Journal of Educational Management and Instruction
2021, Vol. 1, No. 2, page 62-70
http://ejournal.iainsurakarta.ac.id/index.php/jemin/

Flipping the classroom to promote higher order thinking skill: A case of Chinese undergraduate students

Ariani Selviana Pardosi[1*] https://orcid.org/0000-0002-3100-8035
Liu Yue Ming[1] https://orcid.org/0000-0003-1021-8970

[1] *Jilin International Studies University, China*

ABSTRACT
Flipped learning approach has recently gained much more attention and has widely been utilized as a new approach to assist student-centered learning activities across different contexts of teaching. The present study aims to examine the effect of flipped learning instruction on undergraduate students' development of higher order thinking skills (HOTS). Drawing on a quasi-experimental design, this study recruited 70 Chinese science education students enrolled in 'teaching with technology' course; they were equally divided into flipped (experiment) and non-flipped (control) groups. Data were obtained from pre-tests and post-tests in both groups using a higher order thinking skill test, and were analyzed by means of sample t-test using IBM-SPSS version 24. The results showed that flipped group students outperformed the non-flipped students in terms of HOTS performance. There was a significant different between the results of flipped group students' pre-test and post-test scores (p-value: 0.000 < 0.05). It suggests that the flipped learning instruction has a significant effect on the Chinese undergraduate students' HOTS development. This study contributes to providing valuable insights for instructors and college curricula designers to incorporate flipped learning approach in teaching at university level.

ARTICLE INFO
Keywords:
flipped learning; higher order thinking skill, quasi-experimental design

Article History:
Received: 04 November 2021
Revised: 15 December 2021
Accepted: 28 December 2021
Published: 30 December 2021

How to Cite in APA Style:
Pardosi, A. S. & Ming, L. Y. (2021). Flipping the classroom to promote higher order thinking skill: A case of Chinese undergraduate students. *Journal of Educational Management and Instruction,* 1(2), 62-70.

Introduction

Many years ago, we were witnessing the conventional teaching and learning process, while the teachers explained materials in front of the class. The students were seen as an empty glass that must be fulfilled with as much as water; meaning that students should receive uncountable knowledge and understanding about certain material (Dimitrios et al., 2013; Lee et al., 2016). Such teacher-centered learning method was flourish around 18 century until the late of 1900s, and was widely implemented in all school levels. The students, instead of actively joined classroom activities, were receiving their teachers' explanation and tried to acquire as much as information delivered in the classroom. Nowadays, the teaching paradigm has shifted from teacher-centered to student-centered approach, where students play a crucial role in the process of teaching and learning. With the emergence of Communicative Teaching philosophy, teaching activities enable teachers and students to have collaboration in a more learner-centered environment (Lee & Drajati, 2019; Triana & Nugroho, 2021; Webb & Doman, 2020).

In the era of Information and Communication Technology (ICT), the concept of collaborative learning has encouraged education experts to develop teaching methods by combining traditional and contemporary teaching paradigm using technology-based teaching. From this effort, the idea of flipped learning was come up as a result of

*Corresponding author: Ariani Selviana Pardosi *arianiselviana@jisu.edu.cn*
http://doi.org.10.22515/jemin.v1i2.4301

extensive inquiry done by previous studies, and literature has acknowledged Bergmann and Sams (2012) as the prominent developer of this approach. Flipped learning is based on the idea of technology integration into classroom teaching activities, where teachers and students are able to "flip" their classroom both prior to the class and in-class learning activities (Al Mamun et al., 2021; Birgili et al., 2021; Bredow et al., 2021; Ekici, 2021; Wahyuningsih & Baidi, 2021). In this approach, the use of technological tools is the key success of gaining the best results of students' performances in the teaching and learning process (Lin et al., 2021; Wardani & Suharto, 2021; Van Alten et al., 2021). Till today, flipped learning approach has been widely used in various teaching contexts around the world.

