit, students indicated it would be useful for their future (Q5: 4.31) and they anticipate using the skills they learned again (Q6: 4:51). In spite of the fact that students were somewhat nervous (Q8: 3.9) the overall impression based on student responses is that the questionnaire unit and the use of the GSE was favorably viewed by the students to a large extent, they perceive the value of the skills they were taught, and they plan to use them again.

Limitations of the Current Study

The current study was an initial inquiry into the feasibility of teaching a number of complex skills in a compressed amount of time. It also examined how students would

Table 4: *Student Perceptions of Equity of Work Distribution by Group*

Presentation Groups	Relative Effort				
	Very equal	Equal	Some what	Unequal	Very unequal
Group 1	25	24	12	3	1
Group 2	30	28	5	1	1
Group 3	37	23	5	0	0
Group 4	34	26	3	2	0
Group 5	38	21	4	1	1
Group 6	37	25	2	1	0
Group 7	40	22	2	0	1
Group 8	36	21	5	1	2
Group 9	32	15	14	0	4
Group 10	29	19	13	0	4
Count	338	224	65	9	14
% of Total	52.00	34.46	10.00	1.38	2.15

react to the process. One limitation is that the sample size for this study was fairly small, and caution should therefore be exercised when making any definitive claims without further investigation with a larger sample size. This would allow for more advanced analyses to be deployed, such as many-faceted Rasch measurement. It would also be prudent to undertake a more sophisticated consideration of several other aspects of this study, including long term effects of the treatment and uptake of feedback about linguistic and other skills that were syllabus objectives.

Conclusion

This study set out to explore the feasibility of teaching students a number of English for academic purposes skills in a necessarily short period of time while also deploying 21st-century competencies such as demonstrating effective use of three GSE applications. The rationale was based on dictates of the course syllabus as well as URGCC guidelines. There are a number of policy guidelines from government and upper-university authorities that are attempting to alleviate a growing mismatch between the skills students will need once they enter the workplace and those they currently learn in higher education settings: Skills such as ICT use, collaboration, and the ability to effectively and critically provide peers with feedback about their performance are all essential components for actively participating and succeeding in today's labor market.

In answer to research question number one as to whether students would be able to effectively learn and use the skills necessary to complete their assignment in the relatively short time allowed for this teaching unit, they were decidedly successful. Every student who was present for all four classes was able to satisfactorily attain the syllabus objectives targeted for this unit; specifically, they could compose English questionnaire items using Google Documents, co-create a Google Form for their group, administer their questionnaire to at least ten people, interpret and input their subsequent data into Google Slides, and analyze their results as part of a group presentation using the target language.

As for how students evaluated their learning experience and the effectiveness of the collaborative format of this syllabus unit (research question two), responses were overwhelmingly positive. Students perceived that there was an equitable distribution of effort and work within groups. They enjoyed the questionnaire and presentation unit, albeit they were somewhat nervous to present their results. The students enjoyed working in groups and helped each other in a manner consistent with effective collaboration behavior. Moreover, they indicated that the skills they learned throughout the unit would be useful for their future and that they intend to use them again.

One result that was rather less successful than anticipated was that students generally did not feel they learned to use the Chat and Comment features of the GSE. This is an essential feature for students to learn in order to promote of better interaction and peer feedback, however the short duration of this unit did limit the extent to which students would be able

Table 5. *Student Perceptions of the Questionnaire & Presentation Unit*

Extent that…	Descriptive Statistics	
	Mean	SD
I enjoyed this unit	4.37	0.65
I liked working in groups	4.35	0.67
Members in my group helped me	4.46	0.64
I helped members in my group	4.35	0.65
Knowledge gained will be helpful in my future	4.31	0.71
I will use these skills again	4.51	0.59
I was nervous	3.90	0.92

Note: SD = Standard Deviation

to effectively grasp the facility of these features. Future efforts should examine students' proficiency with the skills targeted here in a longer term study. They should also consider long-term uptake of linguistic and skills-based feedback. Finally, more comprehensive measures and analyses of the behaviors examined in this study would be desirable, especially where self-, group-, and peer-evaluations are concerned.

Notes

1. This is a substantially revised version of a study that was initially published in the University of the Ryukyus' in-house journal, the *Ryūdai Review of Euro-American Studies, No. 61*. The original report's intention was to share results with colleagues and solicit collaborators. The author has no commercial interests vested in any of the ICT applications mentioned in this research, and the results herein are quite likely achievable with numerous other widely-available applications.

2. The Appendix contains only a limited sample of the comments learners had about this unit, though they are fully representative of the entire set.

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Appendix

Student Responses to Open-Ended Questions

Everyone spoke English so well I was surprised!!

Thanks to this course, I can use the computer skills. I enjoyed presentation.

I can learn about how to use the google. That is very useful in the future.

We think we did our best for our presentation, so we are satisfied and will accept the result from our teacher and classmates.

I learned to use IT skills in this class. So I can use its skills in other class.

This teaching module is so fun for me:)) Thank you my group members!

I was first nervous to use computer, however, now I have confident to use it!

Thank you for teaching us a lot of things. I want to use the things that I learned here.

Making good questions was difficult. One of my question that I made was a little abstract.

I would like to try to use these skills more.

I think this Google presentation is nice.

I don't speak fluently, but I enjoyed presentation with group members.

Google Forms is so useful

I learned to use Google Forms. It is useful, but I cannot use well yet. I want to practice it.

Presentation is a little difficult, but I enjoyed survey and make our presentation.

I think presentation is useful in the future.

It was fun and I learned a lot from this class.

It was just lack of preparation.

I was nervous, but I enjoyed the presentation.

I enjoyed today's presentations and I want to use computer skill in university life!

I very much enjoyed this presentation and group work.

I enjoyed today's activity because I could learn something I've never heard.

Activities of this class are very important and helpful skills for my future.

I thought we should have made more good slides. And I thought I want to become a person who does not get nervous.

To presentation in English is difficult for me but it was good experience.

About the author: George Robert MacLean, professor at the University of the Ryūkyūs, has taught at primary, junior high, and university levels in both the Japanese and the international school systems, as well as serving as an administrator. His research areas include materials development, mobile-learning, CALL, conversation analysis, and intercultural communications.