EFL Grammar Teaching Applying the Just-in-Time Teaching Methodology: An Exploratory Study

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Abstract

Most students and practitioners commonly see grammar teaching and learning as both tedious and unattractive experiences. In this sense, more innovative ways of presenting foreign language grammar are needed. One such novel approach is Just-in-Time Teaching (JiTT), which has proven to be beneficial in a wide array of disciplines, including language learning. The present exploratory study aims to examine how JiTT contributes to success rates in English grammar learning at two proficiency levels, and to analyse how participants perceive this methodological approach. Sixty-four English as a foreign language students, divided into beginners and intermediate learners, were exposed to five JiTT grammar lessons throughout an academic semester. Participants' answers on JiTT quizzes and satisfaction questionnaires were recorded and compared to their performance on a final exam based on the same five grammar points presented through JiTT. Statistical analyses revealed that JiTT had little impact on learners' success rates in grammar learning, although a higher impact was observed in intermediate learners, in comparison to beginners. However, both groups of participants showed positive attitudes towards the intervention. Results are discussed in the light of how teaching English grammar through JiTT contributes to success rates. The potential of JiTT as a good methodology to be used in foreign language teaching is also addressed.

Keywords: *Flipped Classroom, Grammar Learning and Teaching, Just-in-Time Teaching, Learners' Perceptions, Success Rates*

Introduction

Attaining an advanced foreign language (FL) level can be indeed an arduous task for learners, especially if the input they are exposed to and instruction time are limited (Muñoz, 2008). One of the areas learners may find difficult is grammar learning. Indeed, grammar teaching has not changed greatly during the last decades, despite the bulk of research conducted on grammar learning and teaching (Larsen-Freeman, 2015). However, grammar still remains central to

many language teaching programmes, since grammar knowledge is crucial to assign meaning to language users' messages when contextual information is lacking (Thornbury, 1999). Without grammar, it is highly likely that language would no longer be a medium of communication, but a set of unconnected words conveying no proper meaning. As Wang (2010, p. 80) puts it, "without grammar, language, communicative knowledge and competence are just 'castles in the air'". Similarly, grammar is said to be linked to different linguistic aspects: contextual word guessing (Ranjbar, 2012), critical thinking skills (Ünaldi & Yüce, 2021), reading skills and comprehension (Zheng et al., 2023), and writing ability (Marjokorpi, 2023), among others. Hence, it could be concluded that grammar competence seems to be the key to improve one's general proficiency level in the target language (Wang, 2010). Despite this pivotal role grammar plays in language learning, its teaching has mainly followed a rather traditional approach, and it is thus in need of being revamped. In the light of the above, the present study aims at exploring alternative more innovative ways from which learners may learn FL grammar more easily (Pawlak, 2021), more specifically, the implementation of Just-in-Time Teaching (JiTT; Novak et al., 1999) in an English subject for pre-service teachers.

Literature Review

For a long time, English as a foreign language (EFL) grammar teaching has followed a traditional approach, mainly consisting in the presentation-practice-production sequence –that is, presenting the grammar points explicitly in class to later practice them using drills and exercises, with the aim of using them in real communicative situations (Larsen-Freeman, 2009). However, such sequence has been criticised because of a lack of opportunities to use the target grammatical constructions in authentic communicative situations (Larsen-Freeman, 2003). Similarly, grammar teaching might be perceived as tedious by some EFL learners (Al-Mekhlafi & Nagaratman, 2011; Andrews, 2003; Jean & Simard, 2011) and it can even be the reason for dropping FL lessons (Vakili & Mohammed, 2020). It could thus be said that grammar would need to be taught following more innovative ways (Pawlak, 2021). In this respect, Pawlak (2021) comments on the different approaches which have been used lately to move away from more traditional techniques. For example, adopting a task-based approach catering to learners' needs (Shintani, 2015), flooding and enhancing the target grammatical constructions (Labrozzi, 2016), or manipulating corrective feedback (Lee, 2020) have all been listed as innovative solutions to more traditional approaches. On a different note, grammar learning and overall language proficiency seem to have a two-way relationship, influencing each other (Ellis, 2006; McNamara, 1996; Oller, 1983). Hence, it is not delusive to think that any approach used to teach and learn grammar will also be mediated by learners' proficiency level in the target language. In this respect, it could be claimed that learning grammar through both traditional and innovative approaches would be a more challenging task for beginners as opposed to more advanced learners.

