Research paper

Flipped learning in an EFL environment: Does the teacher's experience affect learning outcomes?

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Abstract

In this paper, the authors discuss the findings of a quasi-experimental study of the flipped learning approach in an EFL environment. The authors investigated the composition-writing proficiency of two groups of Japanese university students (n = 38). The teacher of one of these groups had had much experience teaching with the flipped learning model, whereas the other teacher had had no experience. The first aim of the study was to discover if improvements in writing proficiency could be observed within each group. The results indicated that statistically significant improvements were seen both for students studying under a teacher with experience conducting flipped classrooms, $t(16) = 4.80$, $p < .001$, $d = 1.27$, and a teacher without flipped classroom experience, $t(20) = 7.73$, $p < .001$, $d = 1.61$. The second aim of the study was to investigate whether any differences in improvement between the two groups occurred. The results suggested that students in both groups improved at similar degrees: $F(1, 36) = .087$, $p = .77$. These results suggest that regardless of a teacher's experience with the flipped learning approach, it appears to be a successful way of teaching in EFL environments. The authors conclude that, regardless of the teacher's experience with the model, the flipped learning approach is an ideal way to increase the amount of individual coaching possible in the classroom, bringing about more efficient learning.

Keywords: Flipped learning, writing, proficiency, university students, learner agency.

1. Introduction

The increased possibilities for creativity that come with Web 2.0 have generated much interest among EFL researchers and educators, especially in the field of computer-assisted language learning (CALL). The use of blended learning (i.e., integrating the utilization of the Internet into regular classroom environments) has especially grown in popularity over the past decade. The flipped classroom, one example of blended learning, has also received much attention from a wide range of scholars. In the flipped classroom, teachers' explanations of the content of the textbook or grammar points, for example, that would normally be given during class time are provided for students usually through some medium requiring use of the Internet. Because the students have already listened to their teachers explaining what was to be studied during class, more time is available for students to do practice exercises and tasks under the direct supervision of the teacher. With individualized instruction being an essential aspect of education (Keefe, 2007), it is vital that teachers look for ways to increase the possibility of making this a major part of their classrooms. The increased opportunity for personalized coaching which comes with the flipped classroom is perhaps the greatest benefit of this approach to teaching. Table 1 displays a simplified comparison of the learning structures of a traditional class and a flipped class as used in the present study.

Table 1. A diagram comparing the students' activities before, during, and after class in a traditional and flipped classroom

	Before class	During class	After class
Traditional learning	Students prepare for class alone	Students listen to the teacher explain lesson content	Students do practice exercises alone
Flipped learning	Students watch a video explaining lesson content	Students do practice exercises under the teacher's supervision	Students review based on the teacher's advice

In this paper, the authors describe the adoption of the flipped classroom model in two separate classrooms with two different teachers. The first aim of the study was to reinvestigate whether using the flipped learning approach would bring about increases in students' EFL composition writing proficiency. Second, the authors looked at whether there were any differences in the levels of improvement between the two groups. The teacher of one group of students had had a wealth of experience with the flipped learning model and created the videos being used in this study. The other teacher had had no experience with the flipped learning model. Therefore, the authors wished to investigate whether the students in both groups would see similar increases in proficiency. If this could be achieved, it could be concluded that the flipped learning model is indeed effective, regardless of the experience the teacher has had with this approach to foreign language education.

2. Literature review

Although the concept of flipped learning has been around for many years, it has only been in the last few years that it has increased in popularity. In some of the earliest reports on the advantages of providing students with guided class preparation, Mazur (1997) and later Crouch and Mazur (2001) described physics classes in which students were given the teacher's lecture notes one week before the actual lecture. Then, after the students were given a short quiz to confirm their understanding of the content of the lecture notes, most of the class time was spent on discussions, with the lecture notes that had been distributed to students being viewed as guides to assist students as they prepared for each lesson. This approach of providing more guidance as students prepared for class, coined *classroom flip* by Baker (2000) and *inverted classroom* by other researchers (e.g., Lage, Platt, & Treglia, 2000), has allowed for communication between teachers and students to go beyond the constraints of the classroom, thus setting the tone for educators in the early years of the twenty-first century.

