



The Effect of Flipped Learning Using Multimedia on Learners' Academic Achievement, Intercultural Competence, and Autonomy*

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Despite the advantages of flipped learning, there are concerns regarding its feasibility in actual classrooms. To address these concerns with the intention of keeping a practical approach to making flipped learning feasible through easing the burden on teachers and students in mind, the study aims to investigate the beneficial effects of flipped learning on three aspects: learners' academic achievement, intercultural competence, and autonomy. Fifty-eight English major students at an intermediate level who were taking a class 'Multimedia English Education' at a university participated in flipped learning in the study. Based on data obtained from two sets of paper-pencil type of questionnaire for intercultural competence and learner autonomy and two academic tests (mid-term and final exam), comparisons between pre- and post-flipped learning were made. The results suggest a positive influence of flipped learning on the development of intercultural competence and learner autonomy. However, the effect of flipped learning on academic achievement did not reach statistical significance. Based on the findings, the study also provides pedagogical suggestions for a successful implementation of flipped learning in English classes.

Key words flipped learning, multimedia, intercultural competence, autonomy, academic achievement
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I. INTRODUCTION

In the annals of teaching and learning corpus, a plethora of suggestions can be found in pursuit of better ways of teaching. In particular and in order to overcome the limitations of conventional teaching methods, educators and learners have acknowledged a need for a change

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from a one-way lecture that lacks learners' active participation toward a class that promotes self-directed learning, and motivation.

It is along this movement in the education field that flipped learning has been introduced in classes. The advantages of flipped learning have been reported (e.g., English achievement in W. Kim, 2018 and Yim & Rha, 2017; psychological benefits in Lee, 2015); however, there have also been concerns regarding the feasibility of introducing flipped learning into actual classrooms. For example, Taylor (2015) warned that a burden of extra work in flipped learning may be imposed on teachers who already feel overtaxed. In the same vein, Song (2019) pointed out that unsuccessful implementation of flipped learning may overload learners with take-home assignments.

Taking those concerns into consideration, educators would search for better and practical ways that makes the flipped learning approach realizable in many classrooms. To this end, the present study intends to ease the burden on teachers by utilizing video clips and materials available on the internet instead of creating online lectures that are unduly imposed on teachers. For learners who are prone to tedium with assignments involving repetitive, mechanical, or time-consuming exercises, the multimedia will be used as pre-class assignments and as preparation for further class learning and discussion. With this practical approach to implementing flipped learning, the study aims to investigate whether this paradigm of flipped learning using multimedia has positive effects on three aspects: learners' academic achievement, intercultural competence, and autonomy. Apart from learners' academic achievement and autonomy which have been the subject of previous research, intercultural competence can benefit from flipped learning using multimedia involving a broad spectrum of intercultural matters. Research questions are as follows.

1. Does flipped learning using multimedia have any positive effect on learners' academic achievement?
2. Does flipped learning using multimedia have any positive effect on learners' intercultural competence?
3. Does flipped learning using multimedia have any positive effect on learners' autonomy?

II. LITERATURE REVIEW

1. Flipped Learning as a New Paradigm

Since a chemistry teacher Jonathan Bergmann and his fellow teacher Aaron Sams developed a new teaching model which they named 'Flipped Classroom' in 2012, flipped learning has been popularized in various fields including medical students (Si, 2017), Mathematics, middle and high school students' private tutoring centers (Kim, 2018), in elementary schools (H. Lee & Eom, 2017), and in computer programming (Choi, 2017).

The history of flipped learning is not long; however, its underlying philosophy is hardly a novel concept such as 'self-directed' (Knowles, 1975) and 'student-centered' learning back in 1930s. As Bergmann and Sams (2014, p.24) defined, "[i]n Flipped Class 101 direct instruction (lecture) is delivered at home via videos that teachers either create or curate, and that which has traditionally been done as homework is done in class". Compared with conventional lecture type of classes, this flipped paradigm may ensure quality time in a class, promoting meaningful interaction between a teacher and the students and further fostering learner-centered customized education. The uniqueness of it lies mainly in the shift of paradigm, as Hamdan, McKnight, McKnight, and Arfstrom (2013, p. 4) state, "teachers shift direct learning out of the large group learning space and move it into the individual learning space, with the help of one of several technologies". As a result, the role of a teacher is also shifted from an authority to a facilitator of students' learning (Lee, 2014). In addition to the flipped/shifted concept toward viewing students as a subject of learning, the essence of flipped learning entails interaction between a teacher and his or her students. This new method of interaction can change the culture of learning/teaching (Song, 2019, p.1395-1397).