Apart from the aforementioned approaches, another innovative solution to the traditional sequence of grammar teaching could be the JiTT approach. Although this teaching methodology has been highly acclaimed in a wide array of disciplines (Simkins & Maier, 2010), to the authors' best knowledge, it has not been empirically tested with grammar teaching and learning. JiTT is a strategy based on the idea that students work autonomously at home in preparation for the upcoming classroom meeting (Novak, 2011). First, students' task is to

understand the theoretical and/or practical material provided by the instructor to then reflect upon their difficulties, thus allowing the teacher to adjust the lesson to the students' needs. Hence, teachers provide feedback and assistance while implementing in-class collaborative, problem-solving activities and group discussions (López Rodríguez et al., 2016).

It has been argued that JiTT has several advantages over traditional teaching methods. First, it involves more personalised teaching and learning (Bergmann & Sams, 2012; O'Flaherty & Phillips, 2015). Also, it promotes autonomous learning, as students learn to regulate their own learning process (O'Flaherty & Phillips, 2015; Zimmerman & Schunk, 2011). Moreover, JiTT is said to lead to better and more robust learning rates at the same time it improves students' perceptions of the courses taught following such an approach (Prieto Martín et al., 2018). Further, JiTT has also been shown to promote students' motivation towards the subject matter (Camp et al., 2010) and their active learning (Alfadda et al., 2022), since they see themselves involved in lesson design as well as their reflections taken into account. Besides that, previous studies (e.g., Enfield, 2013; Mason et al., 2013; Phillips & Trainor, 2014) have demonstrated that learners feel that having more relevant in-class practice benefits them when it comes to learning content. In contrast, though, some other studies (Akçayır & Akçayır, 2018; Betihavas et al., 2016; Brewer & Movahedazarhouligh, 2018; Chen et al., 2017) have evinced students' mixed perceptions of JiTT and their anecdotal satisfaction with such methodological approach. Indeed, although students see JiTT as beneficial when learning, they also describe it as a demanding (Sarvamangala & Al-Sharafi, 2018) and challenging approach (Oates, 2019).

As regards language learning, JiTT is said to be effective in addressing the constraints of EFL contexts (Lee & Wallace, 2018). Typically, language learners positively value the shift from a traditional lecture-based lesson to a more student-centred and autonomous learning method (Campillo-Ferrer & Miralles-Martínez, 2021), and this change in the teaching approach tends to lead to better attitudes towards English learning (Chantoem & Rattanavich, 2016). Moreover, JiTT has proven effective in improving learners' speaking (Teng, 2018) and writing (Chantoem & Rattanavich, 2016) skills, and satisfaction with the goals achieved in language courses has also been enhanced when students have followed the JiTT approach (Hung, 2017). Indeed, Colomo-Magaña et al. (2020) surveyed 123 trainee teachers and concluded that the application of JiTT fostered the development of oral skills and the improvement of learning abilities, which could be linked to the fact that JiTT may lower learners' anxiety when speaking in the FL (Edwards & Murphey, 2006). Also, Abreu and Knouse (2014) showed that JiTT allows for a higher number of opportunities for language production, both written and oral. In addition, Hao (2016) and Hung (2015) also claimed that JiTT was an effective approach to enhance EFL skills, and Alffada et al. (2022) saw that it promoted active learning in the EFL classroom.

Focusing on grammar, which is the subject of study of this paper, Evseeva and Solozhenko (2015) pointed out JiTT's effectiveness when learning grammar rules and structures, since learners have access to more diverse learning resources. Similarly, Bezzazi (2019) saw that flipping the language classroom led to more robust grammar learning than more traditional approaches.

