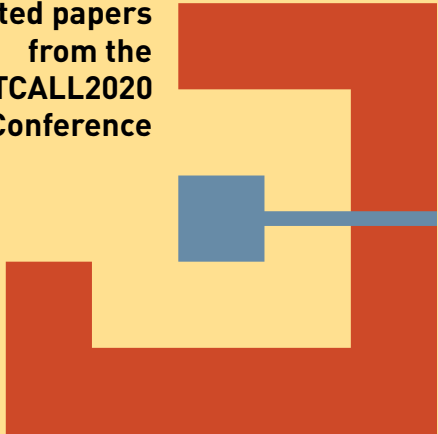


TE^ACHING with NOLOGY 2020

Selected papers
from the
JALTCALL2020
Conference



JALTCALL
2020



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ISBN 978-4-901352-63-5

Teaching with Technology 2020
Selected papers from the JALTCALL2020 Conference



JALT CALL is a Special Interest Group (SIG) of the Japan Association for Language Teaching (JALT) that focuses on Computer-Assisted Language Learning (CALL) and technology in language learning.

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JALT Central Office
Urban Edge Bldg. 5F, 1-37-9 Taito,
Taito-ku, Tokyo 110-0016, Japan

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First published in Japan in 2021 by the JALT CALL SIG.

Layout by Paul Mason

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Enhancing Teacher Education Through a Lesson Study Application Built with WordPress

James M. Hall, Kodai Tamura, and Shuhei Kumagai, Iwate University

Abstract

A WordPress Lesson Study Application (LS APP) was developed for an English teacher education program at a Japanese national university for the following two purposes: (1) bridge the gap between teacher education classwork and school practice; and (2) enhance collaborative reflective practice between student-teachers. The first was accomplished through linking student-teachers' teaching practicums with theory and techniques learned in their university English teaching methodologies class using the tagging function of the LS APP. The second was accomplished through enabling students to give each other feedback on their lessons during their practicum using the LS APP. This paper describes how WordPress content management functions and two plugins were utilized to accomplish the two objectives. Then, it describes the lesson study process facilitated by the application. Lastly, the authors describe the extent to which the LS APP has linked theory and practice as well as the type of peer feedback student-teachers perceive themselves to have benefitted from. The goal of this paper is to describe how WordPress functionalities have been used to facilitate teacher development, and serve as a practical case study of using technology to enhance teacher education.

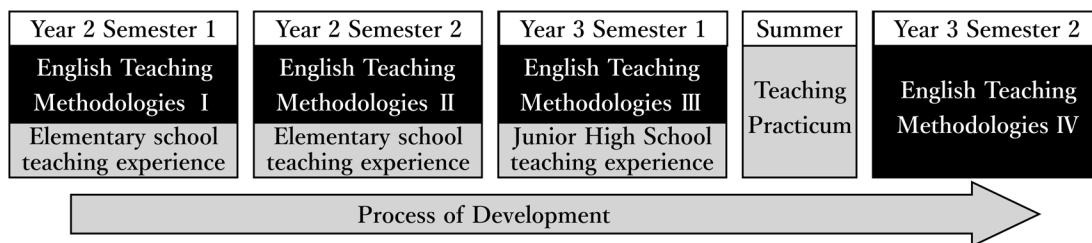
日本の国公立大学における英語教員養成課程において、WordPressを使用した授業研究アプリ(LS APP)は (1)大学における講義と教育現場における実践の差をなくしていくこと、(2)実習生による共同の省察の実践を高めていくことの2つを目的に開発が進められてきた。1つ目の目的は、LS APPのタグ付け機能を活用しながら、実習生による現場での授業実践と大学で学んだ理論や技術を結びつけることによって達成された。2つ目の目的については、授業実践が行われている最中にLS APPを使用しながら参観している実習生がコメントし、互いにフィードバックしあうことによって達成された。本研究では、WordPressのコンテンツ管理機能及び2つのプラグインがどのような作用によって、これら2つの目的を達成しているのかについて述べている。次にアプリを使用した授業研究の過程について、そして、実習生にとってどのようなピア・フィードバックが有益かだけでなく、LS APPがどの程度まで理論と実践を結びつけているのかについて述べる。本研究における目標は、WordPress特有の機能性が教師としての成長を促進するためにどのように使用されているのか、そしてこの機能性が教員養成をよりよくしていくために、テクノロジーを使用した実践的事例研究としてどのように寄与するものかを述べることである。

Keywords: Reflective practice, lesson study application, English teacher education, WordPress

The first author works in the Faculty of Education at a national university in Japan and helps to oversee the English teacher education program. To get a first-level license (*isshu menkyo*) for teaching English in junior high school, student-teachers (STs) are required to take four English teaching methodology (ETM) classes, which will be called the ETM program hereafter. Figure 1 shows how the ETM Program mixes university class work with actual teaching experience. In ETM I to ETM III, STs have the opportunity to teach one lesson at an elementary or a junior high school to try out the theories and techniques learned in the ETM classes. For these lessons, they teach in groups of 2 to 4 people. Between ETM III and ETM IV, STs undergo their required teaching practicum for their license. In ETM IV, they reflect on their practicum and then complete their ETM classwork.

