PROSPECTIVE PRIMARY SCHOOL EFL TEACHERS' BELIEFS ABOUT "FLIPPING"

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Abstract

Our paper focuses on the implementation of the flipped classroom model with the students of the subject ICT for EFL teaching and learning at a Spanish university. This pedagogical approach, generally speaking, reverses the traditional learning environment by delivering instructional content outside the classroom and working on it in class. The ultimate goal of our research is to evaluate the aforementioned model, used with a sample of 40 students, through a mixed-method approach. To this aim, a satisfaction survey (Gilboy, Heinerichs & Pazzaglia, 2015) plus two open-ended questions were administered to participants in the study. The results obtained, through both quantitative and qualitative techniques, reveal that the majority of the students completing the evaluation preferred the flipped method compared with the traditional one.

Keywords: English as a foreign language (EFL); flipped classroom (FC); flipped learning (FL); higher education; students' perceptions

1. Introduction

In tune with the new European Space of Higher Education (ESHE), as reported in Domínguez et al. (2017, p. 2), there has been a substantial change in education, which has started embracing innovative didactic proposals such as peer instruction (Mazur, 1996; Crouch & Mazur, 2001), first-exposure learning (Walvoord & Johnson, 1998), just-in-time teaching (Novak, Patterson, Gavrin & Christian, 1999; Novak, 2011) or the inverted classroom (Lage, Platt & Treglia, 2000). All these innovative didactic proposals, together with the influence of the Khan Academy (2006), are going to develop into the so-called *Flipped Learning Approach*, a new learning-centred pedagogical model, as opposed to the traditional teaching-centred approach (Rué, 2007), which emphasizes student preparation before class (Hung, 2015).

According to the definition offered by the Flipped Learning Network (FLN)[1],

[1] The Flipped Learning Network has the mission of providing educators with the knowledge, skills, and resources to implement Flipped Learning successfully. (see https://flippedlearning.org/wp-content/uploads/2016/07/FLIP_handout_FNL_Web.pdf).

> Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter. (Flipped Learning Network, 2014, p.1)

However, we should have in mind, as claimed by the key leaders of the FLN, that flipping a class does not necessarily lead to FL. To engage in *real* FL teachers must incorporate four pillars into their practice (Flipped Learning Network, 2014, p.2):

- *Flexible environment*, with flexible spaces in which students choose when and where they learn.
- *Learning culture*, with in-class time dedicated to exploring topics in greater depth and creating rich learning opportunities.
- *Intentional content*, with FL educators continually thinking about how they can use the Flipped Learning model to help students develop conceptual understanding, as well as procedural fluency.
- *Professional educators*, continually observing their students, providing them with feedback relevant in the moment, and assessing their work; reflective in their practice, connecting with each other to improve their instruction, accepting constructive criticism, and tolerating controlled chaos in their classrooms.

Nwosisi, Ferreira, Rosenberg and Walsh (2016) define flipped instruction or a FC as "a form of blended learning in which students learn new content online by watching video lectures, usually at home, and what used to be homework (assigned problems) is now done in class with teachers offering more personalized guidance and interaction with students, instead of lecturing. This is also known as backwards classroom, flipped classroom, reverse teaching, and the Thayer Method". (p.348)

Santiago and Díez, coordinators of "The FC Project", argue that the FC model is a pedagogical model that transfers specific learning processes to outside the classroom and uses classroom time, together with the teacher's expertise, to facilitate and promote other knowledge acquisition and knowledge practice processes inside the classroom (https://www.theflippedclassroom.es/what-is-innovacion-educativa/). Focusing on the genesis of the model, in the same way that a FC is known by different names (inverted, reverse, upside-down classroom), stories about its origins also differ; though most credit high school Chemistry teachers Jonathan Bergmann and Aaron Sams as the creators of this pedagogical approach (Arnold-Garza, 2014). Bergmann (2011) expressed on the web his idea of where the FC came from as follows:

> In the spring of 2007 Aaron was thumbing through a technology magazine and showed me an article about some software that would record a PowerPoint slideshow including voice and any

> annotations, and then it converted the recording into a video file that could be easily distributed online. As we discussed the potential of such software, we realized this might be a way for our students who missed class to not miss out on learning. Thus, we began to record our live lessons using screen capture software. We posted our lectures online so our students could access them. When we did this, YouTube was just getting started and the world of online video was just in its infancy (…). Our absent students loved the recorded lectures. Students who missed class were able to learn what they missed. Some students who were in class and heard the live lecture began to re-watch the videos. Some would watch them when reviewing for exams. (pp.1-2).