Previous results have acknowledged the positive effects of flipped learning to enhance the efficacy of teaching and learning process. Winter (2018) researched the potential relationship between students' motivation and performance in a flipped learning course. The result pointed out that flipped learning benefited the students' performance across different levels. In line with Winter's result, Jdaitawi (2020) also found that flipped learning successfully promoted students' positive emotion. In addition, Huang et al. (2019) revealed the significant effect of gamification-enhanced flipped learning on students' cognitive engagement. Students enrolled in the gamification-enhanced flipped learning group also produced higher quality performances than the non-gamified flipped learning group in the class activities. Furthermore, students in the gamification-enhanced flipped learning group scored significantly higher in the post-course test than did their non-gamified groups. More recently, Moreno-Guerrero et al. (2020) came up to the conclusion that flipping the classroom using technology-enhanced learning positively affected students' educational innovation, motivation, and engagement in the class.

The previous studies' results agrees in one conclusion that flipped learning has a positive influence to enhance the effectiveness of teaching-learning activities. This study is based on the idea that flipped learning instruction is a promising method to enhance students' learning performance and achievement; and this empirical evidence seems to be a potential basis for developing students' higher order thinking skills (HOTS). HOTS is a concept of education reform based on learning taxonomies (such as Bloom's taxonomy) (Bredow et al., 2021). The idea is that some types of learning require more cognitive processing than others, but also have more generalized benefits (Kim et al., 2021; Öztürk & Çakıroğlu, 2021). In Bloom's taxonomy, for example, skills involving analysis, evaluation and synthesis (creation of new knowledge) are thought to be of a higher order than the learning of facts and concepts which requires different learning and teaching methods (Hajibaba et al., 2013; Masrul et al., 2019). Higher-order thinking involves the learning of complex judgmental skills such as critical thinking and problem solving.

Previous studies related to immense efforts of enhancing students' higher order thinking skills (HOTS) have been conducted in the recent years. Hugerat and Kortam (2014) researched the improvement of HOTS among freshman by teaching science through inquiry strategies. The research revealed that inquiry strategy has a significant effect on developing students' HOTS. Students' expressed positive perceptions, both emotions and cognitive performances. In a similar direction, Apino and Retnawati (2017) and Saputri (2019) developed instructional design to enhance students' higher order thinking skills; and found it as an effective method. Moreover, Suprapti and Nugroho (2021) empirically proved that technology-based learning activities has successfully enhanced the undergraduate students' higher order of thinking skills in Indonesian university context.

Having explored the above previous literature, a research gap is noticeable. HOTS is considered as a crucial skill for students in today's twenty-first century era, particularly for university students. From the previous studies, we acknowledge that

flipped learning is a promising method to solve various problems in the teaching-learning process and to enhance students' performance. We assume that the flipped learning strategy would be an effective method to enhance students' higher order thinking skills in a university context. Therefore, this study aims to shed some light on the effect of flipped learning instruction on Chinese undergraduate students' higher order thinking skills. To achieve the objective, a quasi-experimental design consisting of flipped and non-flipped groups is adopted using pre-tests and post-tests scores to see the improvement. The data are collected using a higher order thinking skill test (Annan et al., 2019).

Method

Research context and participants

This study aims to explore the impact of flipped learning instruction on Chinese undergraduate students' higher order thinking skills (HOTS). This study is conducted at science education department at Jilin University China. A quasi experimental design using control group and experimental group was conducted in this study to elicit the effect of flipped classroom on students' HOTS by means of pre-tests and post-tests. Quasi experimental designs identify a comparison group that is as similar as possible to the treatment group in terms of pre-intervention characteristics (Cook, 2015).

Participants

A total of 70 Chinese undergraduate students (29 males and 41 males) enrolled in "teaching with technology" course in the science department at Jilin University China were recruited in this study. They were second-year students and their ages were between 18 and 21, with the average age was 19. They were divided into two groups (flipped and non-flipped) with 35 students in each group. The flipped (experimental) group was taught under the environment of flipped learning activities by the blended learning in pre-class and in-class learning. On the contrary, the non-flipped (control) group was taught similar materials with the flipped one, but using the conventional teaching method (e.g. lecturing, drilling, memorizing).