Figure 1

English Teaching Methodologies (ETM) Program



The ETM program takes a sociocultural approach to teacher development (Johnson, 2009). That is, it assumes that an ST’s understanding of theory and practice will develop at the same time. According to Golombek and Johnson (2019), praxis is the dialectical unity of theory and practice in which “theory guides practice and practice shapes theory” (p. 25). In ETM, it is hoped that the praxis of STs will develop through classwork, practical experience, and STs attempting to make sense of their teaching experiences through collaborative reflective practice. Thus, the goal of ETM is to help STs become reflective practitioners who can develop their own theoretically sound and contextually appropriate teaching practices.

The first author designed a Lesson Study Application (LS APP) using WordPress to help STs develop into reflective practitioners. The LS APP enables STs to connect their teaching experiences with the learning areas in ETM classes and engage in collaborative reflective practice by giving feedback to one another on the lessons they teach. Not only do these purposes address the needs of the ETM program, but they also address two prevalent issues in English teacher education: making pre-service educational content relevant to actual teaching and encouraging collaboration in reflective practice. The literature review provides a brief background on the two issues and then discusses how WordPress can be used as an LS APP to address these issues. The authors investigated the extent to which the LS APP was able to help STs link their teaching experiences with ETM class content as well as the kind of feedback given on the LS APP that STs found beneficial. It shows tagging lesson study posts with ETM keywords has the potential to connect theory and practice, and how commenting on lesson study posts promotes collaborative reflective practice.

Literature Review

Issues in Teacher Education

It is generally accepted that there is a divide between the educational theory STs learn in the university classroom and the ways in which the STs teach at schools (Farrell, 2019). According to Baguley (2019), among the reasons for this divide are: theory that STs learned in class is not applicable to schools; STs have not learned strategies or techniques that would enable them to teach more flexibly; STs do not know how to teach to individual differences; STs are only familiar with linear lesson planning and struggle to make adjustments. Effective teaching depends on being able to make the most appropriate instructional judgements using one's expertise as well as situational understandings. Nutthall's (2007) longitudinal research on grade school students' classroom learning shows that there are no universal, one-size-fits-all methods for student-teachers to acquire: "The teaching that produces most learning in students varies from day to day, from class to class, and from time to time in the same class" (p. 24). In summary, to bridge the theory and practice divide, pre-service teacher education must help STs develop not only a repertoire of teaching techniques but a dynamic praxis which evolves as an ST's academic knowledge grows and pedagogical experiences increase.

The second issue is encouraging collaboration in reflective practice. In the field of English language teaching, reflective practice is considered a systematic way of analyzing and improving one's pedagogy (Farrell, 2015). Teachers plan a lesson, teach it, reflect on it, make improvements, and teach again. Reflection has become ubiquitous in the field of teacher education, but according to Mann and Walsh (2013), it is often carried out ineffectively. They argue that reflective practice is frequently done subjectively by individual teachers and much of their conclusions are reached without any kind of data-based support. Valid reflective-practice entails STs reaching their conclusions by being informed from data and the perspectives of others who observed their class.

Methods

The methods section first discusses how WordPress content management and plugins were utilized to create a Lesson Study Application that could address the two prevalent issues in teacher education: bridging the theory-gap divide and encouraging valid and collaborative reflective practice. Second, it explains the lesson study process. Third, it presents two research questions designed to investigate the extent to which the LS APP addresses these issues. Fourth, it describes the participants and main forms of data collected: lesson study tags and comments. Lastly, it discusses how the lesson study tags were categorized and the comments were coded.

Building a Lesson Study APP From WordPress to Support Teacher Development

WordPress is a content management system (CMS) and popular website building platform powering about 32% of all sites on the internet (Messenlehner & Coleman, 2019). It is

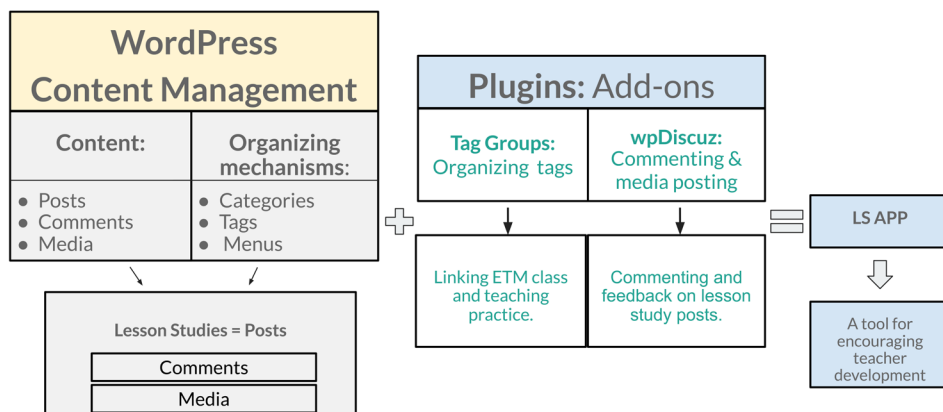
well known as a blogging platform, and is used in education for ePortfolios, student blogs, classroom websites, and learning management sites (Edublogs, n.d.). WordPress can also serve as a platform for building web applications, which are defined as “software designed to perform a group of coordinated functions, tasks, or activities for the benefit of the user” (“Application Software,” n.d.). In the case of the LS APP, the benefit of the coordinated functions is teacher development. These functions are explained more below.