Ouda and Ahmed (2016, p. 425), after reading The Flipped Class Manifest by Bennett, Bergmann, Cockrum, Fisch, Musallam, Overmyer, Sams, and Spencer (2012), sum up the common characteristics of flipped classrooms:

- ✓ Dynamic, active, and deliberate transfer of certain selected parts of the information delivery to outside of the classroom with the intention of freeing up time to take advantage of the face-to-face interaction in school. This is frequently done with teacher-created online videos (also referred to as screencasts or vodcasts).
- ✓ Educators turn out to be guides to understanding instead of distributors of facts and students come to be active learners instead of repositories of information. Making a long-lasting archived and documented tutorial of class content. Advanced students may never watch the videos again. All students can re-watch the video as much as needed. This frees more class time for data collection, active collaboration, and application.
- ✓ Learners have instant and straightforward access to any subject matter when they have need of, leaving the teacher with more opportunities to expand on higher order thinking skills and enrichment.

According to Taylor (2015), there are a number of advantages for both students and teachers when using the FC model. These, in particular, include better student engagement and greater flexibility of learning. However, there are also disadvantages, including student's lack of motivation to participate, technological issues (general technological issues and instructor issues), excessive time to create material, and lack of instructor contact.

Students in the FC are given more opportunities to develop higher-order thinking skills under teacher guidance and with peer support as needed because in-class lectures that often require only lower levels of thinking skills in Bloom's taxonomy (1984) are replaced with instructional videos (Hung, 2015).

Even though some studies have suggested no significant differences between flipped and non-flipped models regarding academic outcomes (Adnan, 2017; Guidry, Cubillos & Pusecker, 2013; as cited in Haghighi, Jafarigohar, Khoshsima & Vahdany, 2019), other studies (Hsieh, Wu & Marek, 2017; Day & Foley, 2006; Flumerfelt & Green, 2013; Haghighi,

Jafarigohar, Khoshsima & Vahdany, 2019; Hung, 2015, 2017a, 2017b; Lee & Wallace, 2018; Nguyen, 2018) suggest that flipped learning can make students more motivated and help them obtain better learning results. However, the need for further research into Flipped Learning in higher education and specifically into students' perceptions towards its use, is supported by some researchers (Basal, 2015; Cilliers & Pylman, 2019; Gilboy et al., 2015; Nouri, 2016).

To fill that gap, the present study sets out to flip the classroom for students of the subject called 'ICT for EFL teaching and learning', to examine the students' perceptions towards their learning experience. To this aim, a video-tutorial was created by the teacher and uploaded into the university's learning management system (LMS).

The research questions we address in this study are as follows:

RQ1: What are the students' perceptions of the use of video lectures?

RQ2: What are the students' perceptions of active learning inside the classroom?

RQ3: What are the students' perceptions of not having a teacher present during the virtual online class?

RQ4: What are the students' perceptions of the advantages of FL?

RQ5: What are the students' perceptions of the disadvantages of FL?

2. Methodology

2.1. Research design

Quantitative research establishes statistically significant conclusions about a population by studying a representative sample of the population (Creswell, 2003; as cited in Lowhorn, 2007, p. 1), and is based on the measurement of quantity. In contrast, qualitative research is non-numerical and has a discovery-oriented and holistic goal (Forman, Creswell, Damschroder, Kowalski & Krein, 2008, p.765). Creswell (2015, as cited in Doyle, Brady & Byrne, 2016, p.3) suggests that mixed-methods research is an approach in which the researcher collects, analyses, and interprets both quantitative and qualitative data, integrates the two approaches in various ways, and frames the study within a specific design.