2. Effects of Flipped Learning

1) Academic Achievement in Flipped Learning

The effects of flipped learning on academic achievement may appear controversial. There have been many studies suggesting significant improvement of academic achievement in flipped learning (e.g., Lee, 2014; Kim, 2018; Yim & Rha, 2017). On the contrary, no statistically significant difference was found between the flipped and non-flipped learning in Oh (2017).

Between the full effect and no effect of the flipped learning, partial effects of flipped learning have also been reported. For example, Lee (2018a) observed significant achievement

only in the section of listening and vocabulary in her students' final grade in the flipped class. Furthermore, she expressed serious reservations about the effect of flipped learning on beginner level of English learners (Lee, 2018b).

Considering the inconsistent results in previous research, one may raise the possibility that the ways to implement the flipped learning may be different in the studies, and thus this difference may contribute to its perceived efficacy.

2) Psychological Benefits in Flipped Learning

In addition to the effect of flipped learning on academic achievement, psychological benefits have been suggested. For example, Lee (2015) compared four weeks of flipped and non-flipped teacher-oriented class and observed a significant difference in students' failure tolerance. She suggested a positive effect particularly on behavior and emotion scale. In addition, Yim and Rha (2017) reported that flipped learning boosted students' satisfaction, interest and participation in learning.

Regarding learner autonomy, in the study of Sakai, Chu, Takagi, and Lee (2008) examining Japanese, Taiwanese, and Korean students, despite the students' aptitude for autonomy, teacher-centered class management hindered autonomous learning to be implemented. This suggests a need for a change from a teacher-centered to learner-centered class for learner autonomy. Since features of flipped learning entail the concept of autonomous learning "the ability to take charge of one's own learning" (Holec, 1981, p. 3), flipped learning seems a good option we have for learner autonomy.

When the significance of flipped learning in learner autonomy is taken into account, considerable research has been conducted to investigate this effect. For example, Jeong (2008) observed a positive effect of the flipped learning using an open source learning management system 'Moodle' on students' autonomy. Jung (2017) also found the effect of flipped learning on learner autonomy. This study is notable since it deployed pre-teacher students. Considering that the role of a teacher can be critical to foster autonomous learning in flipped learning (H. Kim, 2015), the pre-service teachers' experience in flipped learning seems particularly meaningful.

3) Intercultural Competence

Intercultural competence is defined by having effective discourse with speakers from different cultures (Byram, 1997). This competence is perceived as important for language

learners in order to avoid intercultural misunderstanding during communication (Byram, Nichols, & Stevens, 2001).

However, the significance of intercultural competence for Korean EFL learners does not seem to carry due weight by the educators and learners. Paik (2012) pointed out that courses concerning culture at 37 universities in Korea provided a macro-level of cultural issues. Rather than topics concerning culture at a macro-level such as the Halloween, intercultural issues which may hinder successful communication seems essential in classes. As Kim (2004) observed, the level of intercultural awareness for university students with high level of extrinsic motivation to learn English does not seem to be high enough. With that in mind, the awareness of intercultural competence especially for those Korean EFL learners who have limited exposure to English speaking cultures would seem critical.

Although multimedia such as video clips has been used in many English classrooms, its focus has been limited to language contents. With such limited exposure to outside cultures, using multimedia that contain various elements of intercultural issues and conflicts can be a viable alternative for the Korean EFL learners. Regrettably, there has been scant research conducted concerning flipped learning using multimedia for intercultural competence.

