Exploring Moodle Effectiveness to Foster Online ESP During the COVID-19 Pandemic: An Analysis of Task Performance and Students' Perceptions in Online Language Learning Contexts

Antonio-José Silvestre-López and Carolina Girón-García

Abstract Education during the COVID-19 pandemic has experienced a massive shift towards online modes of instruction in higher education. This paper presents an example of such adaptation during the spring 2020 lockdown in the context of an ESP course taught to psychology students at a Spanish university. Specifically, we adopted the Cybertask model (Girón-García C.Learning styles and reading modes in the development of language learning autonomy through 'Cybertasks'. Barcelona. ed. Universitat Jaume I. Retrieved November 7, 2020, from http://hdl.handle.net/10803/125440, 2013; Girón-García & C, Boghiu-Balaur S. Revista de Lingüística y Lenguas Aplicadas 16:95–122. https://doi.org/10.4995/rlyla.2021.13950, 2021) to design an online task about psychotherapy that could be integrated into the Moodle platform in the form of a Lesson to explore the effectiveness of this asynchronous 'Cybertask-based Lesson' as compared to an equivalent synchronous online task guided by the teacher during a live online session. The study examines the outcomes of each type of task by assessing the students' achievement in learning new specialized content as well as their impressions regarding perceived interest and usefulness. 144 students were assigned to one of three different groups. The Experimental group 1 (N = 40) performed the Lesson/asynchronous task, the Experimental group 2 (N = 38) did the teacher-guided/synchronous task while the Control group (N = 36) did a regular online class addressing a different topic. The results indicate that, regarding achievement, both pedagogical alternatives are effective to a similar extent. However, task perception scores were significantly higher in the Experimental group 1. Further research is needed to explore the potential benefits of similar asynchronous tasks in the current higher education panorama, where there is a progressively greater demand for online learning.

Keywords ESP · Moodle · Performance · Perceptions · Online language learning

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1   Introduction

The COVID-19 crisis prompted an unexpectedly rapid digital transformation of higher education programs and methodologies. Since March 2020, universities have faced many challenges, including ad hoc modifications to curricula in order to adapt methodologies and materials to the online format. Technological advances have historically brought about changes in the design of curricula in higher education to allow for the incorporation of the advantages of online learning formats (Schmar-Dobler, 2003; Benson & Chik, 2010). Nevertheless, the advent of the forced technological revolution sparked by the pandemic crisis has led to global changes in education, and therefore also teaching and learning in the areas of English as a Foreign Language (EFL) and English for Specific Purposes (ESP) (Cf. Isik-Tas & Kenny, 2020; Querol-Julián & Beltrán-Palanques, 2021; Beltrán-Palanques, this volume).

In Spanish university degrees, EFL is usually approached early in the bachelor's degrees through ESP courses which allow students to make their first contact with the specialized Foreign Language (FL) by handling content directly related to their degree's scientific and/or professional areas of expertise.[1] These courses generally include competences like knowledge of a FL, instrumental command of the FL, autonomous learning, or the ability to understand and communicate appropriately using the FL in specialized contexts. These courses are also often devised to support the students' development of autonomous learning abilities. In turn, these abilities are expected to help them to handle specialized materials in English in other degree courses and their future professional careers (Cf. Fortanet-Gómez & Räisänen, 2008).

Task-Based Language Teaching (TBLT) (Leaver & Willis, 2004) has great pedagogical potential and offers a considerable number of opportunities to be applied both in and outside the ESP classroom setting. This is precisely one of the multiple benefits that TBLT provides since tasks that are applied outside the classroom (Skehan, 1998) are conceived by students as particularly valuable learning chances (Nunan, 2004). TBLT tools and procedures seem very convenient for the online adaptation of course materials (González-Lloret, 2016), considering that some studies have reported a range of positive outcomes derived from their integration in the classroom. This is the case, for example, of WebQuests (Dodge, 2001), TalenQuests (Koenraad, 2002), and WebQuest-based model tasks, also called 'Cybertasks' (Girón-García, 2013). In addition, the combination of Information and Communication Technologies (ICTs) in the classroom with a Content-Based Instruction (CBI) approach (Brinton et al., 1989) to deal with the contents of higher

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[1] While the widespread use of the English language and the Spanish education system allow students to have some prior general knowledge of the FL before entering university, English courses higher education settings focus primarily on specialized situations and contexts. In most Spanish bachelor's degrees, this is materialized in ESP subjects included in the curricula that are devised to meet the specialty needs of each degree and area of expertise. It is interesting to note that English as a Medium of Instruction (EMI) (Rose et al., 2021) is progressively growing in Spanish universities (Dafouz & Smit, 2020), but this is an incipient process and ESP instruction still predominates.

education ESP courses has several benefits, for example, the encouragement of students' autonomy and engagement in their own learning process (Cf. Girón-García & Boghiu-Balaur, 2021).