Instrument and data collection

This study employed higher order thinking skill (HOTS) test in terms of evaluation, analysis, and creation to collect data on students' thinking skills. The HOTS test was adapted from Annan et al. (2019) and was developed by referring to Bloom's taxonomy, which is only questions representing HOTS were used. The test comprised 30 item questions that were distributed equally in the three components; evaluating (10 items), analyzing (10 items), and creating (10 items). Each question was followed by four options, and the students were to choose the best answer. The test was specifically designed, in which to reach the correct answer, students were required to demonstrate their best ability to develop new ideas and critical thinking. Each correct item was scored 1 (one) and the wrong item was 0 (zero), so the maximum score was 30 (thirty). There were two sets of HOTS test, one was for pre-tests and another one was for post-tests.

The data collection of this study was conducted using pre-tests and post-tests in the two groups (flipped and non-flipped). The pre-tests were administered in the beginning of the class meeting to examine the students' HOTS prior to the treatments. The treatments were conducted in 6 meetings using flipped learning approach in the experimental group and conventional method in the control group. The topics and materials of the two class were similar, related to 'communicative teaching, modern teaching, using technology in teaching, learning media development, and digital learning. Furthermore, post-tests were given to the students in both groups to see the enhancement of their HOTS.

Data analysis

After the data were obtained, the next step was analyzing the data. The data analysis in this study was carried out using statistical analysis in terms of sample t-test to see the effect of flipped learning instruction on students' higher order thinking skills (HOTS). First of all, the participants' scores on the pre-tests and post-tests were converted into 1 to 30 according to the number of correct answers; each question was scored 1 for the correct and 0 for the wrong answer. Then, the mean scores along with the standard deviation (SD) and the standard error mean were calculated and further statistically presented using IBM-SPSS version24. Moreover, a paired sample t-test was conducted to examine the significant difference between students' scores in pre-tests and post-tests, and was used as the basis of conclusion drawing. The threshold was set at 0.05, where there was a significant effect of flipped learning on students HOTS if the significant value (p-value) was lower than 0.05.

Results

This study is directed to examine the effect of flipped learning strategy on the development of Chinese undergraduate students' higher order thinking skills (HOTS). To reach the empirical answer if flipped classroom instruction affects the students' HOTS, statistical analysis in terms of paired sample t-test was conducted by means of SPSS version 24, and was presented in Table 1 and Table 2. The statistical analysis was based on the participants' responses obtained from pre-tests and post-tests administered in the flipped (experimental) and non-flipped (control) groups.

Table 1 presents statistical analysis of pre-tests and post-tests results of the two groups. It is shown in the results that the mean scores of the post-test in flipped group (22.741) were higher than the mean score of post-test in the control group (17.366). The result suggests that the students taught in flipped learning instruction outperformed those who were in the non-flipped learning environment, in terms of HOTS development.

Table 1. Paired sample statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre non-flipped	14.631	35	5.023	1.958
	Post non-flipped	17.366	35	5.345	1.983
Pair 2	Post flipped	15.142	35	4.867	1.456
	Post flipped	22.741	35	4.895	1.678

Notes: The mean score is based on HOTS questionnaire (max score: 30, min score: 0)

After revealing the difference of post-tests in both flipped and non-flipped groups, the next step is examining the significance between the two mean scores. To this end, a paired sample t-test was administered. The result is demonstrated in table 2.

Table 2. Paired sample t-test

		Mean	Std. Deviation	Std. Error Mean	t	Sig. (2-tailed)
Pair 1	Pre non-flipped Post non-flipped	-2.735	4.32	1.97	3.91	.10
Pair 2	Pre flipped Post flipped	-7.599	5.71	1.74	3.17	.000

The paired sample t-test analysis depicts that the significant value (p-value) of the pre-test and post-test of the flipped group is 0.000 (< 0.05), meaning that there was a significant difference between students' HOTS before the treatment (flipped classroom) and students' HOTS after being involved in flipped learning teaching environment (see pair 2). Meanwhile, Table 2 also shows that there was no significant difference between the result of pre-test and post-test in the non-flipped group with p-value 0.10 (> 0.05), indicating that there was no significant improvement in terms of the non-flipped students' HOTS in the pre-test and post-test. In conclusion, flipped learning instruction has a significant contribution to the development of Chinese undergraduate higher order thinking skills.