In 2012, the idea of flipped learning rapidly increased in popularity as knowledge of the teaching approach spread through various media such as the book *Flip your Classroom* (Bergmann & Sams, 2012) and the online teaching resource, Khan Academy. Since then, there has been a gradual increase in the amount of research focusing on the effects of the flipped classroom in an EFL environment. One of the earlier works by Brinks Lockwood (2014) used videos and lesson materials related to topics studied in class to create a flipped learning environment in her classroom. Using previously prepared materials and publicly available videos reduced the burden on the teacher. In some ways, this answers one weakness of the flipped learning model, that is, the length of time it can take to create materials for the flipped classroom, which has been described in previous studies (e.g., Leis, Cooke, & Tohei, 2015).

Other studies in an EFL environment have looked at changes in classroom atmosphere and students' attitudes as the result of studying under the flipped learning method. Mehring (2015), for example, conducted interviews with students to investigate their opinions of learning English in a flipped classroom. He suggested that more opportunities for active learning were made possible in comparison to those available in traditional classrooms. This was due to the extra time available during the classes that had been used for explanation of the textbook content in traditional environments. Forsythe (2016) had similar positive arguments for the flipped approach, suggesting

that it promoted autonomous learning, with students being free to choose where and when they wanted to listen to and watch the teachers' explanations. Lee and Wallace (2017) suggested students studying English in South Korea under the flipped learning approach liked this way of learning English due to the control they had over how they prepared for class and the increased time to use English during class. Only 10% of students in the flipped classroom of Lee and Wallace's study expressed dislike of this method, claiming it gave the students too much homework and was too difficult compared to the traditional way of teaching. The majority of the students in their investigation said that the flipped classroom was fun and showed gratitude for the efforts exerted by the teachers to make the videos. Leis (2015) suggested similar appreciation had been demonstrated by students in his study. He reported that students were more highly motivated to study harder due to the efforts of their teacher in creating the videos for class: "I understood how hard my teacher worked to create the videos for the class, so I felt a responsibility to work hard with my study." Whether similar efforts would be seen by students studying in a class in which the videos used were not created by their regular teacher will be one of the focuses of the study described in this paper.

Although the amount of literature on flipped learning in the EFL environment is gradually increasing, there is, as suggested by Lee and Wallace (2017), still a lack of studies investigating its effects on students' proficiency. In another study conducted in Taiwan, Hung (2015) concluded that students studying under the flipped learning approach tended to perform better than those who were not. However, the time span for Hung's study was very short (i.e., three lessons in six weeks). This is much shorter than one full university semester (i.e., 15 weeks), which has been suggested as the minimum period for which significant improvements in linguistic performance and motivation can be expected to be seen (Sasaki, 2011).

There are, however, a few studies that have looked at the effects of flipped learning on linguistic proficiency for a full university semester. In Lee and Wallace's (2017) study, statistically significant improvements in proficiency were only observed for the flipped learning group in the end-of-semester tests and one of their writing assignments. One of the reasons suggested for this was that many East Asian students tend to prefer the passive style of learning that is seen in traditional classrooms. Leis (2016), for example, suggested that students' self-perceived proficiency (i.e., linguistic confidence) increased under the flipped learning method. This was because students were able to prepare better for discussions that were going to be held in the class by watching the videos with teachers' explanations. Furthermore, Leis (2015) and Leis, Cooke, and Tohei (2015) provided empirical evidence to support the notion that the use of flipped learning brings about significant improvements in linguistic proficiency in English composition classes in comparison to the traditional classroom. It was argued that combinations of the freedom of when and where to watch the videos, the closed captions used in the videos, and the individual instruction that came with the flipped learning environment influenced increases in proficiency. In the present paper, the authors aim to add further evidence concerning the effects on students' proficiency when studying in a flipped classroom, as well as investigate any differences that may occur depending on the teacher's experience with the flipped learning model.

3. The Study

3.1. Participants

A total of 38 second-year Japanese university students studying at two separate institutions participated in the study. Because they were studying at two different institutions, the authors were unable to create groups of statistically equal proficiency based on a pre-test. Both groups studied English composition under the flipped learning model. Ideally, a comparative investigation of two (or more) English composition classes with one conducted in a flipped environment and the other in a traditional manner would give a more precise indication of whether the flipped learning approach is successful or not. However, in this investigation, neither class was taught in the traditional manner because one of the authors had previously conducted studies comparing the flipped and traditional approaches in English composition classes (e.g., Leis, Cooke, & Tohei, 2015). In all of the studies, the flipped approach proved to be

more successful. Thus, in order to provide what was thought to be a more effective teaching approach, both groups were taught in flipped classrooms. Furthermore, the focus of this study was on whether a teacher who had had little to zero experience with the flipped learning model could see similar improvements in his/her students as a teacher who had had much experience.