Against this backdrop, this study illustrates a case of adaptation from face-to-face to the "forced online format" imposed during the 2020 lockdown in an ESP course addressed to first-year undergraduate psychology students at a Spanish university. Due to the varied casuistry and life circumstances experienced during the pandemic, not all students had the means and availability to work remotely and synchronously on a daily basis. This study considers this contextual circumstance to explore the effectiveness (in learning new specialized contents) and students' perceptions of two alternatives of online tasks offered to them during the lockdown. One was an asynchronous autonomous online learning Cybertask adapted to the *Moodle LMS Lesson* format (Dougiamas & Taylor, 2002) and the other was an equivalent synchronous online task guided by the teacher during a live online session.

1.1   Higher Education and the COVID-19 Context

Before the pandemic, with the exception of distance learning universities, teaching in most Spanish universities was mainly face-to-face. This is also the case of the university in which this study was conducted. The global spread of COVID-19 and the increased concerns over a possible long-term lockdown forced universities and other educational institutions to close their doors and move their instruction online. Since the spring of 2020, the efficient use of the internet and other online resources integrated into online platforms like Moodle has become essential for both students and educators (Cf. Adedoyin & Soykan, 2020; Fortanet-Gómez & Ruiz-Madrid, this volume; Kaufmann et al., this volume). Since the adaptation to the European Higher Education Area (Broucker et al., 2019), university degree courses have progressively shifted from teacher-centered to student-centered approaches. In the attempt to promote learning through technologies derived from the pandemic, higher education institutions should be particularly aware of the importance of developing approaches that facilitate students' autonomous learning with little guidance from the teacher. These approaches should encourage students to take responsibility for their own learning process while also creating new knowledge from already existing information (Villanueva, 2020), as well as from the pedagogical and online resources proposed to them by teachers.

The combination of CBI (whose focus is placed on the subject matter in the language being learned) with e-learning TBLT in the classroom often boosts a more dynamic pedagogical landscape that becomes particularly engaging for students when it is exploited in Cybertasks (Girón-García & Boghiu-Balaur, 2021). Technology and TBLT provide an appropriate combination that leads to the emergence of *Technology-mediated TBLT* (González-Lloret, 2016). The essential principle of this approach is "learning by doing" (2016, p. 34) through relevant tasks involving the use of authentic materials to process contents in the FL. Under this

view, an effort should be made to provide students with meaningful learning tasks that are in line both with course objectives and contents and their own specialized language learning needs. Other investigations have proved that CBI, as a means of instruction, engages students in learning content more effectively when the aforementioned tasks are designed to guide the students' own (autonomous) learning process from a student-centered approach (Richards, 2006); that is, one in which the learner is an active participant rather than a passive recipient of knowledge (Benson, 2001; Villanueva, 2020). "Learning how to learn" in technology-mediated environments is a fundamental ingredient of the autonomous language learning process and one of the biggest challenges in the field of education in the twenty-first century with the COVID-19 health crisis.

1.2 Digital Learning Tasks: WebQuests, TalenQuests, Cybertasks, and Lessons

Learning in an asynchronous virtual environment often involves completing a series of tasks designed by an instructor to make the most of the students' time. Over the years, there have been many types of digital learning tasks based on TBLT approaches requiring authentic resources from an autonomist perspective, such as *WebQuests*, *TalenQuests*, *Cybertasks,* and *Lessons*.

First-generation *WebQuests* (Dodge, 1997) marked a turning point in the area of Web-based activities fostering students' critical thinking through the analysis, synthesis, and evaluation of digital resources (websites, articles, forums, etc.), as well as through the management of the information offered in them. Historically, different WebQuest models have existed, like the first-generation WebQuest model (Dodge, 2001) designed for teaching content on a specific topic, or the adaptation of the concept of WebQuest for language learning known as *Language Quests* or *TalenQuest*s (Koenraad, 2002). The latter facilitate the design and integration of a variety of online resources in complex tasks to promote effective FL learning in modern educational contexts (Koenraad, 2010). TalenQuests are an attempt to generate more effective online FL learning tasks that lead to second-generation WebQuest-based models incorporating the fundamentals of TBLT approaches, called *Cybertasks* (Girón-García, 2013). Cybertasks are online tasks immersing students in networked information with the objective of compiling, using, and transforming data obtained from a web search.[2] Furthermore, Cybertasks are designed around an area of interest, which might involve more or less specialized courses. Particularly, these online tasks are *not* focally targeted at learning a FL. Rather, they are designed to help students to learn a FL by turning to *content* instead of the fundamentals of language rules, for example, through the autonomous management

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[2]An example of Cybertasks used in a recent study in higher education contexts is provided in Girón-García and Boghiu-Balaur (2021).

of online contents pre-selected by the teacher. Cybertasks, therefore, are in line with CBI fundamentals and, by design, an ideal online tool for learning content in a FL while also fostering autonomy. Students need training to become more autonomous learners (Holec, 1979). The use of ICTs itself does not usually result in greater autonomy (Luzón et al., 2010). However, this training process can be boosted by introducing "technology-rich language learning environments" (Blin, 2010, p. 182) that allow the integration of adequate online resources and curriculum design materials. In this light, Cybertasks have several advantages (Cf., for example, Luzón et al., 2010; Girón-García, 2013). Some outstanding benefits relate to their potential to reinforce students' autonomous language learning while also promoting more adequate usage of online resources proposed by the teacher in order to attain certain learning outcomes. Additionally, studies like Girón-García and Ruiz-Madrid (2014), Girón-García and Silvestre-López (2019), or Girón-García and Boghiu-Balaur (2021) have described a range of benefits of Cybertask completion. Some of these include learning how to (a) deal with learning processes and select information on the internet; (b) synthesize information, adopt critical decisions and build new knowledge; or (c) become acquainted with the basic information, key concepts, and sources provided with the aim of completing the task.