3. Previous Research and Present Study

As noted above, previous research has rigorously suggested the benefits of flipped learning. However, concerns of its feasibility in real classrooms should not be overlooked. For example, both favorable and unfavorable attitudes of students toward flipped learning reported in Lee (2018b) raise doubts of successful implementation of flipped learning. Concerns seem to be strengthened with mixed results such as in the study of Kim, (2018) that students' positive attitude towards the self-directed learning was confirmed but it did not result in any significant correlations with academic achievement in the flipped class.

One of the possible explanations of the inconsistent results in previous research may lie in the difference of implementation of the flipped learning. Song (2019) warned that if flipped learning is implemented in an undesirable way, it may only impose on students the extra work at home and on teachers on a tertium quid type of method. Jensen, Kummer, and Godoy (2015) further pointed out that the important factor is not the order of learning (e.g., home first and class second) but the instruction itself that aims to promote students' active learning. This possible reason for the inconsistent results in previous research has guided the careful consideration of the feasible implementation of flipped learning in the present study.

Therefore in order to make Flipped learning feasible and practical, multimedia such as video clips on YouTube and internet sites may be useful for a flipped English class rather than the implementations commonly used in previous research such as online homework, quizzes, and self-study of class materials (e.g., Jeong, 2008). Taking into consideration all the teachers' workload to create on-line materials in flipped learning (Taylor, 2015), the present study aims to use pre-made multimedia to ease this burden. Moreover, authentic and enjoyable video clips and internet materials may also be beneficial for students' active participation in the flipped learning. The use of multimedia in English classes itself has gained traction in research; however, not much attention has been paid to the effect of flipped learning using such type of multimedia (cf., Lee, 2015).

In addition, video clips on the internet contain not only good linguistic examples but they also include a full range of target language culture. Regrettably, in previous research flipped learning for developing intercultural competence using multimedia has not received attention in the English learning context (cf., Hong, 2015 for teaching Korean culture to female marriage immigrants), and thus the present study hopes to bring the intercultural aspects of language learning under scrutiny in relation to the effect of flipped learning.

III. METHOD

1. Participants

A total of fifty-eight English learners participated in this study. They were 25 male and 33 female (aged from 20 to 25) English literature majors who were taking a class 'Multimedia English Education' at a university. The class met twice a week and each session lasted 75 minutes. Out of 63 students in the class, 4 students including non-Korean exchange students who failed to provide TOEIC (practice) test scores were excluded in the study. In addition, 1 student at a beginner level (TOEIC scores 450) was excluded. This was based on Lee (2018 a, b) suggestion regarding the low level of students' resistance and the ineffectiveness of flipped learning. As a result, 58 students at an intermediate level according to ETS Score Descriptors (average TOEIC scores 605) participated in the study.

2. Procedure

Although a large size class (N=63) was not ideal for communicative class, the class promoted interactions and discussion between pairs and groups. Various video clips and websites were introduced for the development of the learners' linguistic and intercultural competence. To investigate the effect of flipped learning using multimedia, flipped learning was implemented only in the second half of the semester. That is, the course contained 30 sessions (2 sessions a week and 15 weeks a semester) and the first 14 sessions before the mid-term (15th session) was conducted in non-flipped learning while flipped learning was applied to the second 14 sessions before the final exam (30th session) as shown in Table 1.

(TABLE 1) Design

Session	Learning	Learning through multimedia	Discussion topics selected by	Target language content selected by
1 st - 14 th	Non-flipped	In class	Teacher	Teacher
15 th	Pre-test			
16 th - 29 th	Flipped	At home	Students	Students
30 th	Post-test			

During the first half of the semester, non-flipped learning was conducted as follows. Target English expressions and intercultural issues in the multimedia were provided and discussed during the class. When students were shown the target expressions (e.g., *pin it down*) in the multimedia, they were provided with example sentences (e.g., *There's something wrong with this but I can't quite pin it down*). When intercultural issues (e.g., inappropriate small talk topics in English-speaking cultures) appeared in the multimedia, they were asked to discuss their experiences of cultural misunderstanding as a pair first and then present it in class. Students were allowed to use dictionary whenever it was necessary since the discussion topics were pre-determined by the teacher but the discussion itself was organic and thus students were not fully ready for the discussion in English.