The LS APP utilizes WordPress content management functions to organize the lesson study content. Plugins are used to link ETM learning areas with STs’ teaching and to encourage collaborative reflection. The LS APP uses a total of 30 plugins for site security, site maintenance, styling, and user management. This paper focuses only on the plugins related to making ETM content relevant to classroom teaching experiences and encouraging collaborative reflection. The other plugins are discussed in detail in Hall (2019). Figure 2 provides an overview of WordPress content management for the LS APP and how two plugins perform the functions to facilitate teacher development on the LS APP.

Figure 2

WordPress Content Management and Plugins Used on the LS APP

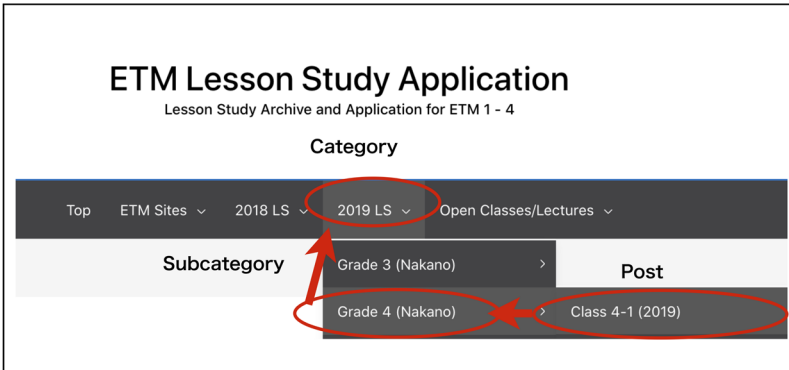
Building a LS Study APP with WordPress



WordPress content management refers to the type of content appearing on the LS APP and the mechanisms for organizing it. The content of the LS APP is composed of posts, comments, or media. A post on the LS APP was a lesson study. The posts have media such as lesson plans, worksheets, video of the lesson, and pictures of the lesson as well as comments about the lesson attached to it. The content in the LS APP is organized by categories, menus, and tags. Categories are ways of grouping posts, and these groups of posts can be displayed in menus. The screenshot in Figure 3 shows the LS APP menu and the categories in which lesson studies were organized. For example, the lesson study post for class 4-1 was under the category *Grade 4*, which was a subcategory for *2019 LS*, or lesson studies conducted in 2019.

Figure 3

WordPress Menu Showing Lesson Study Categories



Post tags are further ways to organize content. A tag is a keyword which is attached to a lesson study and highlights its content. Figure 4 shows a lesson study post with the tags on the top. If users click on the tag, *Managing demonstrations*, they can see all lesson studies sharing the same tag as well as a description of the tag.

Figure 4

An Example of Tags as a Means of Organizing Content

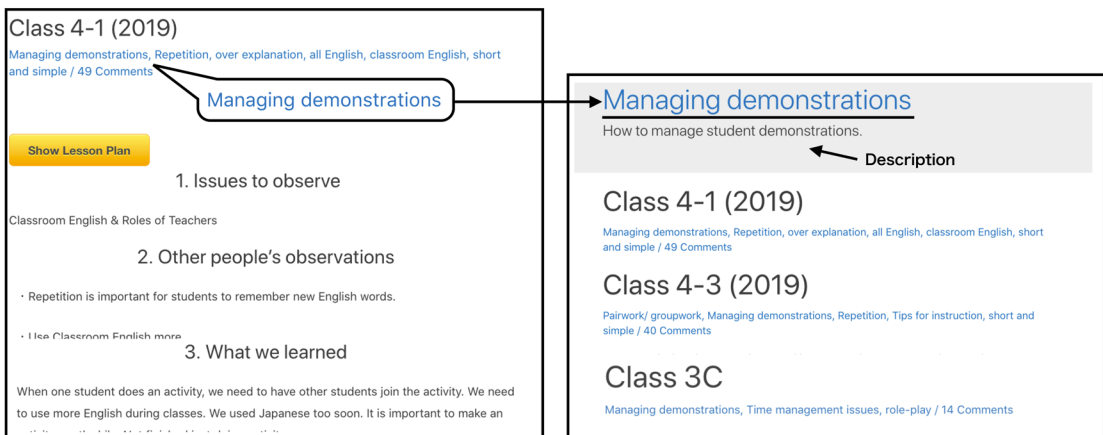
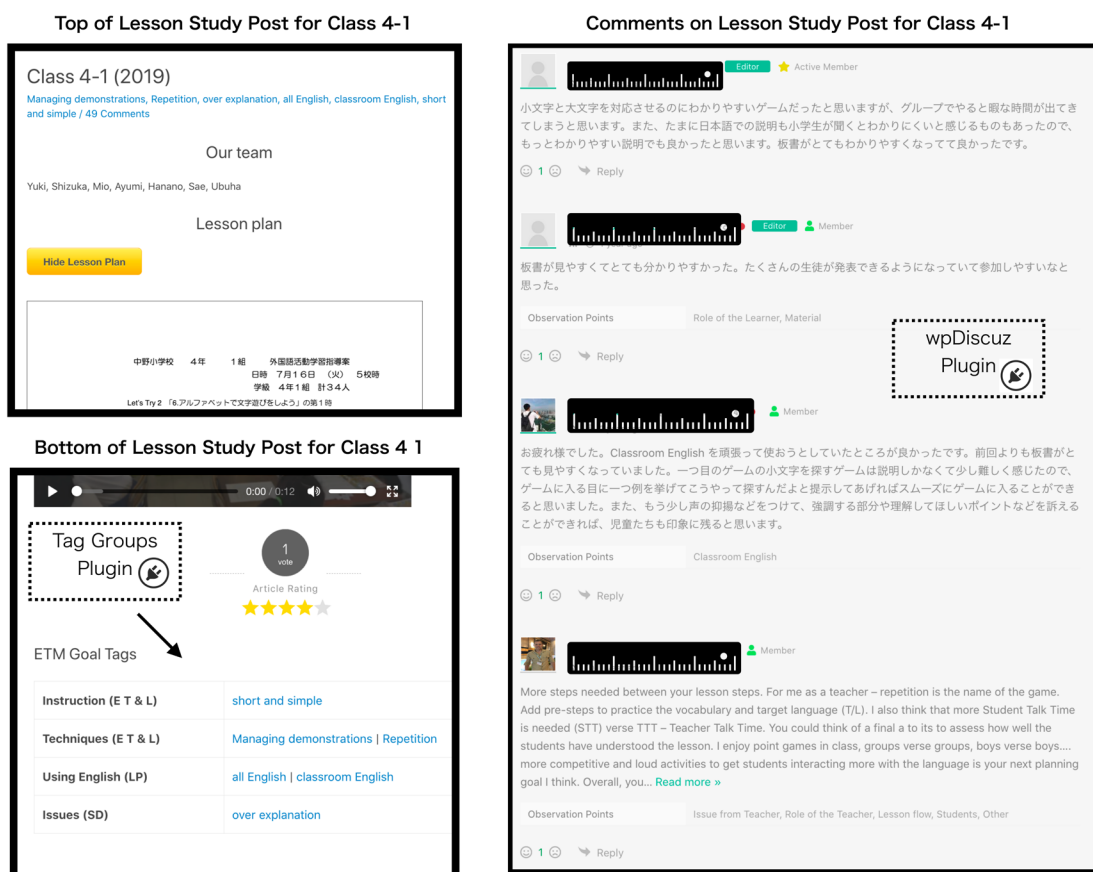