The present study involved a mixed-methods approach, quantitative (a 5-item survey, RQ: 1-3) and qualitative (2 open-ended questions, RQ: 4-5), to evaluate the impact of FL on the participants. The main reason for selecting this approach is that it provides a more comprehensive account of phenomena under study (see Doyle et al., 2016).

2.2. Participants

The participants in the study (N=40) were prospective primary school EFL teachers taking ICT for EFL teaching and learning at a Spanish university, with no previous FC experience. Students enrolled in this subject met weekly for two class periods (a 90-minute and a 120-minute class period) in a multimedia lab, where each of them had access to a desktop computer. All participants were in the third year of the Primary Education Degree (foreign languages specialisation), with an average age of 20-23.

In selecting the sample, purposeful sampling was used (Creswell, 2013), with participants being judged to be adequate sources of information needed to answer the research questions.

2.3. Procedure

To control for expectancy effects, we ensured that participants were not informed of the specific purposes of the study, and when we were about to explain the potential benefits of authoring tools for creating educational resources, students were asked, as homework, to watch a video about the use of Hot Potatoes (http://hotpot.uvic.ca), a simple software freeware package that allows you to create on-line exercises in five different formats. The video had been previously recorded and uploaded by the teacher into the university's LMS. They were given a week to watch the video and try to understand how the tool works, the way to create the five types of exercises, and how to add different elements, such as images, videos, or sound files. During the following two weeks, students were engaged in hands-on in-class activities related to what they had learned from the video, with the teacher freed up for additional one-on-one time. They were encouraged to learn from and to collaborate with one another. In the fourth week, all the participants were asked to fill out a learning experience questionnaire that had been previously uploaded into the LMS.

2.4. Data collection and analysis

In order to achieve the aims of the research, we implemented the survey used by Gilboy et al. (2015) in their study to assess the students' perceptions of the FC learning environment. According to its authors, the survey had been approved by the Human Subjects Committee of West Chester University and constructed by the faculty associate who had experience in pedagogy related to this approach and led the campus-wide initiative on the FC. Cronbach alpha for the 5 Likert-scale items had also been performed and had revealed a value of .71, an acceptable value for reliability (Gilboy et al., 2015, p. 112).

The students were asked to rate the survey items using a 5-point Likert scale (Strongly Agree = 1, Agree = 2, Neutral = 3, Disagree = 4, Strongly Disagree = 5).

Table 1. Students' perceptions of FC before and during class

Survey Items*	Total n* (%)	1 n (%)	2 n (%)	3 n (%)	4 n (%)	5 n (%)
I liked the ability to watch the video rather than having straight lecture for this topic.	40 (100)	20 (50)	14 (35)	6 (15)	0 (0)	0 (0)
I would rather have the professor lecture for 2 class periods than complete the activities that were carried out.	40 (100)	2 (5)	2 (5)	10 (25)	14 (35)	12 (30)
The use of screen casting (videos) the lecture enabled me to learn the material more effectively than lecture alone.	40 (100)	14 (35)	20 (50)	6 (15)	0 (0)	0 (0)
I learned how to use the material with these teaching methods (screen cast of lectures and active learning in class) of instruction more than I did when we used traditional methods (lecture only) of instruction.	40 (100)	16 (40)	14 (35)	10 (25)	0 (0)	0 (0)
I felt disconnected without a teacher being present during the virtual online class.	39 (97.5)	2 (5)	0 (0)	8 (20)	17 (42.5)	12 (30)

*Overall n=40; not all respondents answered every question

*Strongly agree: 1; Agree: 2; Neutral: 3; Disagree: 4; Strongly disagree: 5

We added 2 open-ended questions, to elicit students' opinions about the advantages and disadvantages of the FC:

Q1: Advantages of the FC model

Q2: Disadvantages of the FC model

Data obtained from the open-ended questions were analyzed via content analysis method (Bauer, 2000) and similar ideas were grouped under proper headings.

The survey was anonymous in order to provide sincere and honest responses.