Such learning skills, entrenched in students' use of online resources enclosed in online task-based models, could be adapted to new online learning platforms, such as Moodle LMS, in which the Lesson resource is integrated.[3] Lessons allow students to use pre-selected online resources through a pre-established and well-defined navigation process. This process can be driven, for example, by a series of questions posed by the teachers along the Lesson navigation path, which allows students to figure out the answers in an orderly way. Figure 1 summarizes the differentiating traits of the previously described tasks.

Although Cybertasks have many advantages, the way they are distributed to students in class involves some hindrances related to the process of downloading and getting the task to work. The creation of a Cybertask involves several documents which, for the task to work correctly, must be hyperlinked, packed, and zipped in a folder. Once the zipped folder has been made available to students, the whole "package" downloading procedure entails giving them very precise and detailed instructions. Concretely, students often need the teacher's guidance to explore its specific contents (to find important files in the unzipped folder) and to open the task on a web browser (by clicking on the appropriate HTML file in the folder) to visualize it.

In this study, Lessons are conceived as a suitable choice for the adaptation of the Cybertask model to the Moodle platform. This adaptation is convenient because it allows for the integration of the same type of materials and online resources (already provided in the Cybertask design) and facilitates students' access to the task via Moodle. Students, as *Moodle users*, have all those materials at their disposal for their own use both inside and outside the university context. Since this virtual platform is widely known and used by all the members of the university community (particularly teachers and students), it is easier to deliver the task in class.

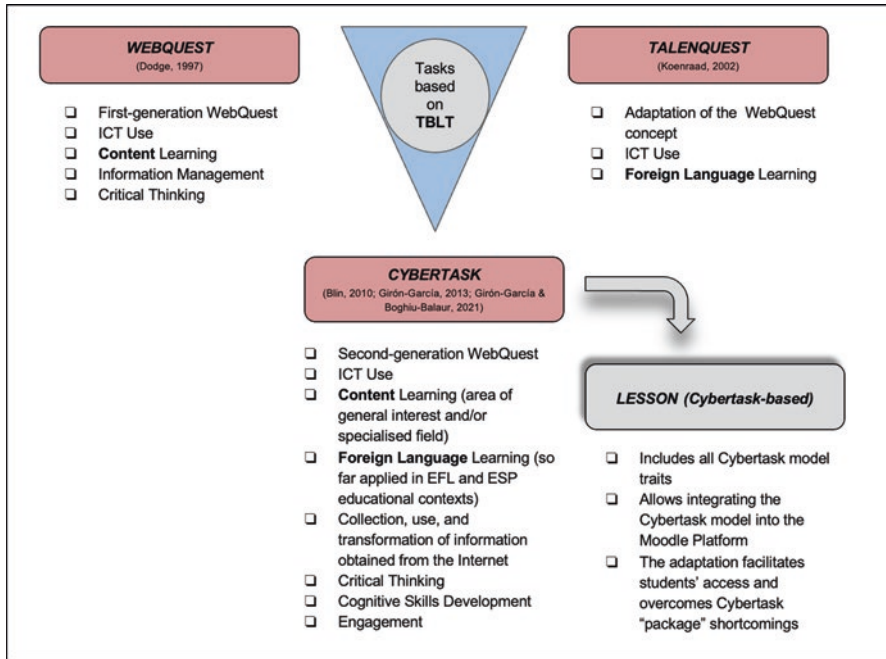[3] Cf. https://docs.moodle.org/311/en/Lesson_activity

Fig. 1 Tasks based on TBLT approaches

1.3   Aim and Research Questions

In the framework of an imposed lockdown and the switch to the "remote online teaching mode", we decided to implement a 'Cybertask-based Lesson' about different types of psychotherapy. While it had been designed for the ESP course mentioned above and implemented in class during the previous academic year, its effectiveness had not yet been tested. We thus decided to explore the effectiveness of this Cybertask-based lesson as compared to an equivalent task exploiting exactly the same contents and resources but from a more teacher-guided perspective. The Cybertask-based lesson is an asynchronous autonomous learning task in which students were asked to use text and video resources to answer specific content questions. The equivalent task is a synchronous teacher-guided task conducted during one online Google Meet session.[4] The study aims to examine the outcomes of each task format in terms of the students' achievement in learning specialized task-related content, as well as their perceptions about task interest and usefulness. Two research questions are posed accordingly:

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[4] We replicated the Lesson materials in an MSWord document format to be used in the online synchronous alternative.

RQ1: Is either pedagogical treatment (Lesson/asynchronous vs. teacher-guided/ synchronous) more effective than the other for students to learn task-related content?

RQ2: Is there any difference in the students' level of interest and usefulness regarding either pedagogical treatment?

