Promoting Students' Higher Order Thinking through Flipped Classroom Model in Listening Comprehension Classes

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Abstract

The teaching of the Listening subject in Higher Education needs to be more innovative and should be conveyed through various classroom activities. The activities in the teaching of listening should be embedded in technology to replace the existing traditional listening classes. Moreover, learners are demanded to improve their higher-order thinking skills to enhance their problem-solving skills through new learning experiences. The flipped classroom encourages students to participate more actively in problem solving, either individually or in small groups, encourages students to take ownership of their education, and delivers a novel learning experience. The research examined students' higher-order thinking abilities in experimental and control groups with varying degrees of schooling. The population consists of third-semester students at a private university in Indonesia. The exam was designed to obtain quantitative evidence on how the inverted classroom model increases students' listening capacity and higher-order thinking in English in an EFL environment and to corroborate the quantitative findings with students' views of the inverted classroom model in listening. The result demonstrates that inverted classes assist students to increase their capacity for higher-order thinking. The flipped classroom model prepared the students outside the class and presented their development in class. They also perceived that this model gives a positive impact on them. This teaching method helped them rewind the material repeatedly and then organize their listening skills in class.

Keywords: Flipped classroom model, higher-order thinking skills, and higher education students

INTRODUCTION

In the twenty-first century, educational activities have adopted the use of technology in their teaching and learning. The rise of the digital world and the availability of modern educational equipment inspire teachers to be more inventive. With th broad use of

computers and worldwide communication networks, technology has continued to influence how we read, write, and utilize written language for learning and communication (Kern, 2000). Through technology, teachers can create efficient and effective learning activities such as students can learn the material through digital tools at home and practice more in class. This activity is called inverted classroom or well known as flipped classroom model.

Flipped learning has been shown to be strongly associated with several kinds of learning styles, including peer-assisted, collaborative, and cooperative (Bishop & Verleger, 2013). Moreover, according to Maninun & Kittichartchaowalit, (2017) the flipped classroom implies an educational process in which students enter synchronous courses with some theoretical knowledge and awareness of the subject being addressed. For instance, by using flipped classroom model in listening class, the students can enhance their lower-order thinking at home and develop their higher order thinking skills in a class by discussing with their friends. As the result, higher order thinking skills can encourage and enhance students' language skills in EFL class. (Indriyana & Kuswandono, 2019, Lu et al., 2021, Febriyani et al., 2020, Sitorus et al., 2021, Turidho et al., 2019, Sukmawijaya et al., 2020).

Higher level thinking abilities or Higher Order Thinking Skills (HOTS) are often defined as cognitive tasks that extend beyond the Bloom's taxonomy stages of recall and comprehension. Higher-order thinking abilities (HOTS) include analysis, synthesis, and assessment and involve mastery of prior levels, such as applying regular rules to known or new issues (McDavitt, 1994 as cited in Nagayar & Aziz, 2015). According to King et al., (1998), HOTS encompass critical, logical, reflective, metacognitive, and creative thinking and are activated when people are confronted with novel circumstances, complicated difficulties and uncertainties, and dilemmas. To summarize, HOTS is a cognitive capacity that students should cultivate in order to improve their ability to think critically, logically, and creatively in order to solve problems.

Several pilot studies address the flipped classroom and higher order thinking. The first study, entitled "Effect of flipped classroom model on Indonesian EFL students' writing skills across and individual variations in learning," was performed by Afrilyasanti et al., (2016). This prior study showed that flipped classrooms had a beneficial effect on students' writing abilities. Moreover, research conducted by Alsowat, (2016) titled "An English Language Flipped Classroom Teaching Model: Effects on English Language Higher-Order Thinking Skills, Student Engagement, and Satisfaction." The purpose of this research was to determine the impact of a proposed EFL-FCTM on graduate students' English higher-order thinking skills (HOTS), engagement, and satisfaction. This past study emphasized the importance of higher order thinking abilities, a student-centered teaching methodology, and student involvement. Furthermore, (Triantafyllou et al., 2017, Reidsema et al., 2017, and Xin-yue, 2016) were agreed that flipped classroom model can motivated students in their performance, gave more exposure in target language, and this flipped classroom model can also increase teachers' professional development.

Based on the latest study, based on earlier research, attempts to examine students' higher order thinking abilities in an experimental and control group at the university level. The population consists of third-semester students at a private university in Indonesia. The test was conducted to collect quantitative data on how the flipped classroom model promotes students' listening ability and higher order thinking in English in an EFL context. Listening in daily communication and the educational process has an important role. A foreign language learner studies the target language by listening to the audio of native speakers before they learn how to speak in the target language, especially in English. Despite its significance, listening has received only slight emphasis in language instruction. However, in college classrooms, listening serves as a key channel for learning.