3. Results

Table 1 shows the students' level of agreement and disagreement on the key items from the survey. 85% of the students preferred watching the video lecture to F2F (face-to-face) lecture. The majority of students (65%) would rather complete the in-class activities for 2 class periods

than listen to the professor lecture for the same amount of time. 85% of students considered that they learned the material more effectively by watching the video lecture rather than F2F lecture. 75% of the students stated that they learned how to use the material more effectively with the video lecture and active learning, compared with lecture only. The majority of the students (72.5%) did not feel disconnected to the teacher during the virtual online class.

The qualitative data of the open-ended questions showed some important strengths of the FC approach. Students liked the ability to work at their own pace. They liked the possibility of working when and wherever they want. They spoke about learner autonomy, more interaction with peers and teacher, and more in-class time to solve questions.

On the other hand, concerns raised by students included not having the professor available to ask questions during the out-of-class sessions (lack of instant feedback). Participants in the study also mentioned the need for an internet connection and the technology required. They wrote about the students' responsibility for their own work and pointed out that it is easier for them to get frustrated. Furthermore, according to most of them, the teacher cannot see the problems students face. Regarding the teacher's role, they suggested that the teacher has to have a certain level of computer literacy and they put special emphasis on the more teacher working hours.

4. Discussion

The main objective of our study has been to analyse the learners' perceptions of the FC approach. The findings of this work support much of the research conducted in this sense, that most learners are more satisfied with learning in a FC as opposed to a traditional one (Adnan, 2017; Alsowat, 2016; Arráez, Lorenzo, Gómez, & Lorenzo, 2018; Frydenberg, 2013; Gilboy et al., 2015; Hung, 2015; McGivney-Burelle & Xue, 2013; Mok, 2014; Opazo, Acuña, & Rojas, 2016). Notwithstanding, there are also some studies that show a preference for the traditional method (Chung & Chi, 2017; DeSantis, Van Curen, Putsch, & Metzger, 2015; Strayer, 2012).

In our study, results were similar to those obtained by Gilboy et al. (2015), with students showing a total preference for participation in the in-class activities rather than listen to the teacher lecture. The participants reported that they learned the material more effectively with the use of videos as compared to the lecture alone, and also that they learned how to use the material with screen cast of lectures and active learning in class more than they did when they used lecture only.

The ability to work at one's own pace, the possibility of working whenever and wherever one wants, and the learner autonomy were some of the advantages perceived by

students. The fact that the course materials are online provides a high level of control over the pace of instruction, allowing learners to re-wind, pause, or speed up lectures whenever and wherever they want. Students can also preview and review the content, as many times as they want to, based on their needs and at their own pace (Hung, 2015). In addition to the aforesaid aspects, more interaction with peers and teacher, and more in-class time to solve questions (Basal, 2015) were also mentioned by participants as important benefits of the FL model.

Nevertheless, students reported that it is easier for them to get frustrated, as they become responsible for their own work (Strayer, 2012). The lack of instructor contact (Taylor, 2015), the lack of instant feedback in the out-of-class sessions, and the need for an internet connection and the technology required were also regarded as disadvantageous factors (Gündüz & Akkoyunlu 2019; Ramírez, Hinojosa, & Rodríguez, 2014). Besides, as prospective EFL teachers, their concerns also include the need for a certain level of computer literacy on the teacher's part and more teacher working hours (Lo & Hew, 2017; Taylor, 2015).

The results also lead us to conclude that teachers should be aware of the crucial importance of their role for the successful development of the FL process (Andujar, Salaberri-Ramiro, & Martínez, 2020). The role of the teacher has now changed to that of a guide, facilitator, and organizer; and teachers should be able to plan in detail what to do both inside and outside the classroom as well as promote student engagement (Basal, 2015). We agree with Fisher, Ross, LaFerriere and Maritz (2017) in that students may require extra help in the initial implementation of the FL model, thereby maximising student engagement and satisfaction earlier in the course (p.114). Teachers must also assume that flipping a classroom demands a certain level of computer literacy and that creating the instructional materials can be very time-consuming (Lo & Hew, 2017; Taylor, 2015), at least in the beginning, since those materials can be reused in future courses. Students have to watch the videos if they want to take advantage of the in-class time. Therefore, videos must be motivating, engaging and attractive (Lo & Hew, 2017).