2   Method

2.1   *Participants*

An initial group of 173 ESP students taking the first course of the bachelor's degree in psychology at a Spanish university volunteered to participate in the study. Upon the completion of an English proficiency level test (Quick Placement Test, 2001), 121 were placed at the B1 level (CEFR, 2001), and the remaining 48 were spread across a range of A2, B2, and C1 levels. Based on the researchers' professional experience in teaching this course for several years (the same proficiency level test is administered to each new group every year), B1 is the most common proficiency level of the students. Based on this and the group size, the students with a B1 level were considered the potential participants in the study; this was done purposefully to ensure a homogeneous group. Seven more students were excluded from the data gathering process due to absence during the pedagogical implementation or because they failed to participate fully in the tasks and/or complete the tests as requested. The final sample was made up of 114 students who were assigned to one of three different groups (experimental group 1, N = 40; experimental group 2, N = 38; control group, N = 36; see Sect. 2.4. below).

2.2   *Measurement Instruments*

In order to measure the participants' knowledge about the contents addressed in the pedagogical treatment, we used a "task achievement" test targeting the comprehension of the main notions of the types of psychotherapy dealt with in the task. This test had been designed and revised by a language teacher colleague (an external researcher), and pilot tested with another group of 79 students from the same course during the previous academic year, with satisfactory results. The test was composed of 16 multiple-choice questions in which students were asked to choose one answer from among three options. Correct choices led to a score of 1 and incorrect answers were given a 0 in each question. In this study, the test was used as a pre- and post-test instrument (repeated measures) to gather quantitative data on the participants' scores before and after the pedagogical treatment. In a regular classroom context (excluding this study), the test was used as a pre- and post-lesson element, so that students could check their knowledge and track their progress before and after practice. In this case, and in order

not to interfere with this study, the students had access to all the results only after they had completed the whole process. Example 1 shows one of the questions in the test:

Example 1:

Choose the option that, in your opinion, best describes the notion of "acceptance" in Acceptance and Commitment Therapy (ACT):

    a. *Acceptance of what is beyond your control or what you cannot change. Accepting this allows you to move forward by working with what you have*

    b. *Acceptance of things you cannot control (e.g. how you react, think or feel right now), so that you can move forward by focusing on other aspects of your personality*

    c. *Acceptance of life difficulties that you cannot change, so that you can learn to cope with them through avoidance strategies*

To gauge students' general impressions regarding their perceived interest and usefulness of the task, a questionnaire including the 'Interest/Enjoyment' and the 'Value/Usefulness' subscales of the Intrinsic Motivation Inventory (IMI) (Self-Determination Theory, SDT, n.d.; Deci & Ryan, 2008; Ryan & Deci, 2000a, b) was created.[5] The IMI is a multidimensional assessment instrument that measures motivational structures organized in seven subscales including the interest/enjoyment and value/usefulness subscales. Recent COVID-19 research related to online and EFL learning suggests that the students' motivation plays an important role, especially if learning is supported by digital tools since it encouraged students to learn on a more individual basis (McCollum, this volume; Robbins & Masats, this volume). The interest/enjoyment subscale is considered the main self-report measure of intrinsic motivation in the inventory (SDT, n.d.) that takes into account the students' experienced interest and perceived enjoyment when performing a specific task. The value/usefulness subscale gauges the perceived benefits of doing the task for the participant. Participants are asked to rate each statement indicating how true they are for them using a 1–7 Likert scale in which the lowest value is "1-Not at all true" and the highest value is "7-Very true". The IMI is designed to be used as a whole or as a choice of dimensions/subscales. We used the interest/enjoyment and value/usefulness dimensions for the purposes of this study since previous research (Girón-García & Silvestre-López, 2019, in review) points toward these two dimensions as relevant components in tasks like the ones used in the pedagogical treatment of the present study.

2.3   Pedagogical Treatment

'English for Psychologists' is a compulsory ESP course in the first year of the Psychology Bachelor's Degree. By the end of this course, students are expected to reach learning outcomes like developing autonomous learning skills, an instrumental command of the FL, and the ability to appropriately understand and handle specialized materials related to the field of psychology. This course provides students with

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[5]The questionnaire, including these subscales, is available online at https://selfdeterminationtheory.org/intrinsic-motivation-inventory/

the opportunity to use specialized English vocabulary by addressing the contents of a selection of psychology topics. This is expected to help them to autonomously manage specialized English in other degree courses and their professional careers.

For the purposes of this study, we designed two equivalent online tasks (Lesson/asynchronous and teacher-guided/synchronous) for each group of students to complete in up to 2.5 h. The tasks are conceived as an introduction to one of the units in the syllabus devoted to psychological therapies and require the search of information to promote specialized content understanding. To complete the tasks, students need to read and listen to authentic psychology materials in English through the proposed online resources. Concretely, in the tasks, students are required to use the English language for gathering, examining, selecting, using, and transforming information related to different kinds of psychotherapy. In so doing, the tasks are expected to help students to: (i) use the English language to learn about new types of therapy, (ii) use the internet as an instrument to fulfil particular needs according to the task objectives, and (iii) use a selection of resources provided by the teacher to build new knowledge in order to answer the activities proposed.