Figure 5 shows how the plugin, Tag Groups (Chatty Mango, n.d.), enables users to link ETM class content with their teaching experiences. Tags or keywords for the lesson study appear on both the top and bottom of the post. Tags shown on the bottom of the post link to ETM learning areas. For example, the tag *short and simple* is shown under the ETM secondary area of *instruction*.

Figure 5 also shows screenshots of comments on a lesson study post. The LS APP used the commenting plugin wpDiscuz (gVectors Team, n.d.) to facilitate valid and collaborative reflection. The screenshot shows users could choose an *Observation Point* for their comment. In addition, users could tag the practitioners or other observers in their comment encouraging them to read it and respond. Lastly, users could attach video or pictures to their

comments to substantiate their points. Thus, commenting enabled users to give and receive feedback on lessons as well as provide data to support their assertions. It was hoped that these functions would support valid reflective practice.

Figure 5
Tag Groups and wpDiscuz Plugin on a Lesson Study Post



Lesson Study Process

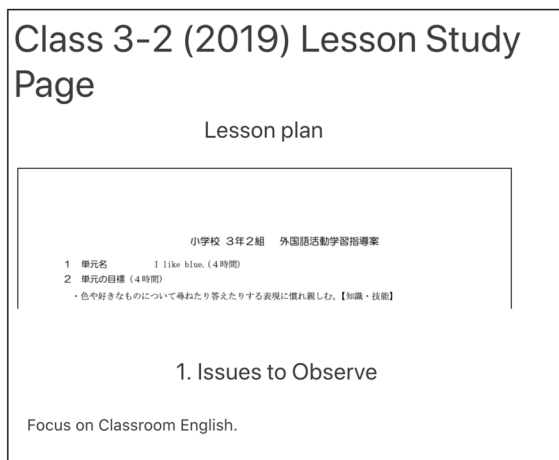
The lesson study process has five steps. Steps 1 to 3 involve planning, teaching, and receiving feedback. Steps 4 and 5 involve reflection. The first three steps from a lesson study together with screenshots from the application are shown in Figure 6. These steps show how feedback is facilitated on the LS APP making use of WordPress content management and the wpDiscuz plugin. In Step 1, a lesson study page or post is created. STs embed their lesson plan and write issues they want others to observe into the page. The *Issues to Observe* shown in the figure is classroom English. In the second step, a mock lesson is conducted and STs receive feedback from their classmates. Figure 6 provides an example of STs receiving feedback on their classroom English in the mock lesson. The feedback is written as a comment on the lesson study post. STs revise their class and then teach the lesson at a

school in Step 3. During the lesson, fellow STs, school teachers, and ETM instructors write their feedback into the LS APP. Step 3 shows a comment about STs' way of instruction and activity they conducted. In the comment form, users can choose a category for their feedback. They can also attach video or pictures to the comments. The comment shown in Step 3 has video attached.