Rationale and Research Questions

Despite the many potential benefits outlined in the previous section, there is very limited research on JiTT's contribution to EFL learning success rates, and more specifically to grammar teaching. Furthermore, most studies have primarily focused on students' perceptions, so there is virtually no empirical quantitative research considering the effect JiTT can have on FL learning, and less so across different proficiency levels. Hence, this exploratory study aims at filling this gap by applying the JiTT methodology throughout an academic semester in the EFL university classroom and analysing the role of target language proficiency in such experience. The research questions (RQ) the present study seeks to answer are:

RQ1: At the beginner and intermediate levels, to what extent does the performance on JiTT quizzes contribute to explaining success rates in EFL grammar learning?

RQ2: How does the perception of JiTT change across beginner and intermediate levels?

Materials and Methods

Participants

A final pool of 64 EFL learners participated in the intervention. All of them were enrolled in the Early Childhood Education degree at a Catalan university. Most of them were 20 years old at the time data were collected, and most participants identified themselves as female (92.2%) rather than male (7.8%). They were all Catalan / Spanish bilinguals and had received EFL instruction for many years, as this language is a compulsory subject since age six in the Catalan educational system. Hence, they should have had a minimum of 1,300 hours of formal exposure to the target language prior to the start of the intervention. However, despite this amount of exposure, 40 participants (62.5%) were still beginners and 24 (37.5%) were intermediate learners, according to the results of the levels test (see Results section). At the university, they were all enrolled in an obligatory EFL course, which is one of the core subjects of their degree and the only obligatory course fully taught in English. This course consists of a total of 150 hours: 60 hours are face-to-face, 45 hours are spent on teacher-supervised practice, and the remaining 45 hours are devoted to autonomous work. It is a first-year subject taught during the first semester and revolves around a traditional coursebook at the B2.1 level and a prominent metalinguistic component. The course is divided into five units, corresponding to the first five units in the book, in which all language skills are practised, with grammar being taught in all of them.

Instruments

Oxford placement test

In order to diagnose participants' proficiency level prior to the beginning of the intervention, the Oxford Placement Test (OPT; Allan, 2004) was administered. This test, which gives a direct correspondence between testees' scores and the Common European Framework of Reference for languages (CEFR; Council of Europe, 2020), is divided into two parts: grammar and listening. The grammar part, which taps into grammar, vocabulary and reading skills, consists of 100 written multiple-choice questions (some stand-alone and some embedded in a text). Learners need to decide which of the three options given is grammatically correct, being 100 points the maximum score learners can obtain. A sample item from the grammar test is:

Item #6. In deserts there isn't *the / some / **any*** grass.

The listening part, focusing on reading and listening skills, consists of another set of 100 sentences, not linked to one another, uttered by an English native speaker. Test takers are asked to listen to a recording and decide which of the two options given in each sentence corresponds with the version heard in the recording. Both options are semantically and grammatically plausible, so participants can only rely on their listening skills to choose the correct answer. The maximum score is also 100. Hence, this means that, overall, learners can get 200 points in the OPT. A sample item from the listening test is:

Item #3. This beard of mine is awfully itchy. I'll be glad when it *goes / **grows***.

JiTT materials

JiTT materials were specially tailored based on five grammar points presented in the textbook: past tenses, comparatives and superlatives, modal verbs of speculation and deduction, relative clauses, and gerunds and infinitives, in this order. There were five materials for each of these grammar points: a study guide, a PowerPoint presentation, some videos –these three resources would be the so-called *study materials*–, a quiz, and a diagnostic questionnaire. All of them were available on the institutional Virtual Campus on Moodle.

Study materials

The study guide was meant to guide learners throughout the process, and included a description of the study materials, listed the main learning outcomes expected from the process (e.g., getting familiar with comparatives and superlatives and knowing when and how to use them), and gave detailed instructions to learners on the procedure to follow during the task. The study guide was especially helpful at the beginning of the teaching intervention, since it was a new experience for most students, and they needed further instructions than those provided in class.