Furthermore, to verify the quantitative data, the students' perceptions of the inverted classroom model in listening were administered. Therefore, this research proposed two research questions. First, what is the difference between the students who were taught by using flipped classrooms and those who were not? Second, how is the students' perception of the teaching model?

METHOD

Research Design

Based on the idea that combining qualitative and quantitative data will help better understand the research questions than either method alone. Mixed method was chosen as the research design of this present study. Creswell (2012, p. 535) mentioned the mixed method research design is based on blending of qualitative and quantitative methods in a single study. Therefore, in this study the quantitative data were used to answer the first research question. Additionally, the qualitative data were applied to figure out the finding from the second research question.

Participants

The participant of this research is the English Department Student in one of the private universities in Indonesia namely Galuh University. The researchers chose the participants purposively. There were 55 students from both experimental and control groups. The experimental group consisted of 27 students (11 male and 16 female), and the control group students consisted of 28 students (8 male and 20 female).

Data Collection Tools

In collecting the data, firstly the researchers were measuring the students' higher-order thinking level by using performance-based assessment as proposed by (Brookhart, 2010). Then, the researchers were administered pre-test and post-test to gain the quantitative data both in the experimental and control groups. Both of the tests used listening TOEFL like test instrument. The researchers utilized multiple choice test to obtain the listening score before and after the treatment by using flipped classroom model. The next data collection tool was used questionnaire modified from (Ahmed, 2016).

Data Collection

The quantitative data were obtained from the test after the 14 online meeting lectures. It was conducted from September 2021 up to December 2021. This study analyzed the flipped classroom model in listening comprehension classes, assessing the higher-order thinking level of EFL learners in listening classes, and the qualitative data was the students' perception toward the flipped classroom. The experimental students are given some class instructional materials via google classroom before the online lecture starts. The online lecture synchronously happened in zoom meeting. At the asynchronous learning, they were asked to listen, answer the questions, and take note of the materials on their own. During the online synchronous lectures, the students perform discussion, problem-solving, and presenting the questions. Thus, the lecturer was able to assess their higher-order thinking level based on their performance tasks.

In the control group class, the lecturer gave the material synchronously in online zoom meetings directly. The students were also done the performance task in zoom meeting during the lectures. The asynchronous learning did not happen in this control group class. Thus, investigating the students' perception was the last data collection in this research and it was used questionnaire. The students were assigned to fill out the questionnaire.

Data Analysis

The quantitative data were analyzed by using t-Test paired two sample for means. The researchers run the data analysis from analysis tool in Microsoft excel. It involved the descriptive statistical analysis was used to describe the maximum and the minimum scores, mean, and deviation standard, while the inferential statistical analysis was used to test the hypothesis. Homogeneity test and normality test was conducted before the hypothesis test as the condition for testing and hypothesis. The test showed that through the treatment the students revealed the development of their HOTS in listening class. Moreover, the qualitative data calculated in percentage proportion. Questionnaire was calculated in form of percentage in this stage.

FINDINGS AND DISCUSSION

The lesson plan is organized into five sections: within the classroom, outside the classroom, assessment, and feedback. To begin, inside class—a session in which students were given access to Edmodo and informed about the lesson—is a session in which students were given access to Edmodo and informed about the teaching. Within the classroom, there is a five-step paradigm. To begin, establish learning goals by identifying the behaviors that students should display and focusing on behaviors associated with HOTS. Second, the instructor constructs pertinent questions and facilitates participatory conversation. Thirdly, the instructor assists students in developing skills by using appropriate learning resources and selecting activities that encourage active learning. Additionally, the instructor should supervise and record classroom activities. Collecting input from students is also necessary.

Finally, the instructor gives feedback, facilitates self-evaluation, and incorporates assessment into instruction improvement. Outside of class, students are listening to the audio and taking notes in accordance with the supplied directions. In accordance with this, student complete steps 1 and 2.

These are the lower-order cognitive processes involved in recalling and processing audio. Students began to build their higher-order thinking abilities in stages 3, 4, 5, and 6. It began with a demonstration of their prior knowledge. Following that, compare and contrast what they already know. Students cooperate in step 5 by debating and integrating ideas to create something new. Develop views and finalize the final judgment by reflecting on thinking criteria. The fifth phase of the course is feedback inside class activities. Six months later, the instructor administered a post-test to the students. Additionally, the next paragraph will clarify the research's outcome.

What is the difference between the students who were taught by using flipped classrooms and those who were not?

The post-test-only control group design was used to answer the first research question. The test showed that through the treatment the students revealed the development of their HOTS in listening class. Research framework can be seen on table 2.