Discussion

The results of this study showed that flipped learning instruction has a significant effect on the development of students' higher order thinking skills. This result confirms the finding of Hwang et al. (2019) that flipped learning approach offers ample opportunities for students to enhance and activate critical thinking and problem solving skills. Flipping the classroom provides the students an opportunity to experience joyful, fun, and interesting learning environment (Makruf et al., 2021; Nugroho et al., 2021; Webb & Doman, 2020). Today's university students are very adaptive to technology (they often called as digital native), so that the use of flipped learning strategy, combining pre-class and in-class learning using a digital platform, seems to be appropriate for them. Thus, it is effective to enhance 'the twenty-first century skill', such as critical thinking, problem solving, communication, collaboration, and responsibility (Hinojo Lucena et al., 2020; Karaca & Ocak, 2017; Lee & Lai, 2017; Lo & Hew, 2020; Muharom et al., 2022; Suprapti & Nugroho, 2021).

The integration of digital platform to facilitate pre-class and in-class learning activities is the key concept of the success of flipped learning instruction (Bergmann & Sams, 2012; Lo & Hew, 2020). Using the instructional videos, it offers accurate example and clear description about the materials being discussed. This study has been proven that the shifting from pre-class activities to in-class activities by means of digital platforms (such as videos, LMS, and social media) has successfully increase students' motivation and engagement in classroom activities to comprehend the learning materials. This method allows students to get them exposed to the knowledge and understanding about the class materials. This fact is in line with the finding of Katchamat (2018), Lee and Lai (2017), and O'Flaherty and Phillips (2015) stating that students have positive perspectives on the incorporation of digital platforms to facilitate pre-class and in-class learning.

The result of this study also supports the previous findings (Brewer & Movahedazarhouligh, 2018; Karaca & Ocak, 2017) that flipping the classroom provides an interactive learning environment that helps learners gaining vigorous correspondences with their teachers and classmates, which result in communicative competence enhancement. In addition, , some previous researches on flipped learning depicted that it could reduce the learners' stress that results in the improvement of the learners' performance, active participation, as well as engagement and interaction with their teacher and classmates. Mostly, the learners' stress reduced, and their active participation increased while performing learning activities because the only assignments they did were practicing conversation, filling short quizzes, playing role-plays, watching and responding to videos, and doing some forms of online learning. This result is consistent with many previous studies reported that flipped learning improved learning efficacy and raised the learners' motivation (Baepler et al., 2014; Chen Hsieh et al., 2017; Hung, 2015; Jamaludin & Osman, 2014; Nugroho & Rahmawati, 2020; Sahin et al., 2015).

In this regard, flipped learning assists learners with self-guidelines so they are responsible for their own path of learning and become autonomous learners. The efficacy of flipped learning method in this study is in agreement with O'Flaherty & Phillips (2015), who convinced that the flipped method enables learners to perform an independent learning and thus have more pliable time to determine their own learning style. The result of the current study is also in harmony with a study reported by Katchamat 2018) that the learners usually present high acceptance toward the use of technology in their learning activities to improve self-learning, develop a communicative environment, and enhance learners' accuracy.

This study has several implications for teaching and learning at university level. First, this study offers valuable insights for teachers and instructors to incorporate flipped learning design in enhancing their students' higher order thinking skill. In the era of advanced Information Communication and Technology (ICT) like today, higher order thinking skill as well as digital literacy play a crucial role in supporting the success of the university students. Second, this study suggests that university administrator and curricula developer should begin to acknowledge flipped learning design as a 'modern' approach to teach the university students. It is in line with the paradigm of twenty-first century learning, which considering critical thinking and the acquisition of technology become the most necessary skills that a university student must possess.