Apart from the study guide, course teachers prepared a PowerPoint presentation which followed a traditional approach and explained the grammatical points from a theoretical perspective. This presentation was based on the grammar reference included in the coursebook and complemented by other materials and examples taken from different sources. At the end of such PowerPoint presentations, there were some links to YouTube videos that illustrated the grammar points under consideration. These videos were mainly a repetition of what had been presented in written form but offered visual support. Moreover, some included more advanced content for those students who felt that they needed an extra challenge.

Quizzes

Participants were instructed to take a quiz on the grammar points to see if they had understood and mastered what they had been presented in the study materials. Such quizzes included different types of questions: multiple-choice, cloze tests, fill-in-the gaps, and spot and correct the mistakes, with a predominance for multiple-choice and fill-in-the-gaps tasks, since they were the types of exercises with which participants were most familiar. All the quizzes followed a focus-on-form approach (Long, 1991), as they asked participants to reflect upon the target constructions which were the object of study and necessary to complete the quizzes successfully. Only one attempt was allowed, and they were set up in such a way that participants could see their scores as well as the correct and incorrect answers immediately after submitting the attempt, and could thus reflect upon them in the follow-up diagnostic

questionnaire. That said, none of these quizzes were part of the course assessment, so getting a high or low mark had no impact on the participants' final grade of the subject.

Diagnostic questionnaire

The diagnostic questionnaire asked students to reflect upon their learning process on the basis of their results on the quiz, and it could not be accessed until students had completed the latter. The type of questions was the same for the five quizzes, although the response options were adapted depending on the target grammar point. Participants were asked about the importance of the concepts they had learned, whether they had any serious doubts that should be addressed in class, the topic(s) they had problems with and so they considered should be further tackled, or the points that they considered they had mastered and wanted to further explore on their own.

In the second questionnaire, students were additionally asked two yes-no questions about their opinion on whether the JiTT strategy had been useful so far and whether they wanted to continue using it in the course. Similarly, in the final questionnaire, there was an open-ended question for participants to describe their experience with JiTT.

Final exam

Among other exercises, the final exam consisted of a set of 27 written multiple-choice questions with three options each tapping into the different grammar topics dealt with in the course. A balanced number of questions on past tenses, comparatives and superlatives, modal verbs, relative clauses, and gerunds and infinitives was included. These were similar to the questions answered in the quizzes throughout the semester, although none of them were taken from these sources. Both the questions and the options were presented in a randomised order to minimise cheating. A sample question from the final exam is:

They're very excited about *come / to come / **coming*** to stay with us next month.

Procedure

Due to the COVID-19 pandemic, the semester was originally planned to follow a blended learning approach, with 25% of the sessions taking place face-to-face and the rest online. However, due to sanitary restrictions, all face-to-face classes were cancelled before the first session was scheduled, so in the end, all classes were online. For this reason, the university's Virtual Campus on Moodle was used for data collection.

At the beginning of the academic semester, all students took the OPT during a synchronous session: they were allowed 50 minutes to complete the grammar part and 15 minutes to do the listening task. It was designed in a way that learners could go back to previous questions and change their answers, although one attempt was allowed only. Moreover, the teacher monitored the listening part of the test, and the audio was played once only. Some time was given to revise the answers at the end. Participants were debriefed about the results one week later so that they knew their diagnosed proficiency level at the start of the academic semester.

The procedure for the five JiTT sessions was the same, so it was repeated five times throughout the semester. The teacher first gave full instructions during a synchronous session, together with a brief definition of JiTT and some examples. Students were referred to Moodle for more detailed information on what JiTT was and its theoretical underpinnings. Participants

were shown the study guide and materials together with the quiz and the diagnostic questionnaire: emphasis was put on the idea that they had to critically study on their own, take the quiz and then complete the diagnostic questionnaire (in this order). They were given one week to complete all the tasks and were periodically reminded to do so via email. The study materials (i.e., study guide, PowerPoint presentations and video links) were presented in a Moodle folder, and the quiz was designed with the *quiz* function available on the platform. Finally, an access restriction was applied to the diagnostic questionnaire so that participants had to get a minimum mark (set at 0.5 points out of 10) in the quiz to be able to access it; this was done in order to prevent students from answering the questionnaire without having taken the corresponding quiz.