The asynchronous task is a Lesson in the Moodle LMS designed to introduce students, in one up to 2.5 h session, to the field of psychotherapy through the exploration of a set of online resources presented in an orderly way. Specifically, this Lesson is structured in five sections: (1) A general introduction to psychotherapy; (2) Cognitive-Behavioural Therapy (CBT); (3) Mindfulness-Based Cognitive Therapy (MBCT); (4) Acceptance and Commitment Therapy (ACT); and (5) Humanistic therapies. Each section introduces several questions targeting basic notions of each therapy that students need to answer using a selection of links to specialized online videos and texts. To answer the questions, the students are required to follow a simple, linear navigational path determined by the Lesson structure. In each Lesson section, the students are encouraged to explore, in any order, the resources provided to find, select, and transform information. For example, in Sect. 1, for each type of therapy, the students need to gather relevant information and deconstruct it to briefly describe aims, types of disorders, techniques, and examples of patient cases. In the rest of the sections, the students need to browse the resources to describe more detailed examples of applications of each therapy (see Appendix A). The Lesson is thus devised to encourage students to become the first-person agents of their own learning process while guiding them in the self-discovery of each type of therapy.

The synchronous online task deals with exactly the same topic, contents, and sections of the Lesson, but it is adapted to be implemented during one synchronous Google Meet session guided by the teacher. For this purpose, the Lesson contents are replicated and adapted to an MSWord format to be distributed to the students. The materials are thus structured following the same five-section format. During the implementation, the teacher acts as a guide, distributing the document via the Moodle platform, introducing the task, and then setting the pace of the session in line with what is required in each of the five sections. In doing so, the teacher ensures that all parts are covered. For each of them, the students are requested to answer the questions by checking exactly the same selection of links as in the

Lesson. They are allowed to ask questions naturally (as in a regular live online class). The teacher clarifies procedural doubts when necessary (e.g., questions on how to proceed or how questions should be answered). When asked about conceptual doubts, the teacher prompts the students to use the link contents but does not give any clues about where to find a particular answer or what information is more relevant.

2.4 Data Collection and Analysis

We adopted a quasi-experimental three-group design (one control and two experimental groups). Pre/post-test measures were administered to the three groups to address RQ1 (task achievement in terms of understanding of contents). A post-task perception questionnaire was administered to the experimental groups to answer RQ2 (task perception in terms of the interest/enjoyment and value/usefulness dimensions).

Firstly, all students took the English level placement test. The study was implemented as part of the contents of the course, so all the students taking the study were allowed to take part in any of the three groups. However, only B1 students who volunteered to participate were eventually considered for the final sample in this study (see Sect. 2.1). Three weeks before the pedagogical treatment, students were informed of the study and its expected time frame in the course. Due to individual circumstances during confinement, not all students were available to connect synchronously to the online class sessions. Therefore, they were informed that, in order to participate, they would have to be online without being interrupted during one single session lasting up to 2.5 h. They could choose to do this either synchronously in one online Google Meet session during class time or by doing an asynchronous online task outside class time, but also within a single session of up to 2.5 h. All volunteers signed an informed consent form and took a pre-test (task achievement test) two weeks before the pedagogical treatment. Those who expressed availability for the asynchronous session were included in experimental group 1, the rest were distributed into experimental group 2 and the control group.

Experimental group 1 performed the asynchronous online task (Lesson). To do so, participants were granted a 48-h period in which they had to start and finish the Lesson and then complete the post-test (task achievement test) and the task-perception questionnaire immediately afterwards. They were given a 2.5-h time limit from the moment they started the Lesson. Submission times were checked in Moodle to ensure these conditions were met by all participants. Experimental group 2 attended a 2.5-h online session in which they carried out and completed the synchronous online task. During the session, the students could interact with the teacher as described above but could not talk to other students. Upon task completion, they took the post-test (task achievement test) and answered the task perception questionnaire. The control group attended a 2.5-h live online session in which, following the structure of a regular live online class, they addressed unrelated contents and were then administered the post-test (task-achievement test).

Once all tasks and tests had been completed, data were collected and analyzed. Normality of the data was checked with the Shapiro-Wilk test. Pearson chi-squared test was used to check for sex differences, and one-way ANOVAs were used to test potential age and previous knowledge (pre-test scores) differences between groups. In order to answer the first research question (RQ1), a repeated-measures ANOVA with a Tukey post-hoc test was used. To answer the second research question (RQ2), the internal reliability of the interest/enjoyment and value/usefulness subscales was checked (Cronbach's α = .917 and = .915 respectively). Independent samples t-Tests were run to unveil potential differences regarding interest/enjoyment and value/usefulness between the two experimental groups. The effect size was calculated with Cohen's *d*.

3   Results and Discussion

The Shapiro-Wilk test indicated that the data presented a normal distribution (Control, p = .056; Experimental 1, p = .226; Experimental 2, p = .228). The sample distribution had a bias in sex, as 86.8% (N = 99) were women and 13.2% (N = 15) were men, but this distribution is the norm in this bachelor's degree; nonetheless, there were no significant sex differences between groups (see Table 1). The one-way ANOVAs run to test age and previous knowledge on the topic (pre-test measure) indicated that there were no significant differences regarding age (average age: 18.92 years, SD = 2.88) or topic-related knowledge between groups (pre-test M = 9.65, SD = 1.7).