On the other hand, during the second half of the semester, flipped learning was implemented as Hamdan et al. (2013) suggested. That is, students' own pre-learning using multimedia was conducted before class and then the contents were shared and discussed in class. Moreover, as Rath (2014) suggested, the process of 'Get student buy-in' and 'Class tutorials' was adopted so that the students could acknowledge the need for flipped learning and

fully understand how to conduct it at home on their own. The detailed procedures are as follows. First, the students were provided with web addresses (URL) to get access to the multimedia through an E-class bulletin board of the university. They watched video clips and read articles on the internet for both English language items and intercultural issues. Second, regarding English learning for academic achievement, when the students pre-viewed the multimedia at home, they selected useful English expressions and then consulted a dictionary to find example sentences. To ease the students' burden, they were asked to find the example sentences in a dictionary rather than created by the students. Third, regarding the intercultural competence, the flipped learning allowed the students to identify meaningful intercultural issues during the pre-view of the multimedia at home and prepare for the discussion in English for the class. This approach was different from the non-flipped class in which discussion topics concerning intercultural issues were pre-determined. Last, during the class they shared their example sentences they had prepared at home first in pairs and groups. Then each group selected the most useful expressions with example sentences and shared them with the class by presenting them on a board. Following that, the class finalized the useful target expressions and example sentences for future use in real communication. During this process the teacher assisted the students with more example sentences and explained situations and contexts in which the students can use the target expressions. The finalized list of expressions in turn became the contents of their mid-term and final exams. To illustrate an example of intercultural issues, when a student noticed a different concept of privacy between Korean and English-speaking cultures in the multimedia at home, he/she prepared a discussion in English. Next, the intercultural issue was discussed in class first in pairs and then in groups. The next phase involved each group selecting the most meaningful topic and sharing them with the entire class. Different from the non-flipped learning, discussions of the cultural issues or problems in English were already prepared at home and followed by their reenactment in class in the flipped learning sessions. Taken Raths' (2014) flipped learning technique 'encourage (don't punish) students', students' preparation for discussion in English were not critically checked for grading. However, the students were informed that 10% of grading was allocated to their overall participation including their attitude in class.

3. Instrument

Comparisons between the non-flipped and the flipped learning were made before and after the flipped learning in terms of learners' academic achievement, intercultural competence, and

autonomy. First, the effect of flipped learning on academic achievement between their mid-term and final exam scores was compared. Both exams utilized the same format (extended C- test at a sentence level of production). For example, the Korean meaning was provided as in *만약 내가 직장에 잘 맞지 않으면 어떡해?* and the first letter of the target expression was provided as in W_____? (for *What if I don't fit in at work?*). Since the two exams comprised different questions, parallel form reliability was examined. A Pearson's r of .72 (>.70) indicated acceptable alternate-form reliability in tests for academic achievement.

Second, for the intercultural competence a questionnaire of Nam (2017) was adopted. For example, to a question "I know the essential norms and taboos of the English speaking culture (e.g., greetings, dress, behaviors, etc.)", students were asked to respond based on a 5-point Likert scale (with 1 indicating the lowest and 5 the highest competence).

(TABLE 2) Intercultural Competence

Item		α (Pre)	α (Post)
1	I know the essential norms and taboos of the English speaking culture (e.g., greetings, dress, behaviors, etc.).	.83	.83
2	I know some techniques to aid my learning of the English speaking language and culture.	.82	.84
3	I can discuss and contrast Korean cultural behaviors with English speaking culture in important areas (e.g., social interactions, basic routines, time orientation, etc.).	.82	.84
4	I have flexibility when interacting with people from English speaking culture.	.82	.84
5	I adjust my behavior, dress, etc., as appropriate, to avoid offending English speakers.	.82	.83
6	I have a capacity to interact appropriately in a variety of different social situations in the English speaking culture.	.83	.84
7	I try to resolve cross-cultural conflicts and misunderstandings when they arise.	.83	.84
8	I'm aware of diversity in the English speaking culture (e.g., differences in race, class etc.).	.82	.85
9	I'm aware of dangers of generalizing individual behaviors as representative of the whole culture.	.82	.85
10	I'm aware of my choices and their consequences.	.80	.82

Third, a questionnaire to examine learner autonomy was adopted and revised from Chang (2007) and Hwang (2011) as shown in Table 3. Responses were collected on a 5-point Likert scale (with 1 indicating the lowest and 5 the highest autonomy).