Approximately two days after the deadline to do the tasks, there was a synchronous follow-up session, normally lasting one hour, during which the teacher addressed the doubts which participants had shared in the diagnostic questionnaire, and asked students to do some extra practice (both individually and in small groups in order for them to be able to reflect together upon their answers). This was done either with ready-made exercises from textbooks and/or through a Kahoot! quiz.

The final exam took place at the end of the academic semester, four months after the beginning of the teaching intervention. It was designed on Moodle using the *quiz* activity, too. Learners had a total of 45 minutes to complete the 27 questions and two more exercises unrelated to this study. Grammar questions were presented one at a time, and test takers could not go back once a question had been answered and could not thus change their responses.

Scoring

The OPT was scored following the test instructions, so one point was given for every correct answer, with no points being deducted for incorrect or empty answers. Scores on grammar and listening tests were added, and the total score was compared with the CEFR scale provided in the test manual to determine the participants' proficiency level.

As for the quizzes, the scores which participants got on the five quizzes were considered, and the average was computed to have a more holistic picture of their grammar performance (this latter variable was used in the statistical analysis). However, only those participants who had answered at least four quizzes and their corresponding diagnostic questionnaires were included in the sample and subsequent analysis. Regarding the diagnostic questionnaires, the two extra questions included in the second questionnaire, tapping into the usefulness of JiTT and students' willingness to continue using this approach in the course, were considered, and the percentages of *yes* and *no* responses were calculated to answer RQ2. Finally, researchers categorised *ad hoc* the participants' responses to the open-ended question included in the fifth and last questionnaire, asking learners to express their views on the JiTT intervention. Researchers grouped the descriptors together according to the ideas put forward by participants, and the percentages of each category were computed. To answer RQ2, these comments were later classified as describing the JiTT intervention as a *positive*, *negative*, or *mixed* experience. For instance, if a participant commented that the intervention was well-planned and useful, that was classified as a *positive* comment. In contrast, if somebody said that it was a challenging experience and that more teacher explanations were needed, that was labelled as a *negative*

comment. Finally, if any participant pointed out both positive and negative aspects of JiTT, that learner was classified as having a *mixed* view.

As for the final exam, all the grammar questions were worth one point, so the maximum score was 27 since no points were deducted for incorrect answers or questions left blank. Such score was adjusted to a 10-point scale and then used in the statistical analysis.

Statistical Analysis

Prior to answering the RQs, participants' proficiency level was analysed. We used an independent samples *t*-test with equal variances assumed to determine whether there were significant differences between OPT scores (dependent variable) and the CEFR level determined by the test (i.e., beginner and intermediate), which was the factor.

To answer the first RQ, enquiring about how performance on JiTT quizzes contributes to explaining success rates in the grammar exam, we ran both two-tailed Pearson product-moment correlations and simple linear regressions to investigate the amount of variance explained by the average of grammar quizzes on the score obtained in the grammar part of the final exam. Regarding the second RQ, investigating participants' perceptions of JiTT, a series of chi-squared tests were run between proficiency level (beginner vs. intermediate) and the answers to the extra questions on the second and fifth diagnostic questionnaires (i.e., self-perceived usefulness of JiTT and willingness to continue using it halfway through the intervention, and the description of the experience at the end of the academic semester). Further, all data assumptions were checked, and decisions were taken accordingly (e.g., parametric tests were used since data followed a normal distribution).

Results

An independent samples *t*-test with equal variances assumed (Levene's test: $p=.133$) showed that there were significant differences between the two proficiency groups ($t(62)=-10.718$, $p<.001$, 95% CI [21.29, 31.05], $d=9.456$), with intermediate learners significantly outperforming beginners (see Table 1 for the descriptive statistics).