At this point, we should mention the urgent need for teacher training in the FL model (Lo and Hew, 2017) if we want to do things properly. Poor internet connection to support FL and technology availability issues must also be considered when implementing the FL approach (Gündüz & Akkoyunlu 2019; Ramírez, Hinojosa, & Rodríguez, 2014).

5. Conclusions

Drawing on the findings of this research, it can be maintained that, despite the general preference of students for the flipped model of instruction, there is a need for immediate

feedback in out-of-class sessions. However, we should notice that, even though one of the concerns most raised by the students included not having the teacher available to ask questions during the out-of-class portion, the majority of participants in our study reported that they did not feel disconnected at all (Gilboy et al. 2015; Opazo et al., 2016); although results from other research studies do not corroborate this finding (Arráez et al., 2018).

In sum, students seem to be more satisfied with the FL environment than with the traditional learning environment. The FL approach can promote EFL learning achievement and it affects learners' attitudes towards EFL learning positively (Lee and Wallace, 2018). Moreover, this approach is considered one of the most promising in our days since it integrates technology and active learning strategies (Hung, 2015). We can then conclude that FL is worth implementing, although very careful attention should be paid to the design of the FL environment.

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References

Adnan, M. (2017). Perceptions of senior-year ELT students for flipped classroom: A materials development course. *Computer Assisted Language Learning*, *30*(3-4), 204-222.

Alsowat, H. (2016). An EFL flipped classroom teaching model: Effects on English language higher-order thinking skills, student engagement and satisfaction. *Journal of Education and Practice, 7*(9), 108-121.

Andujar, A., Salaberri-Ramiro, M. S., & Martínez, M. S. C. (2020). Integrating flipped foreign language learning through mobile devices: Technology Acceptance and Flipped Learning Experience. *Sustainability, 12*(3), 1110. Retrieved from https://www.mdpi.com/2071-1050/12/3/1110

Arnold-Garza, S. (2014). The flipped classroom teaching model. *Communications in Information Literacy, 8*(1), 7-22. Retrieved from https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1072&context=comminfolit

Arráez, G., Lorenzo, A., Gómez, M., & Lorenzo, G. (2018). La clase invertida en la educación superior: percepciones del alumnado. *International Journal of Developmental and Educational Psychology. INFAD Revista de Psicología, 2*(1), 155-162.

Basal, A. (2015). The implementation of a flipped classroom in foreign language teaching. *Turkish Online Journal of Distance Education-TOJDE, 16*(4), 28-37. Retrieved from https://files.eric.ed.gov/fulltext/EJ1092800.pdf

Bauer, M. W. (2000). Classical content analysis: A review. In M. Bauer & G. Gaskell (Eds.), *Qualitative Researching with Text, Image and Sound* (pp. 131-151). London: Sage.

Bennett, B., Bergmann, J., Cockrum, T., Fisch, K., Musallam, R., Overmyer, J., Sams, A., & Spencer, D. (2012). The flipped class manifest. *The Daily Riff*. Retrieved from http://www.thedailyriff.com/articles/the-flipped-class-manifest-823.php

Bergmann, J. (2011). The flipped class blog: The history of the flipped class. How the Flipped Class was born. Retrieved from http://blendedclassroom.blogspot.com/2011/05/history-of-flippedclass.html

Bloom, B. S. (1984). *Taxonomy of Educational Objectives*. Boston, MA: Allyn and Bacon.

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*(1-2), 1-21.

Chung, S. J., & Chi, Y. (2017). The effect of flipped classroom on learning outcome and students' learning preference in a large general education class. *Korean Journal of General Education, 11*(6), 359-390.

Cilliers, L. & Pylman, J. (2019). Students' perceptions of the flipped classroom. A traditional university in the Eastern cape. *Proceedings of the South Africa International Conference on Education* (pp. 89-96). Retrieved from https://aa-rf.org/wa_files/saiced-2019-proceedings.pdf#page=101

Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. (2nd ed.). Thousand Oaks: Sage Publications.

Creswell, J. W. (2013). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousands Oaks: Sage Publications.