Conclusion

In a nutshell, this study provides empirical results that flipped learning instruction successfully contributes to the enhancement of undergraduate students' higher order thinking skills. It was statistically proven using paired sample t-test analysis, and was resulted in significant value (p-value) 0.000 (< 0.05), meaning that compared to pre-test score, students taught in flipped learning environment performed significant improvement in the post-test score, and outperformed the non-flipped students. Thus, it is concluded that there is a significant effect of flipped learning instruction on the development of students' higher order thinking skill. This study offers an alternative approach to teaching university students, particularly teaching critical thinking and digital literacy which become crucial skills nowadays. Similar to other research, this study acknowledges several limitations. First, this study was only conducted in science education context at a university in China. Second, this study is lack of qualitative data to explain potential reasons behind the significant contribution of flipped learning to the students' HOTS. Therefore, future research is suggested to conduct an immense work involving wider number of participants across social backgrounds and characteristics. Moreover, a qualitative study is highly suggested to portray an in-depth understanding about the practice of flipped learning in developing the students' HOTS.

Acknowledgements

Gratitude and acknowledgement go to all participants and the school institution of this study for the support to conduct this research.

References

Al Mamun, M. A., Azad, M. A. K., & Boyle, M. (2021). Review of flipped learning in engineering education: Scientific mapping and research horizon. *Education and Information Technologies*, 1–26. https://doi.org/10.1007/s10639-021-10630-z

Annan, D. K., Onodipe, D. G., & Stephenson, D. A. (2019). Using Student-Created Content Videos in Flipped Learning to Enhance Student Higher-Order Thinking Skills, Engagement, and Satisfaction. *Journal of Education & Social Policy*, *6*(3), 22–31. https://doi.org/10.30845/jesp.v6n3p4

Apino, E., & Retnawati, H. (2017). Developing instructional design to improve mathematical higher order thinking skills of students. *Journal of Physics:*

Conference Series, *812*(1), 12100.

Baepler, P., Walker, J. D., & Driessen, M. (2014). It's not about seat time: Blending, flipping, and efficiency in active learning classrooms. *Computers & Education*, *78*(September), 227–236. https://doi.org/10.1016/j.compedu.2014.06.006

Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*. International society for technology in education.

Birgili, B., Seggie, F. N., & Oğuz, E. (2021). The trends and outcomes of flipped learning research between 2012 and 2018: A descriptive content analysis. *Journal of Computers in Education*, 8(1), 1–30. https://doi.org/10.1007/s40692-021-00183-y

Bredow, C. A., Roehling, P. V, Knorp, A. J., & Sweet, A. M. (2021). To flip or not to flip? A meta-analysis of the efficacy of flipped learning in higher education. *Review of Educational Research*, *91*(6), 878-918. https://doi.org/10.3102/00346543211019122

Brewer, R., & Movahedazarhouligh, S. (2018). Successful stories and conflicts: A literature review on the effectiveness of flipped learning in higher education. *Journal of Computer Assisted Learning*, *34*(4), 409–416. https://doi.org/10.1111/jcal.12250

Chen Hsieh, J. S., Wu, W.-C. V., & Marek, M. W. (2017). Using the flipped classroom to enhance EFL learning. *Computer Assisted Language Learning*, *30*(1), 1–21. https://doi.org/10.1080/09588221.2015.1111910.

Cook, T. D. (2015). *Quasi-experimental design*. Wiley Encyclopedia of Management.

Dimitrios, B., Labros, S., Nikolaos, K., Koutiva, M., & Athanasios, K. (2013). Traditional teaching methods vs. teaching through the application of information and communication technologies in the accounting field: Quo Vadis? *European Scientific Journal*, *9*(28). 73-101.

Ekici, M. (2021). A systematic review of the use of gamification in flipped learning. *Education and Information Technologies*, 26, 1–20. https://doi.org/10.1007/s10639-020-10394-y

Hajibaba, M., Radmehr, F., & Alamolhodaei, H. (2013). A psychological model for mathematical problem solving based on revised Bloom taxonomy for high school girl students. *Research in Mathematical Education*, *17*(3), 199–220.