Table 2 Research Framework

Group	Treatment	Post-test
Experimental	X1	T2
Control	X2	C2

Table 3. Result of t-test between experimental and control groups

Group	Mean of Post-test	t-test
Experimental	4.81	3.68
Controlled	4.00	

According to Table 3, the experimental group's mean post-test was greater than the control group's mean, and the t-test was 3.68. The researcher compared the t-test to the t-table to determine the study's significance. Degree of freedom (df) was 60, the closest value to 82. The df value was 60, the threshold of significance was 0.01 using a two-tailed test, and the t-table value was 2.660. As a result, the t-test was greater than the t-table. As a result, there is a statistically significant difference between the experimental group that used the flipped classroom model and the control group that utilized the conventional approach. In other words, the flipped classroom format may help students in listening class develop their higher-order thinking abilities.

Students' perceptions toward the flipped classroom

The most obvious difference that students perceived was the new learning experience. Having mastered this approach, they were accountable for their academic success. They have the ability to stop or rewind the audio. Traditionally, students sat and listened to the lecture through audio exclusively. Through this strategy, learning becomes less about receiving and more about challenging students to critically examine each lesson and expand their abilities. Initially, the students wanted to just sit and listen to the lecture's audio. At start, they were passive learners. They became engaged learners once the instructor altered the paradigm. They must show their comprehension to their instructor and peers in the flipped format. They recognized the assignment as a less appealing pastime for the first time. After five months of therapy, they discovered that studying might be enjoyable. Finally, the majority of students became used to viewing the video and became totally involved in the learning process.

According to the questionnaire, the majority of students believed that this strategy improved their HOTS during listening class. They mostly engaged in small group conversations, developed pertinent questions, and expressed satisfaction with the immediate reply from their peers or the instructor. Additionally, the students believed that this paradigm empowered them to raise questions in complete English without fear of their grammatical proficiency. The statistics in Table 4 indicate that students have a favorable opinion of the flipped classroom paradigm. It embodied a large number of students. Table 5 contains the qualitative data expressed as percentage proportions.

Table 4. The Questionnaire rate for the students

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Flipped teaching enables me to plan ahead for my class.	6	18	2	1	-
2. I have sufficient time to learn the target language via the audios.	12	10	4	1	-
3. After listening to the audio, I feel more secure in my ability to seek explanations.	9	12	4	1	1
4. I have more confidence in my ability to learn as a result of the flipped classroom paradigm.	6	15	5	-	1
5. The flipped classroom style facilitated my development of hots.	10	14	3	-	-
6. The HOTS is superior since I have more time in class to implement what I've learned.	9	14	3	1	-
7. I believe my critical thinking and prior understanding of flipped classroom learning have improved.	7	13	4	3	-

8. I believe that the flipped classroom style has helped me in no way.	-	-	9	16	2
9. Classroom time was properly used.	5	14	6	2	-
10. The flipped classroom style increased my comfort level in class.	10	11	4	1	1

Modified from (Ahmed, 2016)

Table 5. The Percentage of Questionnaire

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Flipped teaching enables me to plan ahead for my class.	22.2%	66.7%	7.4%	3.7%	-
2. I have sufficient time to learn the target language via the audios.	44.4%	37%	14.8%	3.8%	-
3. After listening to the audio, I feel more secure in my ability to seek explanations.	33.3%	44.4%	14.8%	3.75%	3.75%
4. I have more confidence in my ability to learn as a result of the flipped classroom paradigm.	22.2%	55.5%	18.5%	-	3.8%
5. The flipped classroom style facilitated my development of hots.	37%	51.8%	11.2%	-	-
6. The HOTS is superior since I have more time in class to implement what I've learned.	33.3%	51.9%	11.1%	3.7%	-
7. I believe my critical thinking and prior understanding of flipped classroom learning have improved.	25.9%	48.1%	14.8%	11.2%	-
8. I believe that the flipped classroom style has helped me in no way.	-	-	33.3%	59.2%	7.5%
9. Classroom time was properly used.	18.5%	51.8%	22.2%	7.5%	-
10. The flipped classroom style increased my comfort level in class.	37%	40.7%	14.8%	3.75%	3.75%

According to tables 4 and 5, the researchers determined that 95% of respondents believed this strategy aided their educational attainment. Additionally, they felt at ease throughout the listening lesson. Additionally, it boosted their confidence and ingenuity when it came to studying the target language. Additionally, kids build their higher order thinking abilities via the use of thinking tactics, mental habits, and enough time to ponder. According to Bloom's Taxonomy, there are six criteria for classifying thinking: remembering, comprehending, applying, analyzing, evaluating, and producing. Stage 1 is memory; at this stage, the learner recognizes, lists, names, and categorizes the auditory content. Comprehension is stage 2, and the actions include summarizing, intervening, interpreting, and comparing. Level 3 is application; at this stage, students apply and integrate their knowledge. The fourth step is analysis; at this stage, students may arrange, structure, outline, and integrate their work. Evaluation is the fifth stage, during which students engage in tasks such as hypothesizing, judging, checking, and criticizing. Stage six is creation; they may create knowledge by designing, constructing, inventing, and devising it.