Table 2. Descriptives of participants in the present study	NFE	FE
Majors	Education	English
N	21	17
Experience with flipped learning	None	None
Age	19.21	19.25

Table 2 displays descriptions of the participants. The group whose teacher had had experience with flipped learning and created the videos used throughout the course was given the title of Flipped Experience (i.e., FE). The second group, whose teacher had had no experience with flipped learning and had not created the videos to be used was named No Flipped Experience (i.e., NFE). None of the students had had experience of studying in a flipped learning environment. All of the students in the FE group were English majors, and the English composition course used for this study was compulsory for graduation. All of the students in the NFE group took the English Composition course as a requirement for gaining a teaching license.

3.2. Methodology

The present quasi-experimental study was conducted over a 15-week English composition course at two separate Japanese universities. Although, as the authors admit, a quasi-experimental design is not ideal for a scientific investigation, due to the lack of randomness in choosing the subjects for the study, because the distance between the two universities at which participants in the study attended was more than 1000 kilometers, it was not practical to use a pure experimental design. The courses included orientation in the first week, a mid-course review test in the eighth week, and a final review test in the final class. Because the teachers wanted to provide students with an ample input of compositions, a reading textbook was chosen for the course with explanations of the structure of English compositions being given based on passages appearing in the textbook.

In Week 1 of the study, the participants were asked to write compositions for homework based on the theme, "An event I participated in during high school." The students were then given English compositions on various topics throughout the course (e.g., recipes and historical characters). Then in Week 14 of the course (i.e., the week before the final review test), the students were asked to write compositions on the same topic as Week 1. Because the researchers wanted to focus on writing proficiency, rather than writing fluency, compositions were given to students as homework tasks to be completed before class rather than during class under time constraints. Table 2 displays a summary of the recommended weekly study schedule given to students at the beginning of the courses.

Table 3. The weekly preparation schedule recommended to students in this study							
Day	1	2	3	4	5	6	7
Plan	Watch video with captions	Submit vocabulary homework	Watch video with captions	Write first draft	Watch video without captions Check draft	Check draft	Attend class

The teachers of both groups in the study followed a similar lesson plan. First, confirmation and explanations of any difficulties that were observed with homework were given, before a brief summary of the video content that students would have watched before the class. After this, students worked in pairs or small groups to check each other's compositions, creating a peer-coaching environment. During this time, the teacher walked around the classroom, giving individual instruction to students to assist them with improving their composition proficiency. Finally, the teacher gave feedback to students based on any reoccurring difficulties that were noticed during peer-instruction time and made sure students were aware of what they needed to do to prepare for the following lesson. Table 4 shows an example of a summary of the 90-minute lesson structure used by the instructors of the NFE and FE groups.

Table 4. The structure of an example lesson taught in the courses described in this study

Time	5	10	10	60	5
Plan	Greetings and confirm class goal	Discuss homework submitted by students	Summary of the video students had watched before class	Students give peer-coaching on essays while the teacher gives individual instruction where needed	Remind students of the topic for the following lesson

Analyses for this study were conducted in a pre-test-post-test design. Three independent teachers of English who were unaware of the purpose of the study gave scores for the Week 1 compositions (i.e., Pre-test) and the Week 14 compositions (i.e., Post-test). The compositions were evaluated using rubrics created by the teacher of the FE group, which were used for feedback throughout the entire course by both teachers. The rubric included five criteria (i.e., introduction, body, conclusion, content, and accuracy), with each having a maximum score of five, giving a maximum total score of 25 for each composition. A Cronbach's Alpha Reliability Analysis was conducted using SPSS Version 23 to compare the scores provided by the three evaluators and was deemed appropriate for statistical analyses (i.e., $\alpha = .95$). Also, in order to gain students' opinions regarding the use of the flipped learning approach, the authors asked students for their views regarding this way of learning how to write English compositions. These responses were not compulsory, and of the 38 participants in the study, the authors received feedback from only five. Details regarding the statistical analysis will be reported in Section 4 of this paper.