Table 1
Descriptive Statistics of the OPT, Divided by Level

Group	M	SD	Min.	Max.	95% CI
Beginners (*n*=40)	102.88	9.67	83	118	[99.78, 105.97]
Intermediate (*n*=24)	129.04	9.09	102	148	[125.20, 132.88]
Total (*N*=64)	112.69	15.84	83	148	[108.73, 116.65]

Note. Maximum score was 200.

RQ1 – JiTT's Impact on Success Rates

Pearson two-tailed correlations between final exam scores and the average of the five quizzes which participants had taken revealed a significant relationship between the two constructs in both beginners (r=.358, n=39, p=.025) and intermediate learners (r=.599, n=24, p=.002), as well as in the entire pool of participants (r=.601, n=63, p<.001) (see Table 2 for the descriptive statistics).

Table 2

Descriptive Statistics of the JiTT Quizzes and Final Exam, Divided by Level

Group	M	SD	Min.	Max.	95% CI
	JiTT quizzes				
Beginners	6.25	0.84	4.81	8.47	[5.99, 6.53]
Intermediate	7.36	0.83	6.20	8.73	[7.01, 7.71]
Total	6.68	0.99	4.81	8.73	[6.43, 6.93]
	Final exam				
Beginners	6.39	1.19	3.33	8.52	[6.01, 6.78]
Intermediate	7.84	0.91	5.93	9.63	[7.46, 8.23]
Total	6.95	1.30	3.33	9.63	[6.62, 7.27]

Note. Maximum score was 10.

A simple linear regression was calculated to predict participants' final exam scores based on their JiTT quizzes. The analysis showed that the average of the five JiTT quizzes explained 10.4% of the variance in beginners ($F_{(1, 37)}$=5.429, p=.025), 33% in intermediate learners ($F_{(1, 22)}$=12.336, p=.002), and 35% when all participants were considered ($F_{(1, 61)}$=34.432, p<.001) (see Table 3).

Table 3

Results of Linear Regression

Predictor variable	Dependent variable	Group	R	R square	Adjusted R square	Std. error of the estimate
JiTT quizzes	Final exam	Beginners	.358	.128	.104	1.13
		Intermediate	.599	.359	.330	0.75
		Total	.601	.361	.350	1.05

RQ2 – Participants' Perceptions of JiTT across Proficiency Levels

Table 4 shows the descriptive statistics of participants' perceptions of JiTT halfway through the intervention and at the end of it. A series of chi-squared tests revealed that there were no significant differences between participants' proficiency level and their self-perceived usefulness of JiTT halfway through the academic semester ($\chi^2(1)$=.637, p=.425), their willingness to continue using this approach ($\chi^2(1)$=1.070, p=.301), and describing the experience as being *positive*, *negative* or *mixed* ($\chi^2(2)$=2.495, p=.287). Regarding the descriptors of the experience given by participants at the end of the intervention, intermediate learners viewed JiTT as a more useful approach than beginner learners ($\chi^2(1)$=4.806, p=.028), and as a teaching methodology allowing for a more personalised way of learning ($\chi^2(1)$=5.655, p=.017), but there were no significant differences regarding the rest the descriptors, as can be seen in Table 5.

Table 4

Descriptive Statistics of RQ2, Divided by Level

Group	Yes		No		Mixed	
	n	%	*n*	%	*n*	%
	Has JiTT been useful so far?					
Beginners	31	96.9	1	3.1		
Intermediate	20	100	0	-	N/A	
Total	51	98.1	1	1.9		
	Do you want to continue using JiTT?					
Beginners	31	96.9	1	3.1		
Intermediate	18	90	2	10	N/A	
Total	49	94.2	3	5.8		
	Has JiTT been a positive experience?					
Beginners	18	60	8	26.7	4	13.3
Intermediate	14	82.4	2	11.8	1	5.9
Total	32	68.1	10	21.3	5	10.6

Note. The first two questions were answered halfway through the intervention, after the second JiTT session, and the third question at the end, after the fifth JiTT session.

Note 2. N/A: not applicable.

Table 5

Descriptive Statistics and P-values of RQ2, Divided by Level (Cont.)