Figure 6

Steps 1 to 3 of the Lesson Study Process

Step 1:
Create lesson study post with lesson plan and issue to observe



Step 2:
Conduct a mock lesson and receive feedback



Step 3:
Revise, teach at a school and receive feedback

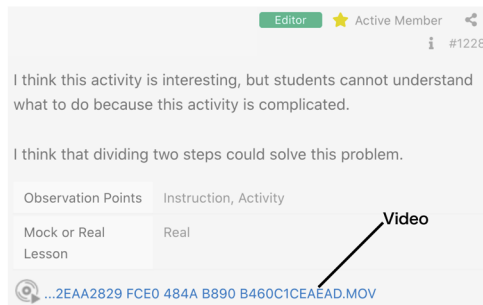


Figure 7 shows the steps related to reflection. In Step 4, a lesson study is conducted in which the comments are discussed. The screenshot for Step 4 shows a comment that was voted as beneficial by an ST. It was an observation about the elementary school students taking the lesson. STs vote comments as helpful by "liking" them. In Step 5, teachers write a reflection into their lesson study post and then write tags for the post. These tags are then related to ETM goals. Figure 7 shows that the STs summarized other people's observations as well as what they learned, and they gave advice to future members of the ETM program. They also wrote tags summarizing the content of their post. These tags were matched with ETM goals by the first author utilizing the Tag Groups plugin.

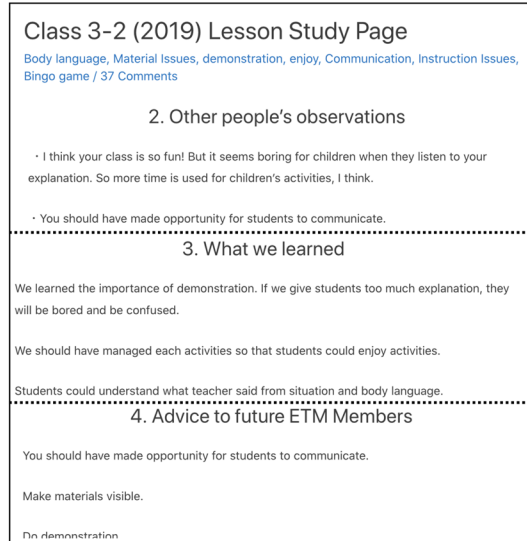
Figure 7

Steps 4 and 5 of the Lesson Study Process

Step 4:
Conduct lesson study, rate helpful comments



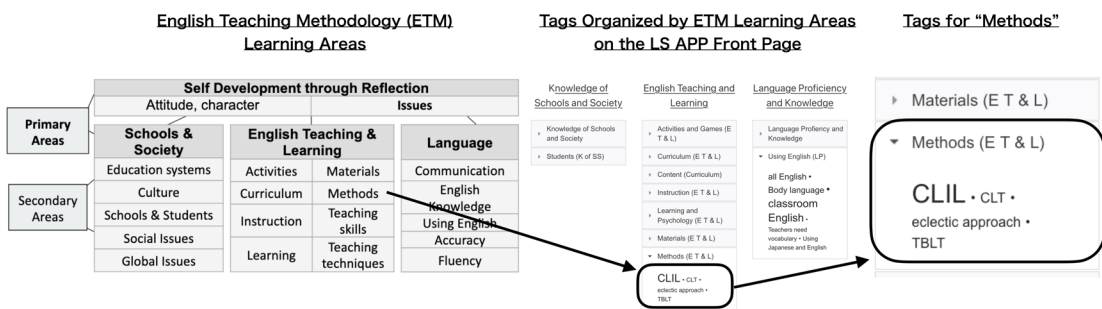
Step 5:
STs write a reflection on the lesson study page and add tags



Lastly, Figure 8 shows the learning areas of ETM I to ETM IV on the left. There are four primary areas: *Self Development through Reflection*, *Knowledge of Schools and Society*, *English Teaching and Learning*, and *Language Proficiency and Knowledge*. Each of the primary areas consists of secondary areas. The right side of the figure shows how tags are organized by ETM learning areas on the front page of the LS APP. For example, the figure shows that the secondary area *Methods* is a tag group. By clicking on *Methods*, users can see lesson study tags related to it.

Figure 8

ETM Learning Areas and Corresponding Tag Groups on the LS APP



Research Questions

Thus far, this paper has explained the goals of ETM, two issues in teacher education, and how an LS APP using WordPress was developed to address these two issues. The authors analyzed the lesson studies conducted in 2019 on the LS APP to answer the following questions:

1. To what extent does the LS APP bridge the divide between university classwork and teaching?
2. What kind of feedback on the LS APP did STs rate as being useful for their professional development?

Question 1 is clearly related to the first issue in teacher education, bridging the gap between theory and practice. For question 2, it was hoped that identifying the kind of feedback STs found useful would reveal the nature of ST collaboration as well as how STs perceived the benefits of engaging in collaborative reflective practice on the LS APP.

Participants and Data Collection

The data consist of 22 lesson study posts created in 2019, the tags written on the posts, and 1055 comments left on these posts. The comments were written by a total of 86 people, who were either STs currently taking ETM, graduate school students, or ETM instructors. Of the 1055 comments, 328 received a *like*, or were voted as beneficial by the participants. Participants were notified beforehand that their comments could be used for research purposes. When LS APP artifacts are shown, the names of the participants are hidden to protect their identity. It should be noted that participants wrote their comments with the understanding that their identity will be known to other members of their learning community, ETM program members.