The first research question (RQ1) explored the effectiveness of each pedagogical treatment in terms of potential changes in participants' knowledge about the contents dealt with in the tasks measured through pre/post-test scores. A repeated-measures ANOVA was run to evaluate the time by group interaction (Table 2) revealing statistically significant effects of instruction (Wilks' λ = 0.573, F (2.111) = 41.427, p = 0.000), with a moderate size effect ($\eta_p^2 = 0.427$).

In order to reveal the particular differences between groups, a Tukey post hoc analysis was performed. The comparison displayed significant differences between the control group and the two experimental groups. The differences between the experimental groups, however, were not statistically significant (see Table 3).

Overall, these results indicate a positive and significant effect of instruction in both experimental groups. This implies that both the synchronous and asynchronous

Table 1   General group characteristics: Sex, age, and previous knowledge

	Control	Experimental 1	Experimental 2	*Sig.*
Sex (Women), N (%)	31 (86.1)	35 (87.5)	33 (86.8)	.984
Age, M (SD)	18.47 (1.18)	18.93 (2.7)	19.34 (4.02)	*.434*
Pre-test, M (SD)	9.86 (1.71)	9.53 (1.71)	9.86 (1.71)	.661

Table 2 Effects of instruction: Descriptive statistics and Wilks' Lambda

Control		Experimental 1		Experimental 2		Wilks' λ	F	p	η_p^2
Pre	Post	Pre	Post	Pre	Post				
9.86	9.94	9.53	12.4	9.58	12.89	.573	41.427	<.000**	.427
(1.71)	(1.98)	(1.71)	(2.13)	(1.7)	(1.89)				

Note. Time*group effects are reported/Significance: ** P < .001

Table 3 Effects of instruction: Tukey post hoc comparison between groups

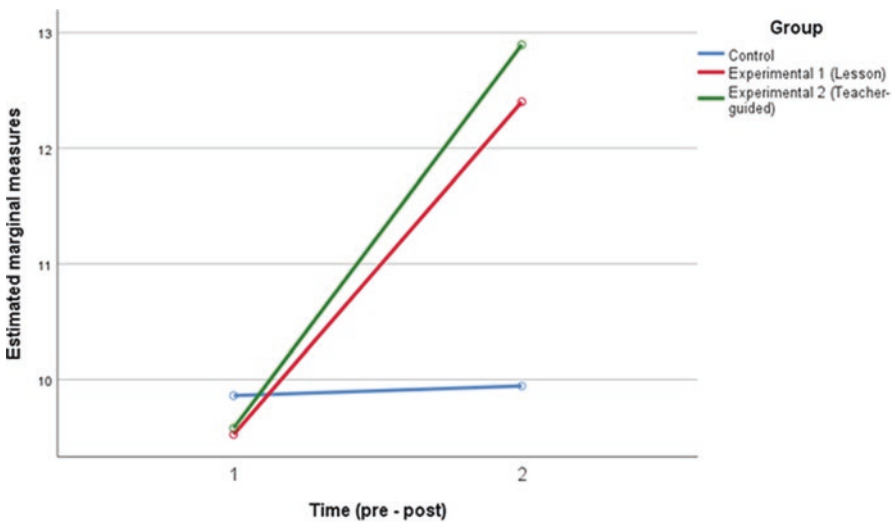| Group	Group	Tukey p
Control	Experimental 1	.018*
	Experimental 2	.002*
Experimental 1	Experimental 2	.749

*Significance: p ≤ .05

Fig. 2 Pre-post change in each group

pedagogical alternatives are to a certain extent equivalent. Figure 2 offers a visual representation of the pre/post-test evolution of each group.

The evolution of the teacher-guided instruction group is slightly better than the evolution of the group that worked asynchronously with the Lesson. This could lead to the subjective interpretation that teacher-guided instruction may result in better performance. While this is true at the level of absolute values, the difference is not statistically significant, which implies that both types of treatment are appropriate to promote content learning, at least regarding students' achievement. These findings are in line with the results from a recent study dealing with Cybertask-based content instruction in higher education, which suggest that this kind of instruction is useful

Table 4 T-test results (Experimental groups 1 and 2)

IMI Dimension	t-Test for equality of means				Cohen's d
	t	DF	Sig.	Mean difference	
Interest/enjoyment	4.895	58.450	.000	7.90658	1.1163227
Value/usefulness	4.243	70.019	.000	5.79737	0.96434166

to promote content learning (cf. Girón-García & Boghiu-Balaur, 2021) in asynchronous online contexts.