(TABLE 3) Learner Autonomy

Item		α (Pre)	α (Post)
1	I'm responsible for identifying my own strengths and weaknesses.	.90	.81
2	I'm responsible for setting up my own learning goals.	.90	.81
3	I'm responsible for deciding what to learn outside the classroom.	.89	.80
4	I'm responsible for evaluating my own learning and progress.	.89	.80
5	I'm responsible for stimulating my own interest in learning English.	.89	.80
6	I'm responsible for learning from my peers, not just from the teachers.	.89	.81
7	I'm responsible for becoming more self-directed in my learning.	.89	.80
8	I'm responsible for offering opinions on learning materials.	.89	.80
9	I'm responsible for discovering knowledge in English on my own rather than waiting for knowledge from the teacher.	.89	.80
10	I'm responsible for offering opinions on what to learn in the classroom.	.90	.81
11	I try to do some extra study beyond the class materials.	.89	.80
12	I try to express my own ideas in English classes.	.90	.81
13	Evaluation and feedback on errors are not only from teachers but also from me.	.89	.80
14	I try to use English not only in English classes but also outside the classrooms.	.90	.81
15	I try to study for exams in my own way.	.90	.80

The study has acceptable internal consistency of the scales as shown in Table 4.

(TABLE 4) Reliability

	Academic achievement Pre (item=30)	Academic achievement Post (item=30)	Intercultural Competence Pre (item=10)	Intercultural Competence Post (item=10)	Autonomy Pre (item=15)	Autonomy Post (item=15)
Cronbach alpha	.85	.86	.84	.85	.90	.83

4. Data Collection and Analysis

First, data from two sets of a paper-pencil type of questionnaire for intercultural competence and learner autonomy and academic achievement (mid-term and final exam) were manually collected and organized in Microsoft Excel (2016). Since the tests to examine academic achievement were at a sentence level of production, minor problems including punctuation were not included in grading. The tests were evaluated by two examiners with the

same scoring standards and then the mean score was obtained for data. Second, descriptive statistics were conducted to identify the basic features of the data. Third, to compare the means of pre- and post- flipped learning, a paired-samples *t*-test was conducted for learners' academic achievement and then repeated for intercultural competence and learner autonomy respectively.

IV. RESULTS AND DISCUSSION

To examine the effects of flipped learning, comparisons were made between before and after the flipped learning in terms of three factors; learners' academic achievement, intercultural competence, and autonomy as shown in Table 5.

(Table 5) Descriptive Analysis

	N	Pre- flipped		Post-flipped	
		M	SD	M	SD
Academic Achievement	58	24.51	5.26	25.27	4.11
Intercultural Competence	58	2.88	5.79	3.87	5.08
Autonomy	58	3.63	.63	4.32	.40

$p < .05$

Note. d =Cohen's d

Findings of the study confirm that flipped learning is worth implementing in English classrooms, with more convincing evidence in intercultural competence and learner autonomy. First, concerning the learners' academic achievement, a paired-samples *t*-test was conducted to evaluate the effect of flipped learning on learners' academic achievement. As shown in Table 6, there was an increase in pre-flipped learning ($M=24.51$, $SD=5.26$) to post-flipped learning ($M=25.27$, $SD=4.11$). However, it did not reach statistical significance ($p > .05$).