Data Analysis

The tags written in the lesson-study posts were matched with ETM learning areas using the Tag Group plugin. It should be reiterated that the tags were written by the STs, but were matched to the ETM learning area by the authors. It was hoped that this would reveal what areas of learning in ETM were relevant to the STs' teaching. When lesson studies are conducted in the future, the authors plan for the STs themselves to match their tags with the ETM learning areas.

To consider the type of feedback the STs found useful for their professional development, the STs were asked to *like* (see Figure 7) any comments they found to be useful advice for improving their teaching. The 328 comments that the STs *liked* were analyzed. The 328 comments were coded inductively based on Kuckartz (2014). Firstly, the three researchers analyzed the comments or feedback given to STs during the classes and agreed on a set of codes. After that, the researchers coded the data individually, periodically comparing their codes on the feedback. Lastly, the researchers reviewed the comments together to ensure their agreement on the codes. A total of 15 codes for feedback were created. They will be

explained below. The authors gave the data one further classification: the purpose of the feedback. That is, was the feedback intended to give praise, critique the ST, or provide an observation? In summary, the authors analyzed the feedback the STs considered to be useful. The initial code revealed the content of the feedback and the second code revealed its purpose.

Findings

Bridging ETM Class Content and ST Teaching on the LS APP

Figure 9 shows the number of lesson study tags related to the ETM content areas. If a secondary area had associated tags, the names of some sample tags were written into the figure. The most frequent tags on secondary areas are those related to *Activities*. A goal of ETM is to learn various activities that STs can use in their teaching practice. An example of activities STs learned about in ETM and then actually used were role play and bingo. The second most frequent secondary area was *Curriculum*, this is largely related to lesson planning, creating learning objectives, assessing these learning objectives, and considering the place of communication in the curriculum. *Techniques* and *Issues* were the third most frequent secondary area. *Techniques* refer to ways to manage students or conduct practice activities such as chants. *Issues*, as mentioned earlier, refers to problems the STs encountered.

Figure 9

Number of Lesson Study Tags for ETM Learning Areas

		Self Development through Reflection (13)			
		Attitude, character (3)		Issues (10)	
Primary Areas	Schools & Society (10)		English Teaching & Learning (64)		Language (5)
		Education systems	Activities (20)	Materials(2)	Communication
Secondary Areas	Culture	Curriculum(11)	Methods(4)	English Knowledge	
	Schools & Students(10)	Instruction(5)	Teaching skills(7)	Using English (5)	
	Social Issues		Teaching techniques(10)	Accuracy	
	Global Issues	Learning(5)		Fluency	

On the other hand, secondary areas related to academic concepts such as *Learning* and *Methods* had lower frequencies. It should be noted that when the STs do a lesson, they are preoccupied with carrying out their lesson plan, conducting activities, and encouraging student participation. Academic concepts covered in ETM such as *Noticing* as well as *Task Based Language Teaching* (TBLT) are not of immediate relevance to STs. This reflects research findings that have found novice teachers to be more focused on the here and now or carrying out individual lessons (Richards et al., 1998).

Overall, the matching of tags and learning areas shows that STs were able to apply a

variety of practical knowledge they learned in their ETM classes to their once-a-semester teaching practice. However, academic concepts learned in ETM do not seem to be as relevant to the teaching practicum.

Types of Feedback Given on the LS APP that STs Found Useful

Table 1 shows a description of the feedback codes. In general, most of the feedback STs found helpful focused on their actions during the class. This kind of feedback was related to how STs tagged lesson study posts, which covered practical areas of the ETM curriculum.

The two most common types of feedback were about the activities done in the class and the STs' way of instruction. *Activities* expressed the observers' impressions, and often discussed how the STs could modify the activity to make it easier for students to participate in. An example of such feedback is as follows: "I think that the message game is a little difficult for children, especially, the two sentences. They are difficult even for us. So, I think either the activities or sentences have to be changed" (Edited for clarity by the authors).

Table 1

Codes and Frequencies (N=328)

Feedback Code	Description	Frequency
Activities	About a class activity.	65
Instruction	Critiquing the STs' instruction.	58
Overall	About the entirety of the lesson.	44
Using English	About ST's use of English.	35
Students	An observation focusing on the students.	28
Picture	A picture is attached to a comment with a caption.	22
Lesson flow	About the overall lesson flow.	19
Materials	About any materials used for teaching.	13
Video	A video is attached to a comment with a caption.	10
Attitude	About the attitude exhibited by the STs.	7
Objectives	About the goal or objective.	4
Philosophy	About the ST's teaching philosophy.	3
Self-reflection	Self-reflection of the ST.	2
Lesson planning	About lesson planning.	2
Encouragement	Intended to encourage the ST.	1
N/A	Cannot be given a code.	15

Instruction was feedback on how an ST demonstrated or explained language or a classroom procedure. An example is as follows: "When you explain how to play the Leap Frog Game, you should tell students the procedure of the game (e.g. "First, read the cards. Second, etc...)." Often, *Activity* and *Instruction* feedback would co-occur: the commenter would discuss both an activity as well as how the ST demonstrated or explained the activity.