Descriptor	Beginners		Intermediate		Total		*p*-value
	n	%	*n*	%	*n*	%	
Good, useful, well-planned, or easy	15	40.5	14	53.8	29	46	.028*
Difficult; more teacher explanations needed	10	27	2	7.7	12	19	.103
Videos and PowerPoint presentations were more useful	5	13.5	2	7.7	7	11.1	.650
Quizzes were the most useful resource	3	8.1	2	7.7	5	7.9	.850
Theory needs to be explained prior to quizzes	2	5.4	2	7.7	4	6.3	.547
JiTT allows for personalised learning	0	-	3	11.5	3	4.8	.017*
Useful, but difficult	2	5.4	1	3.8	3	4.8	.916

Note. Number of descriptors given: beginners (n=37), intermediate learners (n=26), total (N=63).

*Note 2. *p<.05*

Discussion

In this study, two groups of participants (beginner and intermediate learners) were compared as regards their grammar performance on an end-of-semester exam (RQ1). They were also asked about their views regarding the JiTT teaching and learning approach they had experienced over an academic semester (RQ2).

To answer RQ1, that is, how JiTT practice influenced the students' grammar learning, both the average score on the JiTT quizzes, a low-stakes situation in this study, and grammar scores in the final exam, a high-stakes situation, were computed. The results show that there was a significant weak correlation for beginners and a moderate one for intermediate-level students between the JiTT quizzes and the final exam grammar score. This difference in the correlation as well as in the amount of variance explained by JiTT quizzes across levels seems to favour intermediate-level students (33% of the variance at the intermediate level vs. 10.4% for beginners). Overall, though, the results suggest that participants' performance in the JiTT quizzes seems to play a small part in their performance in the final exam. Therefore, it appears that, although JiTT quizzes actually helped to achieve a higher success rate, there were other factors like previous language learning experience or commitment to the study task that may

have been more influential. It is also possible that participants did not study using the JiTT quizzes and saw them as a compulsory in-class activity, not as possible study material for the exam, so other exam practice activities may have overshadowed quizzes' learning potential.

Indeed, JiTT practice seems to be more beneficial for intermediate rather than beginner learners. This might actually be due to, first, the difference in the type of pressure experienced in grammar testing situations, leading to higher anxiety in lower proficiency students, who knew the exam aimed at a higher proficiency level (set at the B2.1 level) than theirs, as explained in Horwitz (2001) and found by Rotenberg (2002). However, access to a wide variety of learning resources (i.e., PowerPoint presentations, YouTube videos, Kahoot!, etc.), which JiTT guaranteed, might have also benefited these lower proficiency students, as found in Evseeva and Solozheenko (2015), since their entry proficiency level (A1-A2) was, in principle, lower than the one targeted in the final exam. Yet, thanks to the JiTT practice and probably other factors not considered in the present study, they managed to perform well in the final exam, against all the odds.

The newness that the JiTT approach meant in this context might have also benefited higher proficiency students, as beginners had to handle both the novelty of certain grammar concepts and that of this flipped classroom approach. This might have supposed an additional complexity factor for lower-level students as, indeed, JiTT involves a great deal of autonomous learning, in itself more challenging than guided learning (Oates, 2019). Beginner learners like those in this study might, therefore, need more teacher support to obtain higher benefits from JiTT if they have not previously mastered the grammar concepts presented following this methodology.

The second aim of this study was to inquire about the participants' perceptions of JiTT; for this purpose, they were asked about their opinions both halfway through and at the end of the experience. In this case, as shown in Tables 4 and 5, both the beginner and the intermediate learners were enthusiastic about JiTT, and expressed their willingness to continue learning through it. However, it should be considered that these data are self-reported, which might have added a bias in the students' answers. In addition, probably because answers were overwhelmingly positive at both levels, no differences between groups could be spotted. There is, though, a greater tendency for intermediate-level students to state that JiTT had been a more positive experience, as compared to beginners' views (82.4% vs. 60% respectively). This result can be easily related to what was found in RQ1, where it seems that beginner students performed slightly more poorly than intermediate learners. Indeed, average scores in JiTT grammar quizzes by both groups differ by slightly more than one point (6.25 vs. 7.36). Therefore, a match between learners' perceptions and their actual performance in the course could be established, which would link these perceptions to other factors besides the JiTT learning experience, such as their self-reflection on the OPT scores or their performance in class activities involving language skills other than grammar.