3.3. Research questions

In this study, the authors aimed to gain a deeper understanding of the following research questions (RQs):

RQ1. Does the Flipped Learning approach lead to significantly higher proficiency?

RQ2. Are there any significant differences in improvements in proficiency between students studying under the Flipped Learning approach with different teachers who have different amounts of experience with flipped learning?

Based on the results of previous studies (e.g., Leis, Cooke, & Tohei, 2015), the authors hypothesized that the overall English writing proficiency of subjects would increase significantly. Furthermore, it was predicted that similar improvements would be seen by students, regardless of whether the videos being viewed by the students were created by their teacher or not. Although the narration in the videos would have been an unfamiliar voice for the students in the NFE group, as one of the authors suggested before the study, this was not unlike using regular textbooks written by authors unknown to the students. Therefore, even if the teaching materials have not been prepared by the person teaching in the classroom, similar results should be observed if two different teachers are using the same materials in a similar way.

4. Results

The first research question asked whether studying under a flipped learning approach leads to significantly higher proficiency in English composition. Paired-samples *t* tests were conducted to measure the statistical differences between the pre-test and post-

test for the NFE and FE groups. Analyses showed that significantly significant improvements in proficiency with strong effect sizes and no overlaps in the 95% Confidence Intervals (95% CI) at the post-test in comparison to the pre-test had been achieved for both the NFE group, $t(20) = 7.73$, $p < .001$, $d = 1.61$, and the FE group, $t(16) = 4.80$, $p < .001$, $d = 1.27$. Table 5 and Figure 1 display the composition proficiency scores.

Table 5. Composition proficiency scores in the present study

Group	Test	Score	SD	95% CI
NFE	Pre	9.89	3.79	8.16, 11.61
	Post	16.81*	4.74	15.31, 20.18
FE	Pre	7.31	3.72	5.40, 9.23
	Post	14.29*	6.82	10.79, 17.80
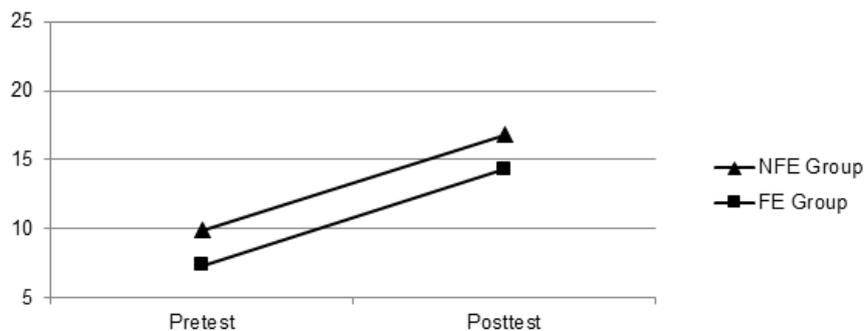
Figure 1. Changes in proficiency of the NFE and FE groups in this study.

In the second RQ, the authors compared the post-test scores for the NFE and FE groups to measure if any differences in proficiency would be seen when studying under different teachers using the same teaching material. First, an independent-samples t test was conducted to investigate if any statistically significant difference existed between the two groups at the pre-test stage. The results were that the NFE group had higher proficiency (i.e., 9.89) at the pre-test stage, $t(36) = 2.10$, $p = .043$, than the FE group (i.e., 7.31).

Because there was already a statistically significant difference between the two groups at the pre-test, it is possible that any difference observable at the post-test may be due to some factor not related to flipped learning at all. Therefore, conducting an independent-samples t test at the post-test stage may bring unreliable results. To avoid this, the authors used an Analysis of Covariance (i.e., ANCOVA), to compare the data under the presumption of identical scores at the pre-test stage. Larson-Hall suggests an ANCOVA as a statistical analysis to use when "there is some external factor, such as pre-test or TESOL score, which will affect how your students will perform on the response variable" (2010, p. 357). Furthermore, Loewen and Plonsky (2016) suggest that the ANCOVA is often used in SLA research, especially in quasi-experimental designs, as is seen in the present study. This analysis has been used in various studies of second language acquisition (e.g., Fraser, 2007; Larson-Hall, 2008; Lim & Hui Zhong, 2006; Lyster, 2004) in order to remove any differences observed at the pre-test stage. The study by Lim and Hui Zhong (2006), for example, comparing a regular reading class and one conducted in a CALL environment, especially resembles the study described in the present paper as it found statistically significant differences in the pre-test scores. It was therefore deemed satisfactory by the authors of this study to run an ANCOVA to

give an accurate indication of the performance of both groups, even though statistical differences had been observed in the pre-test.