Creswell, J. W. (2015). *A Concise Introduction to Mixed Methods Research*. Thousand Oaks, CA: Sage

Crouch, C. H., & Mazur, E. (2001). Peer instruction: Ten years of experience and results. *American Journal of Physics, 69*, 970-977. Retrieved from http://web.mit.edu/jbelcher/www/TEALref/Crouch_Mazur.pdf

Day, J., & Foley, J. (2006). Evaluating web lectures: A case study from HCI. Paper presented at the Conference on Human Factors in Computing Systems, Montreal, Quebec, Canada. Retrieved from http://dl.acm.org/citation.cfm?doid=1125451.1125493

DeSantis, J., van Curen, R., Putsch, J., & Metzger, J. (2015). Do students learn more from a flip? An exploration of the efficacy of flipped and traditional lessons. *Journal of Interactive Learning Research*, *26*(1), 39-63.

Domínguez, J., Peragón, C. E., Vara, A., Jiménez, A., Muñoz, M. J., López, M. C., & Leva, B. (2017). Flipped "learning": aplicación del enfoque Flipped Learning a la enseñanza de la lengua y literatura españolas. *Revista de innovación y buenas prácticas docentes, 2*, 1-23. Retrieved from http://www.uco.es/ucopress/ojs/index.php/ripadoc/article/view/9614/9085

Doyle, L., Brady, A. M., & Byrne, G. (2016). An overview of mixed methods research – revisited. *Journal of Research in Nursing*, *21*(8), 623-635. Retrieved from https://www.researchgate.net/publication/311972089_An_overview_of_mixed_methods_research_-_revisited

Fisher, R., Ross, B., LaFerriere, R., & Maritz, A. (2017). Flipped learning, flipped satisfaction, getting the balance right. *Teaching & Learning Inquiry*, *5*(2), 114-127. Retrieved from https://journalhosting.ucalgary.ca/index.php/TLI/article/view/57358/43133

Flipped Learning Network (FLN). (2014). The Four Pillars of F-L-I-P™. Retrieved from https://flippedlearning.org/wp-content/uploads/2016/07/FLIP_handout_FNL_Web.pdf

Flumerfelt, S., & Green, G. (2013). Using Lean in the flipped classroom for at risk students. *Educational Technology & Society, 16*(1), 356-366.

Forman, J., Creswell, J. W., Damschroder, L, Kowalski, C. P., & Krein, S. L. (2008). Qualitative research methods: Key features and insights gained from use in infection prevention research. *American Journal of Infection Control, 36*(10), 764-771.

Frydenberg, M. (2013). Flipping Excel. *Information Systems Education Journal, 11*(1), 63-73.

Gilboy, M. B., Heinerichs, S., & Pazzaglia, G. (2015). Enhancing student engagement using the flipped classroom. *Journal of Nutrition Education and Behavior, 47*(1), 109-114.

Guidry, K. R., Cubillos, J., & Pusecker, K. (2013). The connection between self-regulated learning and student success in a hybrid course. Paper presented at the Association for Institutional Research Annual Forum, Long Beach, CA. Retrieved from http://www.mistakengoal.com/docs/Self-regulated_learning_hybrid_course.pdf

Gündüz, A. Y., & Akkoyunlu, B. (2019). Student views on the use of flipped learning in higher education: A pilot study. *Education and Information Technologies, 24*, 2391-2401.

Haghighi, H.; Jafarigohar, M.; Khoshsima, H., & Vahdany, F. (2019). Impact of flipped classroom on EFL learners' appropriate use of refusal: achievement, participation, perception. *Computer Assisted Language Learning*. *32*(3), 261-293. Retrieved from https://www.researchgate.net/publication/328750597_Impact_of_flipped_classroom_on_EFL_learners'_appropriate_use_of_refusal_achievement_participation_perception

Hung, H. T. (2015). Flipping the classroom for English language learners to foster active learning. *Computer Assisted Language Learning, 28*(1), 81-96.

Hung, H. T. (2017a). Design-Based Research: Redesign of an English Language Course Using a Flipped Classroom Approach. *TESOL Quarterly, 51*(1), 180-192.