On a different note, RQ2 results also show that there were only two descriptors in which significant differences were revealed between proficiency levels. On the one hand, intermediate learners were keener to label the intervention as a good and useful approach in order to be taught and learn grammar ($p=.028$). This result would corroborate what was found in RQ1, where JiTT practice seemed to favour intermediate learners. In a way, if JiTT mainly benefitted intermediate learners, it is then logical to think that this group will describe the intervention as

a useful and well-planned activity when given the opportunity. It could be that beginner learners were less enthusiastic about JiTT and opted for not showing their preferences in the questionnaire, thinking that this could have any effect on their marks, as the last diagnostic questionnaire was answered some weeks before the final exam. On the other hand, intermediate learners (although not beginners) pointed out the personalisation aspect of JiTT ($p=.017$). This result might indicate a higher degree of self-awareness of the learning process by these learners, while beginners were more concerned, although not significantly, about the difficulty of the grammar contents. Surprisingly, as shown in Table 5, both the beginner and the intermediate learners did not consider that theory should have been explained before taking the grammar quizzes, yet beginner learners would have preferred it if the teacher himself or herself had clarified the grammar points synchronously. This can be explained by the fact that live interaction with teachers gives students the chance to ask questions as they arise, while JiTT delays problem-solving, thus perhaps increasing the uncertainty of actually understanding what is being explained.

Conclusions and Limitations

The purpose of the present study was to examine the effects of the implementation of JiTT on grammar learning and on learners' perceptions, and whether there were any differences depending on their proficiency level. This paper offers a novel approach to studying flipped classroom effects in the sense that it compares not only the performance of two groups of distinct proficiency but also their views. First, we can conclude that other factors which were not explored in the present study may have overshadowed JiTT, and that its actual impact on grammar learning success rates was somehow modest despite participants giving overwhelmingly positive reviews. That said, though, JiTT can be a useful approach for FL learning, especially for intermediate-level students, who seem to benefit more from JiTT than beginner learners, probably due to their higher proficiency level, which might have also influenced their slightly more positive view about this novel methodology. Hence, it could be said that JiTT may be a more suitable practice to implement in the FL classroom when learners have already mastered the basics of the language and can work more autonomously. At lower levels, other traditional activities, involving more teacher support, could be more appropriate.

JiTT also provides further opportunities for learning, with different outcomes not explored in the present study, thanks to the wider use of resources (videos, quizzes, questionnaires, and theoretical explanations) which caters to different learning profiles. Moreover, class time is more focused on the learners' needs and flaws, as participants themselves pointed out in the diagnostic questionnaires. Also, the asynchrony in JiTT entailed further guidance in participants' autonomous learning and allowed for more personalised opportunities, although it seems that this was self-perceived as being particularly helpful by higher proficiency students only.

This study, however, is not without limitations. Although prior research has examined the effects of the flipped classroom approach in other language skills, in this study only grammar learning was examined. In addition, the mastery of this skill, as well as the overall proficiency level targeted in the course was, in principle, less attainable for beginner-level students, which might have influenced their perceptions of the teaching intervention and their preference for receiving further explanations from their teachers. Moreover, the fact that perception data were

self-reported by participants may contribute to biasing the results. Despite these limitations, this study presented valuable insights into the use of a partly asynchronous teaching methodology in the FL classroom and used an innovative technique to teach grammar, one of the language skills that is in need of new approaches (Pawlak, 2021). Its overall positive effects, therefore, could make JiTT a useful alternative to consider when teaching grammar in a more motivating way than what traditional approaches might offer, although it needs to be kept in mind that JiTT may not cater to all learner profiles.

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