The second research question (RQ2) in the study addressed the way each online task was perceived by students regarding task interest and usefulness, for which two independent samples t-Tests were run on the IMI interest/enjoyment and value/usefulness subscales. The results of each t-Test indicate that the asynchronous task (i.e., the Lesson administered to Experimental group 1) was perceived better, overall, in terms of interest-enjoyment (Experimental 1: M 36.28, SD 4.99; Experimental 2: M 28.37, SD 8.69) and value-usefulness (Experimental 1: M 35.35, SD 5.24; Experimental 2: M 29.55, SD 6.70), with significant differences when compared to the synchronous teacher-guided treatment administered to Experimental group 2 (see Table 4). Interest/enjoyment ratings for the asynchronous Lesson treatment are 7.9 points higher than those for the synchronous teacher-guided treatment. This difference is significant $t(5.45) = 4.895$, $p < .001$. Value-usefulness ratings for the Lesson-based treatment are 5.8 points higher than those for the teacher-guided alternative, also with significant differences $t(70.019) = 4.243$, $p < .001$. A large effect was found for both dimensions, with a Cohen's *d* of 1.116 for interest/enjoyment and 0.964 for value/usefulness (d > .8 in both cases).

Although both online task formats are equivalent in terms of content and displayed similar achievement rates, the Lesson-based online task was perceived as more motivating in the sense that students reported better-perceived enjoyment and interest levels while doing it. Likewise, it was perceived as more valuable and useful. The difference in terms of interest/enjoyment rates could be expected to a certain extent, since the outcomes of previous studies report positive perceptions of online asynchronous learning tasks (Cf., for example, Kim et al., 2019; Bond et al., 2020). However, in the absence of previous studies conducted under similar circumstances, the origin of the significant differences regarding the perceived usefulness of the task is more difficult to ascertain. Perhaps the better scores of the asynchronous task in this IMI dimension have come about due to the greater degree of autonomy and freedom to complete the task. In that task, participants have been able to direct their attention to the resources that they felt were most relevant or appealing (Cf. Levitt & Piro, 2016). Additionally, they may have been able to optimize the time they spent browsing the resources to gather and transform the information they found most convenient to complete the task at their own pace (Cf. Girón-García, 2013). This may have led them to perceive that they have taken control of the task completion process, creating more meaningful navigation paths and thus enriching their information search experience. In turn, this may have contributed to making them perceive the task as particularly useful and valuable. The

possibility of using the resources at their own convenience to answer the task questions connects with the notions of enhanced self-control of the students' own learning process and the creation of meaningful navigation paths. Since these key features of successful autonomous learning are also present in Cybertasks (Cf. Girón-García, 2013), the perception results obtained in this study could be indicative of a successful adaptation of the Cybertask model to the Moodle environment. Nevertheless, more studies are necessary to determine the conditions under which this kind of adaptation may be more effective. Concretely, it would be desirable to explore its effectiveness in relation to the role of learning autonomy, potentially different classroom contexts, or students' preferences for synchronous and asynchronous online tasks.

Finally, it is interesting to point out that the large size effects findings suggest that these differences in perception may have real practical significance and can be expected to hold if both online task formats are used in the future in similar circumstances. It is likely that the same would happen in a regular (lockdown-free) context, but this is something that further studies should address. These data should thus be interpreted with caution, as the extremely exceptional circumstances in which the study was conducted may have exerted some influence on the students' perceptions.

4 Conclusions, Limitations, and Further Research

This paper has illustrated a case of adaptation to the "online mode" in the framework of the COVID-19 crisis in a Spanish higher education ESP course taught to first-year psychology degree students. Specifically, it has attempted to survey the pedagogical potential and the students' perceptions of two equivalent online tasks in an asynchronous Moodle Lesson format and in a synchronous live Google Meet session guided by the teacher.

The first research question addressed the potential effectiveness of either pedagogical alternative to deal with task-related content in the FL. Both pedagogical alternatives were found to be similarly effective to help students to deal with content and individual work with online resources in this classroom context, with significant differences compared to the group that did not receive such instruction. Beyond pedagogical potential, the results obtained imply that both the synchronous and asynchronous alternatives can be implemented interchangeably. In terms of achievement, the asynchronous system works at least as well as the teacher-guided system. This has direct applications not only in terms of course planning, but also because it offers the possibility of adapting to the idiosyncratic needs of the students or the social and contextual circumstances in a near future (e.g., health issues, imposed lockdown, etc.).

Regarding the second research question, the group that performed the Lesson-based asynchronous task showed statistically significant better task perception scores in the IMI dimensions tackled in the study. These findings suggest students' perceptions are sensitive to that distinction, which underscores the need to further

investigate potential differences between synchronous and asynchronous "online learning modes", particularly regarding the way students perceive each modality. As the widespread technological adaptation universities experienced during the COVID-19 crisis is likely to take hold, it might be interesting to revisit the traditional conception of (often asynchronous) "online learning" in contrast with the new realities that emerged during this period. For example, it may be worth analyzing the extent to which synchronous online "streaming" sessions are equivalent to "traditional" face-to-face classes. More studies should also explore whether the former can still be regarded as online learning instances as prototypical as other asynchronous TBLT-based alternatives (like WebQuests or Cybertasks) that are more conventionally associated with the "traditional" conception of online learning.

