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## MASSIVE OPEN ONLINE COURSES FOR FOREIGN LANGUAGE LEARNING: A PLURAL PERSPECTIVE

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availability, and her encouraging words always. To my **beloved friends**, who have listened to me tirelessly and helped me to look at the bright side.

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# 1.    INTRODUCTION

## 1.1. Background information

The research work presented in this thesis dissertation is the culmination of the author's academic and professional journey as an applied linguistic and open learning advocate. It focuses on exploring Language Massive Open Online Courses (LMOOCs, henceforth), which represent a synthesis of the author's interests and professional expertise. The study aims to address the existing gaps in LMOOC research and comprises a collection of published papers that offer a plural perspective on LMOOCs as a subdiscipline of Computer Assisted Language Learning (CALL).

The research topics included in this collection have their origin in the practical knowledge acquired by the author in different formative and professional stages. A key event which sparked the author's interest in open language learning was her completion of a master's degree in Information and Communication Technologies for Language Teaching and Processing, where she had the opportunity to approach Open Learning and LMOOCs, and first understood the affordances of this format for language learning.

These first steps into this new subdiscipline in CALL were accompanied by relevant related work opportunities such as the design, implementation and facilitation of these courses, after joining the teaching team of some LMOOCs on the UNED (Universidad Nacional de Educación a Distancia) MOOC platform, UNED Abierta (https://iedra.uned.es/). These experiences, along with the further study of research in the field, resulted in a deeper comprehension of an exciting and relatively young field of enquiry. Likewise, it permitted the detection of some existing gaps that required researchers' attention, which served as an inspiration and basis for this work.

Some examples of the identified research gaps were the lack of an accurate knowledge of participants' behavioural traits and effective application of suitable learning theories, or the adaptation of these aspects to achieve an effective instructional design of LMOOCs. The publications focusing on these topics provided only anecdotal evidence, which did not enable the identification of common standards in the field. Hence, one of the purposes of the present study is to provide significant connections across different subject interest areas in LMOOC research, which should lead to a more coherent body of research.

## 1.2. Significance of the research

In view of the above, the main motivation in the development of this thesis dissertation has been to provide a plural perspective on LMOOCs as a consolidated subdiscipline of CALL. That broad perspective has necessarily required to draw on theoretical posits, such as learning theories, to subsequently put forward and test meaningful practical experimentation with the courses. The contributions to be presented here, therefore, aim not only to offer robust evidence to keep nurturing the growing body of dedicated research, but also to find new avenues of scientific inquiry as a natural consequence of the lessons learnt. This way, the plural perspective considered a variety of topics (learners' features perspectives, experimenting with the affordances of the courses, or introducing suitable analytic frameworks affecting the design), investigated appropriate ways to approach them methodologically, and proposed new areas of inquiry from a holistic angle.

As previously stated, this piece of research consists of a collection of published papers that have been developed within the Doctoral Programme in Philology at UNED. It is a thesis by published works and the rationale behind it lies on the need and convenience of gradually validating the research carried out as it was developed. The validation provided by the experts had a double effect. First, it permitted to ascertain that both topics and methods were appropriate, given the relatively newness of the area of research, and secondly, it allowed for a rigorous design of the subsequent research based on this validity acknowledgment.

Thus, it can be fairly stated that the course of this work has strongly relied on a logical and justified sequence of events, doubly endorsed by the expertise of the thesis supervisor, and the expert judgment from external reviewers and journal and book editors. It should be noted that external validation is especially relevant considering the publications' scope, their high level of specialisation, and their quality indicators. All of them belong to the area of Applied Linguistics and more specifically to CALL, which is the field of research in which this thesis is inserted.

## 1.3. Rationale for the compilation of the publications

The plural perspective that this thesis intends to offer is in line with the 'kaleidoscopic view' that Colpaert deemed as necessary in LMOOC research (2014, p. 161) almost a decade ago when the first monographic volume on LMOOCs was published (Martín-Monje & Barcena, 2014). Consequently, the initial phase in the PhD programme focused on a thorough revision of the state of the art, in order to understand where research in LMOOC was headed to. The results of the related piece of research can be considered the driving force behind the development of the rest of the studies

comprising this thesis dissertation and constitute Publication I. This first work consisted in a systematic review that precisely intends to guide researchers and practitioners to find guidance for the development of tangible, appropriate and pragmatic solutions to advance in their fields (Bozkurt et al., 2017; Sa'Don et al., 2014). This approach served its purpose and, consequently, subsequent research proposals were designed by considering specific needs encountered and an ascertained notorious evolution of the field.