The following comment has both elements: “Activities were very interesting! You all have to use more gestures to explain because some of the words were difficult for students” (Edited for clarity by the authors).

Although the above comment was coded as *Activity*, it could have also been coded as *Instruction*. Therefore, rather than concluding that the most frequent comment was about *Activity*, it is most appropriate to say that feedback on activities and/or instruction was most frequent.

Using English referred to the STs’ ratio of L1 to L2, possible mistakes the ST made, suggestions about language they can use, or complimenting their English usage. The following comment is an example: “It was good. Classroom English was good too, but a little difficult for elementary school students, I thought. You can use easier English and speak more slowly with many gestures and feelings” (Edited for clarity by the authors).

Feedback coded as *Activities*, *Instruction*, *Using English*, *Materials*, *Attitude*, *Philosophy*, *Lesson-planning*, and *Encouragement* focused exclusively on the ST’s behavior, actions, or work. Other comments, however, served to inform the ST about other aspects of the class. Comments coded as *Students* focused on the behaviors and characteristics of students. Their purpose was to share observations about the students that the STs might not have noticed or recommend better ways to manage the students. The following comment was coded as *Students*: “Almost all the students understood the rules and were diving into the activity. It looked like a lot of fun” (Translated by the authors).

The *Picture* and *Video* codes show that feedback was not only in the forms of written comments. Observers posted audio-visual material as comments to show how STs were teaching, students’ actions, classroom layout, or student work. Thus, often, the multimedia comments served to inform STs about what was happening in the classroom.

Overall was the third most-frequently voted of all the feedback codes. While comments like *Activities* tended to be written during a lesson, *Overall* tended to be a cumulative set of observations written at the end of the lesson or after it was finished. Many of the overall comments were organized, starting by praising and, after that, critiquing an ST’s class. They also were written from the perspective of both the teachers and students. The one individual comment that received the most votes from STs as being helpful (5 votes) was classified as *Overall* it reads as below:

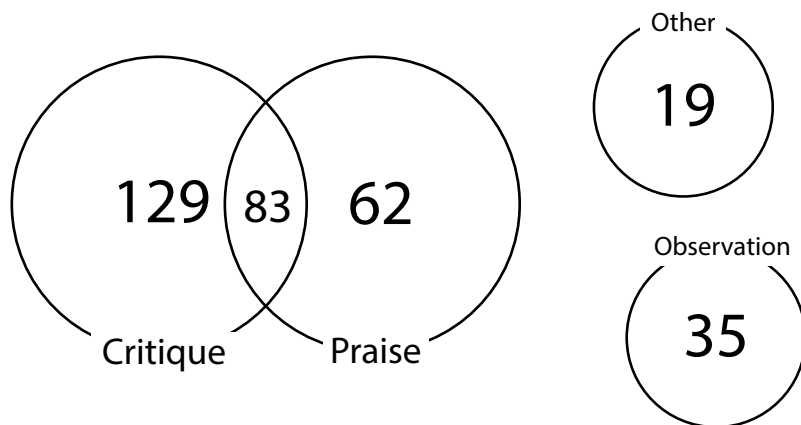
Good job on your lesson! I liked how you taught the class with a smile. In terms of lesson flow, I thought it was a little sudden how you went from presenting the goal to practice. Also, the goal was not so clear. The practice activities were connected with the main activity in that students practiced many words they would need to use. For a good lesson flow, you need to make it clearer what you expect the students to get out of the activities and encourage students to think “I want to get better at this; I want to learn how to do this!” during the activities (Translated from Japanese by the authors)

Figure 10 is a Venn diagram which shows how the purpose of the different feedback comments were coded. This diagram shows that *Critique* comments had the highest frequency of helpful votes, or 212, which constituted two-thirds of all feedback voted as helpful. It is noteworthy that the STs found negative feedback to be helpful. However, it should also be noted that negative feedback was often combined with praise. There were 83 comments

that were coded as both *Critique* and *Praise*. The implications are that STs are receptive to negative feedback, but further inquiry needs to investigate why and the characteristics of negative feedback found helpful by STs.

Figure 10

A Venn Diagram of the Purposes of the Feedback (N=328)



Discussion

LS APP as a Means of Bridging the Theory and Gap Divide

This section discusses the potential of the LS APP to bridge the gap between teacher education and the actual classroom as well as some issues. The findings show that the LS APP could be used as a tool to gauge which ETM areas were relevant to the STs' teaching practice. This can provide opportunities to improve the course program. By knowing which ETM areas are being overlooked in the lesson studies, the instructors can reconsider how they are introduced in ETM or ask STs to consider these areas in Steps 4 and 5 of the lesson study process.

As mentioned earlier, although the STs were writing the tags into their lesson study posts, it was the first author who matched the tags with ETM learning areas. Because one of the purposes of the LS APP was to help students develop their own praxis, or theory-informed-practice, this was a major issue. In future uses of the LS APP, the STs themselves will match their tags with the learning areas. Farr and Riordan (2017) argue that novice teachers need support in being able to relate theory and practice, it does not come naturally. Therefore, the tagging feature will not serve its purpose without guidance. One possible way for supporting STs is having them tag their lesson study posts in groups and discuss the rationale for the tags that they chose. Another way is to have STs read previous lesson study posts and discuss the relationships between the tags on the post and the content.