(Table 6) A Comparison of Learners' Academic Achievement between pre- and post-Flipped Learning

	N	Pre- flipped		Post-flipped		<i>t</i>	<i>p</i>
		M	SD	M	SD		
Academic Achievement	58	24.51	5.26	25.27	4.11	-1.11	.27

$p < .05$

Note. d =Cohen's d

The result suggests that there was an improvement after flipped learning; however, the effect was not strong enough to reach statistical significance. This is in line with Oh (2017) study that the effect of flipped learning on academic achievement was not statistically significant. A possible explanation of the finding in the present study is concerned with the unanimous support and successful implementation of flipped learning by the students. Unlike the non-flipped learning condition where the target English expressions were selected and the example sentences were provided by the teacher during the class, in flipped learning, the learning was initiated and self-directed by the learners. Thus, the selection of the target language items was influenced by their judgement in terms of their usefulness in future uses. However, attempts were observed to cut corners and thus a desirable learning outcome was not successfully achieved by some students. For example, since the students understood that the language contents they chose during the pre-learning at home can be the contents of their exams, easier language items and shorter example sentences tended to be chosen rather than more meaningful yet challenging ones. This suggests a possibility that successful implementation of flipped learning is the key to success in academic achievement.

As shown in Table 7, a paired-samples t -test was conducted to investigate any difference of learners' intercultural competence between pre- and post-flipped learning. There was a statistically significant increase in learners' intercultural competence from pre- ($M=2.88$, $SD=5.79$) to post-flipped learning ($M=3.87$, $SD=5.08$), $t(57)=-15.31$, $p=.00$ (two-tailed). The mean increase in intercultural competence was 9.90 with a 95% confidence interval ranging from 8.60 to 11.19. The eta squared statistic (.80) indicated a large effect size.

(Table 7) A Comparison of Learners' Intercultural Competence between pre- and post-Flipped Learning

	N	Pre- flipped		Post-flipped		<i>t</i>	<i>p</i>	<i>d</i>
		M	SD	M	SD			
Intercultural competence	58	2.88	5.79	3.87	5.08	-15.31*	.00	.80

p < .05

Note. *d*=Cohen's *d*

The result suggests that there was strong evidence supporting the positive influence of flipped learning on intercultural competence. Compared with non-flipped learning in which the selection of cross-cultural issues was in the teacher's hand, in flipped learning the learners identified the cultural misunderstanding and differences while watching video clips and prepared for class discussion at home. As the students themselves chose the issues for discussion, this may have motivated them to learn more about those issues and share their experiences of cultural problems and discuss ways to avoid cultural misunderstanding during the class discussion. This is well explained in the item yielding the most dramatic change 'I know some techniques to aid my learning of the English-speaking language and culture' (from $M=2.74$ to $M=3.95$, Mean difference=1.21).

Table 8 shows a statistically significant increase in learners' learner autonomy from pre- ($M=3.63$, $SD=.63$) to post-flipped learning ($M=4.32$, $SD=.40$), $t(57)=10.48$, $p=.00$ (two-tailed). The mean increase in intercultural competence was .69 with a 95% confidence interval ranging from .82 to .56. The eta squared statistic (.66) indicated a large effect size.

(Table 8) A Comparison of Learner Autonomy between pre- and post-Flipped Learning

	N	Pre- flipped		Post-flipped		<i>t</i>	<i>p</i>	<i>d</i>
		M	SD	M	SD			
Autonomy	58	3.63	.63	4.32	.40	10.48*	.00	.66

p < .05

Note. *d*=Cohen's *d*

The positive advantage of flipped learning on learner autonomy found in the study is also notable. Learner autonomy was developed after flipped learning (from $M=3.63$ to $M=4.32$,

Mean difference=.69) and the item 'I try to express my own ideas in English classes' was most improved (from M=2.69 to M=3.60, Mean difference=.91). A possible explanation of this is that when the students identified any culturally problematic issues in the multimedia during their flipped learning, they were required to prepare for class discussion in English. Therefore, different from non-flipped learning, they may have felt more confident to express their opinions in English during the class discussion as shown in the question.

In brief, the flipped learning contributed to the noticeable improvement of intercultural competence and learner autonomy. According to Sakai and Takagi's (2009, p.319) description of degree of learner autonomy, it can be said that flipped learning fostered the students' transition from 'dependent learners' to 'independent users' in the present study.