As a result, the flipped classroom concept is based on the notion of reversing the process of teaching and learning. According to Moraros et al., (2015), the majority of flipped classroom apps aim to provide students the ability to read/view course-related information at their own speed and on their own time prior to the actual class. As a result, kids are prepared when they come to class. The findings indicate that when the instructor designed the flipped classroom by selecting audio that was appropriate for the lesson, she also discussed the new teaching and learning process. It was 95 percent appropriate. When she instructed the students to take notes while listening to the audio, the step was evident. Additionally, she challenged students to create some intriguing questions about the audio. In class, the instructor employed five-step models and pedagogical technologies to allow students to grasp the target language and apply it more realistically in class. Some principles in flipped classroom based on Egbert et al. (2014, p. 6) described "in the flipped classroom, all direct instruction was expected to be completed before the start of class; in other words, students were to listen to the character pronunciations, watch the culture videos, read, and review the writing for the week before they came to class." and Alsowat (2016, p. 109) are "use range of technologies, use different modes to complete instructions, less class time, vary video modes, and well-organized." Additionally, Guy & Marquis (2016, p. 10) "the flipped format provided more opportunities for interaction between and among students and the instructor. Class time was spent helping students with activities/projects, which allowed for more corrective action whenever students were misguided and reinforcement when learning goals were achieved." In line with Ogden, (2015), the students were more valuable in case of time and opportunity to increase their self-paced instructions.

Despite the benefits, there are significant drawbacks to using this strategy. The issues stemmed from the selection of material, questions, technological difficulties, and resources. The material of the audios should be relevant to the lesson plan; sometimes, the instructor had challenges in selecting acceptable content that corresponded to the day's lesson plan. As

Alsowat (2016, p.118) argued that instructors have to engage students in learning situations that enhance their experiences. Still, there are some challenges to be overcome including the integration of technology in foreign language classrooms. To solve the problem, the instructor must thoroughly prepare audio relating to the curriculum. According to the flipped classroom standards for a foreign language lesson, students must create questions based on the audios for classroom or group discussion. In the current research, students were first hesitant to pose a question. They often repeated the same question. During the first month, a handful of students struggled to formulate questions; at times, they were completely stumped. This exercise was revised in the second month, with students bringing the question to class and brainstorming in small groups. This enabled people to interact with the video material more effectively. The critical factor is for students to use class time to develop their comprehension and proficiency in applying their information.

CONCLUSION

The flipped classroom concept provides a variety of opportunities for students to explore their learning knowledge, encourage their autonomous learning, foster successful student interaction, and engage them in higher order thinking abilities. It offers the instructor with a variety of resources and immediate feedback for the kids. Nonetheless, it encountered several roadblocks along the way. It is reliant on technology and effective time management. In general, the flipped classroom approach is an excellent teaching method for undergraduate students. According to Roth, (2016), the Flipped Classroom model is efficient for EFL classroom learning activities, and students have a favorable attitude about it.

As a result of the findings, it can be concluded that instructors must be well prepared before using the flipped classroom concept in their classrooms. They must first have a thorough understanding of flipped classrooms, its applicability, the challenges that might arise in flipped classrooms, and how to resolve them. Additionally, when it is implemented, instructors must continually reflect on and adjust the methods and activities used. Meanwhile, it is advised that schools provide themselves with the necessary facilities for implementing the flipped classroom approach. Computers and strong Internet connectivity are two of the facilities that should be provided. Finally, future scholars should do further study into assessing the instructional materials used. Additionally, similar research with other groups of students and situations is required to provide a diverse viewpoint on the utilization of flipped classrooms in the EFL environment.

The teaching methodology is based on technology and outside-the-classroom learning, any kind of distraction might disengage students. One of the impediments was individual students' access to the audio connection. Several of them lacked access to the internet on a regular basis. To address this issue, the instructor downloaded the audios for the students, allowing them to listen to them while offline. Another technical difficulty was with the audios, namely the loudness and velocity of transmission. There are no answers to this issue during the first month, and the instructor opted to find a more appropriate audio

to finish this model throughout the subsequent months. The last obstacle is one of resource allocation. In an ideal world, the teacher in a flipped classroom would record her own lesson. The instructor included audio from the internet in this study. The instructor deliberated long and hard about whether audio was the best tool for the educational result. Prior to distributing the plan to the students, the instructor needs to create a solid plan.

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