Another issue was not in the tags themselves but rather in the lesson study post content. Some of the reflections in the Lesson Study pages need to be written in more detail so that the reader can better understand the concepts represented by the tags. Sometimes, a tag

was barely discussed in its lesson study post. Overall, tagging shows the potential of the LS APP tagging system to help STs reflect on their praxis, but use of the LS APP should be improved to actualize this objective.

LS APP as a Means of Encouraging Collaborative Reflective Practice

In this section the authors will discuss both the potentials and limitations of the LS APP for encouraging valid collaborative reflective practice. The potential of the LS APP lies in the volume of feedback that was communicated as well as the type of data that was uploaded. It was discussed at the beginning of the paper that one of the issues with reflective practice is that reflection tends to be subjective and solitary. The STs were able to learn the perspectives of a number of different observers from reading the comments. Furthermore, tangible data such as pictures and video could serve as evidence to support the observers' assertions. Thus, overall, it can be concluded that the STs were able to see their lesson through the eyes of others.

Another potential is the systematic nature of the process. All ETM members follow the five steps of the LS Process, in which they receive feedback at two different steps and reflect at the end of the process in Step 5. They also have at least three opportunities to undergo this process in the ETM Program. The LS APP puts this process online as it archives the lesson study posts, comments, and media given in each stage. Therefore, the LS APP supports ETM members long-term systematic reflection over the span of 2 years.

The last potential is for making university teacher education more practical. Collecting lesson study comments over time can reveal the kinds of practical issues that STs are likely to have when teaching. These practical issues can, in turn, be incorporated into the teacher education curriculum.

The primary limitation is the challenge in giving feedback during a lesson. Previous research on fieldwork in education has shown that taking notes while observing a class is an acquired skill (Hall, 2017). Furthermore, writing observations into the LS APP interface using tablet or phone, a medium for classroom observation to which STs might not be accustomed, is even more challenging than conventional notetaking (Hall, 2019). It is the authors' experience that for some STs, and even some instructors, giving feedback using a device during a lesson is not possible. One way to address this issue is to give STs more opportunities to practice writing comments before the lesson studies. Another way is to explicitly give STs the option of writing comments at the end of a lesson if they prefer to concentrate solely on observation during the lesson.

Conclusion

The primary purpose of this paper has been to describe the development of the LS APP. The secondary purpose has been to show the type of findings that can be gathered through collecting data from the application. This paper first introduced two issues in foreign language teacher education: 1) bridging the gap between what is taught in university language teacher education programs and actual school classrooms, and 2) promoting valid and collaborative reflective practice. It then showed how WordPress content management

functions and plugins can be used to create a Lesson Study APP to address these issues. First, it showed how post tags with the Tag Groups plugin can be used as a means to bridge the gap between the university and school classroom and improve teacher education curricula. It also showed how utilization of the wpDiscuz plugin enabled users to provide feedback addressing specific issues and provide support for their observations by attaching videos or pictures.

When analyzing the tags left on lesson study posts, it was discovered that ETM members tended to link their teaching experiences more with developing skills in instruction and learning how to do activities and less with concepts learned in the ETM class such as noticing. This is to be expected given that ETM members are experiencing teaching for the first time and their immediate needs are to develop the practical skills necessary to do a lesson. Linking classroom instruction with theory does not come naturally, and STs will need more guidance on this. It can be said that the LS APP can be used as a tool to help STs link classroom instruction with concepts, but that they will need help in learning how to use the tool.

Through analyzing the votes on comments, the authors were able to ascertain that ETM members found feedback on how they conducted activities, their instruction, and English to be beneficial. 212 of the 328 comments found helpful contained some form of negative feedback. There were two ways in which ETM members wrote feedback to one another: commenting while observing as well as writing a long comment after the lesson. The latter, which was categorized as *overall*, had a high frequency of likes. Writing one's comments while observing a class is an acquired skill which requires some training.

This study has several limitations. First, the authors analyzed the type of feedback STs found beneficial through their votes, but a questionnaire asking STs about their experience giving and receiving comments could have confirmed the STs' preferences. Second, a primary purpose of the LS APP is to encourage STs to link ETM class concepts with their experiences. However, it was the authors who actually did this. At the end of 2020, the authors plan to have STs link their experiences with ETM learning areas in the LS APP and answer a questionnaire about using the tag groups plugin. Lastly, analysis of the comments show that the authors need to better promote feedback and reflection that goes beyond activities and instructional techniques. The LS APP is a tool with potential, but the quality of the teacher education program and the guidance provided to STs will determine its success.

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Authors’ Bios

James M. Hall is an Associate Professor at Iwate University and is involved in pre-service English teacher education. He has taught in Japan for almost 20 years. His research

interests include ICT in English teacher education and ethnography for understanding teacher development.

Kodai Tamura is currently a graduate student at Iwate University Graduate School of Education. He began to use a Windows 95 laptop when he was four years old. He currently majors in English education, and his research interests are CALL, lesson study, and the possibility of using ICT in public schools of Japan.

Shuhei Kumagai is currently a graduate student at Iwate University Graduate School of Education. He has specialized in English education for 6 years and has experience teaching at a Japanese high school and a Nepali school. He is also interested in deaf education to empower deaf and hard of hearing people.