V. CONCLUSION AND PEDAGOGICAL IMPLICATIONS

The study explored a practical way of flipped learning using the multimedia in an English class. To ease the burden on teachers and students, instead of online lectures created by teachers and mechanical assignments imposed on learners, video clips and materials available on the internet was deployed. The selection of English language items and intercultural topics incorporated the students' decision and opinion and thus led to their active participation in class learning and discussion. The study investigated whether flipped learning has beneficial effects on three aspects of learning: learners' academic achievement, their intercultural competence, and autonomy.

The findings of the study suggest a positive influence of flipped learning on the development of intercultural competence and learner autonomy. In flipped learning, the learners identified the cultural misunderstandings while watching video clips and they prepared for class discussion at home. Through this process, they promoted and deepened their intercultural competence. Moreover, rather than teacher-directed learning, this autonomous learning modality enabled the students to develop their autonomy and lateral learning. The effect of flipped learning on academic achievement however did not reach statistical significance. Nonetheless, the results supporting the benefits of flipped learning on intercultural competence and learner autonomy should evidently guide the direction of English educators in curriculum development and implementation.

Various pedagogical suggestions that are made in research for successful implementation of flipped learning are worth stating. For example, Ahn (2018) provided curriculum designs for

different types of classes such as TOEFL/OPIc/TOEIC speaking module, visual image reading module, and TED listening for shadow reading module. Of all the suggestions in previous research, the techniques (Raths, 2014) that the present study adopted may be practical and useful for many English classes in Korea. First, it would be advantageous to ‘start small.’ This may ease the burden on educators to make videos. Rather than creating multimedia, the study utilized open sources on the internet in an effort to start the process. Second and perhaps more critically, the aim should be to get the students ‘buy-into’ the approach. This in turn can signal to the students to understand the benefits of the flipped learning and its processes. The lack of student consent to the flipped learning and the acknowledgment of its advantages may have been one of the reasons for the negative results obtained in some previous research. Prior to the implementation of flipped learning in the present study, benefits of flipped learning were explained and simulations and tutorials on the mechanics of it were provided to the students. Third, the ‘encourage (don't punish) students’ approach was adopted in the study. Therefore, the students’ flipped learning was not checked for grading but encouraged for class participation (10% of grading was allocated for overall class participation including attitude). Since the flipped learning is not rigid principle but flexible teaching paradigm, the balance between encouragement and penalty can be at a teacher’s liberty based on their students.

Among the benefits of flipped learning using multimedia, learner autonomy can be one of the most valuable gain in this study. Among the characteristics of learner autonomy, ‘selecting objectives of language learning’, and ‘setting approaches for achieving goals’ (Hwang, 2011, p.732-733) can be promoted through flipped learning using multimedia in many English classrooms. Different from conventional English classes, the flipped learning in the present study allowed the students to choose the target English expressions for their future uses in communication. They were also asked to find useful example sentences in a dictionary so that they can use them in future communication. During this Flipped learning, the students were given opportunities to set objectives and goals of English learning and moreover, they learned a way to use multimedia for their future self-study. Consequently, the process of flipped learning using multimedia promoted students’ autonomy.

Most importantly, it should be noted that flipped learning does not mean granting indulgence to educators to shift the responsibility to the students. In this regard, taking a rosy view of flipped learning without careful consideration and well-prepared implementation should be avoided. As Song (2019) asserted, in the absence of understanding of hardship of the approach, flipped learning may turn out to be a strain on students. Thus, in order to successfully implement flipped learning, teacher role is critical. First, when teachers design

flipped learning, practicality and feasibility should be carefully concerned. It should not be burdensome to both teachers and students. Second, teachers' roles require careful guidance and assistance as facilitators rather than strict enforcers who constantly interject and refute students' ideas when a discussion is occurring. When the students feel safe to share English expressions they prepared and participate in class discussion, they may feel motivated to continue their flipped learning. In this sense teachers' roles can determine whether it falls into a virtuous or vicious circle.

The study has limitations regarding academic achievement. Since the beginners were excluded in the study and it was restricted to the intermediate level students, future study investigating better ways to implement flipped learning particularly for lower ability level students may enlighten educators who may be challenged with low proficiency level students.

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