The ANCOVA was conducted with the pre-test scores adjusted to 8.74. The ANCOVA result showed that at the post-test stage there was no statistically significant difference, $F(1, 36) = .087$, $p = .77$, between the NFE group with an adjusted post-test score of 15.91 and the FE group with an adjusted post-test score of 15.40. Thus, it can be concluded that regardless of the experience the teacher has with flipped learning, there appear to be no major differences in the effects on students' learning.

5. Discussion

The authors of the present paper had two principle objectives in this study: 1) to add depth to the current lack of evidence concerning the effectiveness of flipped learning on improving students' proficiency, and 2) to discover whether students studying under a language teacher who had little to no previous experience with the flipped method would see similar benefits to those studying under a teacher who had had experience and had created the materials that were used in both classes. The results suggest that using the flipped learning method in an EFL composition class assisted in producing statistically significant improvements in students' proficiency, regardless of who was teaching them. The authors will now discuss possible reasons for these results.

First, as mentioned earlier, the availability of explanations of the lesson content online enabled students to view and review the videos at any time and place they wished. This may have promoted autonomy among the students. Autonomy has been defined as "the capacity to take control of one's own learning" (Benson, 2011, p. 58). By giving learners the choice of where, when, and even how they wish to view the teacher's explanation, students in a flipped learning environment may receive such freedom. It has been shown in earlier studies that students' linguistic proficiency may improve when they become autonomous in their learning (Dam & Legenhausen, 1996). However, it is imperative that teachers still be part of this learning process. As Little (1990) explains, autonomy is not merely self-instruction. It still requires input from the teachers. Holec (1981) suggests that for students to be described as autonomous, they need to be taking charge of decisions related to various issues, such as objectives, content, learning techniques, and evaluation. Although flipped learning may not, admittedly, result in students who are autonomous to the degree Holec suggests, it still appears to give students a sense of agency, giving them the feeling that they are in charge of some aspects of their learning.

Second, the use of closed captions and animation, and the capability to re-watch parts of videos that were difficult for students to understand, may have enhanced their comprehension of the content. Japanese students are often described as shy and hesitant to participate actively in language classes, for reasons such as saving face (Harumi, 2011), a lack of self-confidence (Anderson, 1986), and a decline in motivation to study English (Matsukawa & Tachibana, 1996). Therefore, in a traditional classroom environment, it may be unlikely that students would raise their hands to ask teachers to repeat something that had been said or clarify points that had not been understood. The videos used for the flipped classroom described in this study included a variety of features that have previously been shown to improve student listening comprehension, such as closed captions (e.g., Perez, Norgate, & Desmet, 2013; Lee, 2017) and animation and annotation (e.g., Yang & Chang, 2014). Feedback from one student from the NFE Group gave support to the use of closed captions, mentioning that having the closed captions made the videos easy to understand. Because the same videos with the same closed captions were used for both the NFE and FE Groups, students were able to study under the same conditions, thus explaining the similar increases in proficiency of the students.

Third, the flipped learning approach enabled more individual coaching for students by the teachers. In traditional classrooms, teachers waste too much time giving explanations of the textbook (Mazur, 1997). This reduces the number of opportunities for students to receive personalized feedback from their instructors, which would normally allow them to focus on their weaker points and their misunderstandings of the lesson content. In this age, it is no secret that students learn in different ways. Thus

one of the principle goals of teachers should be to give as much attention as possible to each individual student in the classroom (Keefe, 2007). Teachers, however, do need to be aware of the dangers of providing too much care, as students may become reliant on their instructors, forgetting that learning is a lifelong task, and their mentors cannot always be by their sides to help them in tough times. The flipped learning model appears to provide an ideal balance of giving students a sense of agency, thus promoting a degree of autonomy, but at the same time allowing teachers the opportunities to attend to their students' individual needs.