Hinojo Lucena, F. J., Lopez Belmonte, J., Fuentes Cabrera, A., Trujillo Torres, J. M., & Pozo Sanchez, S. (2020). Academic effects of the use of flipped learning in physical education. *International Journal of Environmental Research and Public Health*, *17*(1), 276. https://doi.org/10.3390/ijerph17010276

Huang, B., Hew, K. F., & Lo, C. K. (2019). Investigating the effects of gamification-enhanced flipped learning on undergraduate students' behavioral and cognitive engagement. *Interactive Learning Environments*, *27*(8), 1106–1126. https://doi.org/10.1080/10494820.2018.1495653

Hugerat, M., & Kortam, N. (2014). Improving higher order thinking skills among freshmen by teaching science through inquiry. *Eurasia Journal of Mathematics, Science and Technology Education*, *10*(5), 447–454. https://doi.org/10.12973/eurasia.2014.1107a

Hung, H.-T. (2015). Flipping the classroom for English language learners to foster active learning. *Computer Assisted Language Learning*, *28*(1), 81–96. https://doi.org/10.1080/09588221.2014.967701

Hwang, G. J., Yin, C., & Chu, H. C. (2019). The era of flipped learning: promoting active learning and higher order thinking with innovative flipped learning strategies and supporting systems. *Interactive Learning Environments*, *27*(8), 991–994. https://doi.org/10.1080/10494820.2019.1667150

Jamaludin, R., & Osman, S. Z. M. (2014). The use of a flipped classroom to enhance engagement and promote active learning. *Journal of Education and Practice*, *5*(2),

124–131.

Jdaitawi, M. (2020). Does flipped learning promote positive emotions in science education? A comparison between traditional and flipped classroom approaches. *Electronic Journal of E-Learning*, *18*(6), 516-524. https://doi.org/10.34190/JEL.18.6.004

Karaca, C., & Ocak, M. A. (2017). Effects of Flipped Learning on University Students' Academic Achievement in Algorithms and Programming Education. *International Online Journal of Educational Sciences*, *9*(2). 527-543.

Katchamat, P. (2018). The Effect of Flipped Classroom Instruction on Appropriacy of English Apology by Thai EFL Learners. *International Journal of Pedagogy and Teacher Education*, *2*(2), 13–119.

Kim, N. H., So, H.-J., & Joo, Y. J. (2021). Flipped learning design fidelity, self-regulated learning, satisfaction, and continuance intention in a university flipped learning course. *Australasian Journal of Educational Technology*, 37(4), 1–19. https://doi.org/10.14742/ajet.6046

Lee, J., Lee, Y., Gong, S., Bae, J., & Choi, M. (2016). A meta-analysis of the effects of non-traditional teaching methods on the critical thinking abilities of nursing students. *BMC Medical Education*, *16*(1), 1–9. https://doi.org/10.1186/s12909-016-0761-7

Lee, J. S., & Drajati, N. A. (2019). English as an international language beyond the ELT classroom. *ELT Journal*, *73*(4), 419–427. https://doi.org/10.1093/elt/ccz018

Lee, K. yuen, & Lai, Y. chi. (2017). Facilitating higher-order thinking with the flipped classroom model: a student teacher's experience in a Hong Kong secondary school. *Research and Practice in Technology Enhanced Learning*, *12*(1), 1-14. https://doi.org/10.1186/s41039-017-0048-6

Lin, H.-C., Hwang, G.-J., Chang, S.-C., & Hsu, Y.-D. (2021). Facilitating critical thinking in decision making-based professional training: An online interactive peer-review approach in a flipped learning context. *Computers & Education*, 173(November), 104266. https://doi.org/10.1016/j.compedu.2021.104266

Lo, C. K., & Hew, K. F. (2020). A comparison of flipped learning with gamification, traditional learning, and online independent study: the effects on students' mathematics achievement and cognitive engagement. *Interactive Learning Environments*, *28*(4), 464–481. https://doi.org/10.1080/10494820.2018.1541910

Makruf, I., Putra, H. R. P., Choiriyah, S., & Nugroho, A. (2021). Flipped Learning and Communicative Competence: An Experimental Study of English Learners. *International Journal of Education in Mathematics, Science and Technology*, *9*(4), 571–584. https://doi.org/10.46328/ijemst.1960

Masrul, A. C., Shen, Z., Guo, X., Sugihara, K., & Nishino, T. (2019). Feasibility study of mixed reality on education of design and planning students based on Bloom taxonomy. *International Journal of Sustainable Society*, *11*(3), 202–219.