Hung, H. T. (2017b). The integration of a student response system in flipped classrooms. *Language Learning & Technology, 21*(1), 16-27. Retrieved from https://scholarspace.manoa.hawaii.edu/bitstream/10125/44593/1/21_01_hung.pdf

Lage, M. J., Platt, G. J., & Treglia, M. (2000). Inverting the classroom: A gateway to creating an inclusive learning environment. *The Journal of Economic Education, 31*, 30-43.

Lee, G., & Wallace, A. (2018). Flipped learning in the English as a foreign language classroom: Outcomes and perceptions. *TESOL Quarterly, 52*(1) 62-84.

Lo, C. K., & Hew, K. F. (2017). A critical review of flipped classroom challenges in K-12 education: possible solutions and recommendations for future research. *Research and Practice in Technology Enhanced Learning, 12*(4), 1-22. Retrieved from https://link.springer.com/content/pdf/10.1186/s41039-016-0044-2.pdf

Lowhorn, G. L. (2007). Qualitative and quantitative research: How to choose the best design. Paper presented at Academic Business World International Conference, Nashville, Tennessee. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2235986

Mazur, E. (1996). *Peer Instruction: A User's Manual*. Upper Saddle River, NJ: Prentice Hall.

McGivney-Burelle, J., & Xue, F. (2013). Flipping calculus. *PRIMUS*, *23*(5), 477-486.

Mok, H. N. (2014). Teaching tip: The flipped classroom. *Journal of Information Systems Education, 25*(1), 7-11.

Nguyen, T. (2018). Implementation of English flipped classrooms: Students' perceptions and teacher's reflection. *International Journal of Research Studies in Language Learning, 7*(3), 87-108.

Novak, G. M. (2011). Just-in-time teaching. *New Directions for Teaching and Learning, 128*, 63-73.

Novak, G. M., Patterson, E. T., Gavrin, A. D., & Wolfgang, C. (1999). *Just-in-Time Teaching: Blending active Learning with Web Technology*. Upper Saddle River, NJ: Prentice Hall.

Nouri, J. (2016). The flipped classroom: for active, effective and increased learning – especially for low achievers. *International Journal of Educational Technology in Higher Education*, *13*, 33.

Nwosisi, C., Ferreira, A., Rosenberg, W., & Walsh, K. (2016). A study of the flipped classroom and its effectiveness in flipping thirty percent of the course content. *International Journal of Information and Education Technology, 6*(5), 348-351. Retrieved from https://www.researchgate.net/publication/276427778_A_Study_of_the_Flipped_Classroom_and_Its_Effectiveness_in_Flipping_Thirty_Percent_of_the_Course_Content

Opazo, A. R., Acuña, J. M., & Rojas, M. P. (2016). Evaluación de metodología flipped classroom: primera experiencia. *INNOEDUCA. International Journal of Technology and Educational Innovation, 2*(2), 90-99.

Ouda, H., & Ahmed, K. (2016). Flipped learning as a new educational paradigm: An analytical critical study. *European Scientific Journal, 12*, 417-444. Retrieved from https://www.researchgate.net/publication/312166864_Flipped_Learning_As_A_New_Educational_Paradigm_An_Analytical_Critical_Study

Ramírez, D., Hinojosa, C., & Rodríguez, F. (2014). Advantages and disadvantages of flipped classroom: STEM students' perceptions. 7th International Conference of Education, Research and Innovation ICER/2014 (pp. 17-19). Seville, Spain: IATED.

Rué, J. (2007). *Enseñar en la Universidad: El EEES como reto para la Educación Superior*. Madrid: Narcea.

Strayer, J. F. (2012). How learning in an inverted classroom influences cooperation, innovation and task orientation. *Learning Environment Research, 15*, 171-193.

Taylor, A. (2015). Flipping great or flipping useless? A review of the flipped classroom experiment at Coventry University London Campus. *Journal of Pedagogic Development, 5*(3), 57-65. Retrieved from https://uobrep.openrepository.com/handle/10547/584227

Walvoord, B., & Johnson, V. (1998). *Effective Grading. A Tool for Learning and Assessment*. San Francisco: Jossey-Bass.