This study has several limitations. First, it is a quasi-experimental study in the sense that the distribution of participants was not carried out in a completely randomized way because, in the context of lockdown, the circumstances were not suitable. The ideal scenario would have been to ask students to have online and offline availability as a precondition for participation (before proceeding to a fully random assignment to one of the three groups). However, in order to increase participation, we preferred to prioritize the real availability of all participants (as not all of them had such availability) and let them choose a synchronous or asynchronous session, depending on their personal circumstances. Once they had made their choice, the students were distributed into the asynchronous (Experimental 1) or synchronous (Experimental 2 or Control) options, efforts being made to ensure that they were comparable in terms of gender composition. Further research must be carried out with an experimental design (fully randomized sample); in particular, it would be desirable to replicate this study in a future COVID-19/lockdown-free environment to explore any variation, especially in terms of task perception effects. In connection with this, the COVID-19 context in which the study was carried out can be perceived as a second limitation, as the context of the pandemic might have led to students' having a different perception of the task and the experience in general. This circumstance must be taken into account when considering the outcomes reported in this study. A third limitation has to do with the pre/post-test measures used in the study design. The post-test measures were administered right after the pedagogical treatment, thus, the results regarding the effectiveness of the two pedagogical interventions must be interpreted as short-term effects.

This study provides new insights into how a specific group of ESP students responded to and perceived the two online alternatives during the spring 2020 lockdown, which casts new light on how both alternatives could be handled in similar situations in the future. This is certainly useful for the ESP course in which the study was conducted. Nevertheless, these results may also be interesting for other higher education ESP courses dealing with synchronous and asynchronous tasks following a similar approach. Moreover, the findings in this study also enhance our general understanding of the students' perceptions regarding synchronous and asynchronous learning beyond the field of ESP.

All in all, while this study is to be regarded as a very specific case within the framework of a particular ESP course, its findings are encouraging. There is still a

need to further investigate the use of Cybertask-based Lessons for content learning in ESP. As a result, this work may inspire ESP teachers to develop similar tasks as a helpful adaptation to student and contextual needs in post-COVID-19 crisis times.

Appendix A: Lesson Sections Screenshots (Introduction and ACT)

SECTION 1: Psychotherapy and different types of therapy

DESCRIPTION

Below you will find links to the description of basic types of therapy.

Browse them (you may read/watch all of them or only some of them) so that you become acquainted with some basic notions related to psychotherapy.

QUESTION 1

For each type of therapy, try to find some information concerning some of the following points (this will give you an idea of the basic details of each kind of therapy). If you think you need more information to complete the table, you can use the links provided in other sections.

- **Context and main aims** of the therapy. That is, where does it come from (e.g. is there a particular theoretical background/philosophy)? And, most importantly, what is it for?
- **Targets/conditions** (kinds of disorders or problems it is useful for, types of a patient if needed)
- **Techniques** (how do professionals proceed?)
- **Examples** (e.g. particular cases of patients and how that therapy helped them)

	AIMS	TARGETS	TECHNIQUES	EXAMPLES
CBT				
MBCT				
ACT				
Humanistic-related therapies				

Psychotherapy and different types of therapy (general descriptive links)

- What is Psychotherapy? https://www.verywell.com/psychotherapy-4014033
- What is Psychotherapy and how does it help? https://psychcentral.com/psychotherapy/
- The Basic Methods of Different Therapy Types: https://www.verywell.com/types-of-therapy-2795753

TIP: You can copy this table and paste it below in order to answer the question by editing it.

Su respuesta

Enviar

SECTION 4: Acceptance & Commitment (ACT)

DESCRIPTION

In this section, you will find different resources (web links) related to **ACT**. Surf these links to answer the questions proposed.
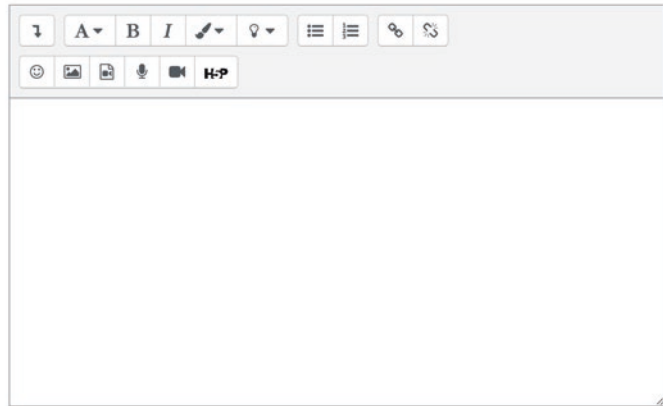
QUESTIONS

(Q4.1): *What does 'ACT' refer to? Describe the basics of this type of therapy.*

(Q4.2): *Could you give an example of an application of ACT?*

- An Overview of Acceptance and Commitment Therapy: https://www.psychotherapy.net/article/Acceptance-and-Commitment-Therapy-ACT#section-what-is-unique-to-act
- ACT Mindfully: https://www.actmindfully.com.au/about-act/
- The ABCs of ACT — Acceptance and Commitment Therapy: https://www.socialworktoday.com/archive/090208p36.shtml
- Acceptance and Commitment Therapy (ACT) - The Walls https://www.youtube.com/watch?v=Tz4w0xrQfWI&ab_channel=LindaWolfus
- What is Acceptance Commitment Therapy? https://www.youtube.com/watch?v=ScwXgqO_d7Y

TIP: In order to answer the questions in an orderly way, copy and paste the questions in the space provided below and write your answers.

Su respuesta

Enviar

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