6. Pedagogical implications

Flipped learning appears to have resulted in increased writing proficiency, regardless of the instructor's experience with the teaching model. This does not, of course, mean that teachers do not have any influence on learning, and thus are not necessary in a flipped learning environment. On the contrary, it could be argued that the teachers are the most vital aspect of the learning process in the flipped classroom; they provide the necessary personalized coaching for students that is made more possible within such a learning environment. Teachers who are not experienced with the use of computer technology or the flipped learning approach may feel overwhelmed when incorporating this way of instruction in their classes. Based on the results of this study, and previous research, various pedagogical implications can be discussed for language instructors, both experienced and new to the flipped learning idea.

First, some of the videos used in this investigation seem to have been too long. Due to the limited concentration spans of students, Bergmann and Sams (2012) recommend that videos be no longer than 10 minutes, and in cases in which the videos are longer than this, they should be broken up into two or more shorter videos of around 5 minutes. Although the teacher who was creating the videos did attempt to keep them as brief as possible, some videos were longer, with the longest one being close to 15 minutes. This was recognized by at least one student in the feedback at the end of the course: "Sometimes there was too much information in the videos, so I want the teacher to consider this in the future." It is recommended that teachers new to the flipped learning approach make an extra effort to keep the information in the videos as concise as possible.

Second, it may be effective for the person giving the explanations and creating the videos for the flipped classroom to meet the students who are taking the lessons. While this may be difficult in cases, as with the present study, in which the creator lives a long distance from the students, a short greeting or introduction, for example by using online video chat sites, may increase the familiarity students feel with the explanations. Although similar increases in proficiency were seen for both groups in this study, there were times during class when the teacher of the NFE Group referred to the FE teacher (i.e., the teacher who created the videos). If the students of the NFE Group had had some personal interaction with the FE Group teacher, they might have felt more comfortable with the "semi-team-teaching" learning environment at an earlier stage.

Third, as suggested by Lee and Wallace (2017) and mentioned previously in this paper, the number of studies focusing on the flipped learning model is still remarkably low. There is still a need for investigations that compare increases in proficiency (or lack thereof) while conducting comparisons of the same learning content in a flipped classroom and a traditional one. As mentioned earlier in the paper, some studies have focused on this, but much more research is necessary to strengthen the support for flipped learning while also identifying possible weaknesses with the approach.

7. Conclusions

The results of this study suggest that the flipped learning approach is effective for improving students' English composition skills, regardless of the experience of the teacher. The study is, however, limited by a number of weaknesses.

First, the discussion of the results in this study is, admittedly, purely based upon the analyses of the data. Although the students were asked to voluntarily share their opinions about the flipped learning model, very few students, in fact, gave responses. Initially, it was thought by the authors that if students were required to give feedback, they might not give their true opinions, but just write what they felt the researchers

wanted to hear. In future studies, it will be beneficial to use a mixed-method approach by including, for example, interviews in the process of gathering data. Through the interviews, the researchers will be able to obtain qualitative data to support and strengthen the ideas discussed in this paper regarding agency and autonomy. Furthermore, interviewing students might give researchers a clearer answer to the chief question of this study of whether the amount of experience the teacher has with flipped learning influences the amount of success students have in their learning.

Second, an analysis of the compositions and the type of language being used throughout might have given the researchers an insight into improvements in the quality of the students' writing. Even though a rubric was provided for the markers of the compositions in this study in order to get reliable evaluations, it would be beneficial to also consider online analyses of the compositions to objectively test the content. Readability formulas, such as Gunning Fog and Flesch Reading Ease, may provide further independent indications of developments in students' writing quality as a result of studying in a flipped learning environment and whether these improvements, or lack thereof, differ depending on their teacher.

The flipped classroom approach has proven, in the majority of cases in which it has been tested, to be highly successful in improving the positivity with which students approach their learning. Although this has been investigated in many fields, especially science, mathematics, and medicine, there has been a gradual increase in the literature supporting the use of flipped learning in the field of second language acquisition. In the present study, the authors have attempted to provide further evidence as to whether the flipped learning approach brings about a significant increase in the EFL composition proficiency of university students. The results have indicated that it was successful, not only for students studying under a teacher who had ample experience of the flipped learning model but also for those whose teacher was using this approach to teaching for the first time. With further investigations concentrating on the effects of the flipped learning approach on students' proficiency, motivation, and attitudes to learning, more hints may become clear for language teachers to conduct their classes in the most effective and efficient ways possible.

Acknowledgements

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