Moreno-Guerrero, A.-J., Romero-Rodriguez, J.-M., Lopez-Belmonte, J., & Alonso-Garcia, S. (2020). Flipped learning approach as educational innovation in water literacy. *Water*, *12*(2), 574. https://doi.org/10.3390/w12020574

Muharom, F., Nugroho, A., & Putra P., H. R. & (2022). Self-directed use of digital devices for out-of-class English learning. *International Journal of Education in Mathematics, Science, and Technology* (IJEMST), 10(1), 257-271. https://doi.org/10.46328/ijemst.2245

Nugroho, A. & Rahmawati, A. (2020). "Let's Write a Caption!": Utilizing Instagram to Enhance ESP Students' Writing Skills. *Jurnal BASIS (Bahasa dan Sastra Inggris), 7*(1), 1-12. https://doi.org/10.33884/basisupb.v7i1.1782.

Nugroho, A., Haghegh, M., & Triana, Y. (2021). Emergency Remote Teaching amidst Global Pandemic: Voices of Indonesian EFL Teachers. *VELES Voices of English Language Education Society*, *5*(1), 66-80.

https://doi.org/10.29408/veles%20journal.v5i1.3258

O'Flaherty, J., & Phillips, C. (2015). The use of flipped classrooms in higher education: A scoping review. *The Internet and Higher Education*, *25*, 85–95. https://doi.org/10.1016/j.iheduc.2015.02.002

Öztürk, M., & Çakıroğlu, Ü. (2021). Flipped learning design in EFL classrooms: implementing self-regulated learning strategies to develop language skills. *Smart Learning Environments*, *8*(1), 1–20. https://doi.org/10.1186/s40561-021-00146-x

Sahin, A., Cavlazoglu, B., & Zeytuncu, Y. E. (2015). Flipping a college calculus course: A case study. *Journal of Educational Technology & Society*, *18*(3), 142–152. https://www.jstor.org/stable/jeductechsoci.18.3.142

Saputri, A. C. (2019). Improving Students' Critical Thinking Skills in Cell-Metabolism Learning Using Stimulating Higher Order Thinking Skills Model. *International Journal of Instruction*, *12*(1), 327–342.

Suprapti, S., Nugroho, A., & Putra, H. R. P. (2021). Flipped Learning Instruction to Enhance University Students' Higher Order Thinking Skills. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, *7*(2), 261–269. https://doi.org/10.33394/jk.v7i2.3320

Triana, Y., & Nugroho, A. (2021). Brief ELT in Digital Classroom for Lazy Creative Lecturers (Option After Post Pandemic Recovery): Lecturers' Perspectives. *Indonesian Journal of EFL and Linguistics*, *6*(1), 79–99. http://dx.doi.org/10.21462/ijefl.v6i1.343

Van Alten, D. C. D., Phielix, C., Janssen, J., & Kester, L. (2021). Secondary students' online self-regulated learning during flipped learning: A latent profile analysis. *Computers in Human Behavior*, *118*(May), 106676. https://doi.org/10.1016/j.chb.2020.106676

Wahyuningsih, E., & Baidi, B. (2021). Scrutinizing the potential use of Discord application as a digital platform amidst emergency remote learning. *Journal of Educational Management and Instruction (JEMIN),* *1*(1), 9-18. https://doi.org/10.22515/jemin.v1i1.3448

Wardani, A., & Suharto, T. (2021). Optimizing the role of informal learning in the perspective of Islamic education during the Covid-19 pandemic. *Journal of Educational Management and Instruction (JEMIN),* *1*(1), 28-39. https://doi.org/10.22515/jemin.v1i1.3456

Webb, M., & Doman, E. (2020). Impacts of flipped classrooms on learner attitudes towards technology-enhanced language learning. *Computer Assisted Language Learning*, *33*(3), 240–274. https://doi.org/10.1080/09588221.2018.1557692

Winter, J. W. (2018). Performance and motivation in a middle school flipped learning course. *TechTrends*, *62*(2), 176–183. https://doi.org/10.1007/s11528-017-0228-7