This systematic review also served as a valuable tool to map theoretical trends which could serve as basis to develop sound proposals in LMOOC research. The literature review was focused on addressing historical issues of importance in the field, as noticed in Liyanagunawardena et al. (2013). The analysis and synthesis of the results were conducive to build the rest of the research proposals included in this thesis dissertation. The continuation of this section further explains the logical connection among the pieces included and provides a significant contextualisation of LMOOC as a field of research.

The origins of LMOOCs date back to 2013 when they were defined as "dedicated Web-based online courses for second languages with unrestricted access and potentially unlimited participation" (Barcena and Martín-Monje, 2014). LMOOC research has been regarded as an emerging field since the first academic publication and has grown exponentially in the past years (Martín-Monje, 2023). The consolidation of LMOOC as a well-established field has been possible because of the proliferation of high-quality scholarly publications and a substantial body of practice evidence.

Suitability of the format for language learning has been a recurrent discussion in research since language learning is skill-based (Barcena et al., 2015), although LMOOCs have been said to appropriately address all the elements of a language (Bárkány, 2018; Whitmer et al., 2014). Suitability is also conditioned by the pedagogies employed in these courses which follow traditional academic formats (Bozkurt et al., 2017) which may hamper real language communication and practice, and the provision of interactive and motivational educational materials (Perifanou & Economides, 2014). All these elements being strongly related to the instructional design (Chong et al., 2022; Sallam et al., 2020).

In the days LMOOC research was still an emerging field, it required analyses of both theoretical and practical aspects around the courses in a systematised way to be able to identify meaningful elements to consider. Liyanagunawardena et al. (2013) identified that LMOOC researchers were primarily exploring the use of the courses for language teaching and learning, encompassing discussion papers on the opportunities and challenges, showcasing instances of the creation and running of the courses, considering the pedagogic approaches used or that should be used, considering learners' participation, and analysing MOOC platforms and instructional designs.

These topics were still relevant and, therefore, emerged again in the first systematic review on LMOOCs (Sallam et al.,2020), though some of them were not as recurrent as in the former review. This work shed light about the evolution of research and incipient needs were highlighted as well as recommendations for reaching maturity in the field, such as the need for more specialised contributions, or the production of mix-methods studies. Besides, social language learning was postulated as a theory influent in language learning success, which confirmed LMOOC as a distinctive discipline

in relation with other MOOC disciplines where no predominant theories had been identified (Hew & Cheung, 2014). This common acceptance opened the possibility to focus on ways to enhance social language learning in LMOOCs.

The **first publication** in this thesis dissertation, "The coming of age of LMOOC research. A systematic review" is, as previously mentioned, an up-to-date systematic review on LMOOC research covering the publications from 2019 to 2021, a follow-up to the systematic review published by Sallam et al. (2022). The results of this study permitted to consolidate LMOOC research as a well-established subfield of CALL, but it also became a roadmap to guide the design and development of the rest of the research included in this work.

In accordance with the results obtained from the systematic review, it was confirmed that social language theory is an adequate educational theory for LMOOCS, with positive effects on learning outcomes and course completion (Ge & Li, 2021; Jitpaisarnwattana et al., 2021; Koukis & Jimoyiannis, 2019). This reinforced the results published by Sallam et al. (2020) which also pointed in this direction, evidencing that those courses which encourage social interaction and cooperation among participants and teaching teams are the ones which show successful language learning experiences in this massive format.

Social-based (language) learning conceives the learning process as a social activity (Hampel, 2018; Vygotsky, 1978). In this sense, learning results from contextualised interactions and a participatory approach have become an essential pedagogical reference to understand the architecture of LMOOCs. In line with this, **the second publication,** "Fostering social language learning in massive online courses: The

role of discussion forums and social media", is based on the postulates of social learning theory as reference in the field and on the well-documented limitations that MOOC platforms pose for language learning.

Probably, the biggest constraint is the lack of flexibility and adaptability in MOOC platforms, (Gimeno-Sanz et al., 2017), as well as the lack of designs which favour collaborative learning (Teixeira & Mota, 2014). In this sense, recommendations to enhance social learning in these courses were followed such as maximising engagement and interaction, facilitating self-organised learning and creating an instructor presence (Sokolik, 2014), in compliance with the Community of Inquiry model, which advocates for social, cognitive, and teaching presence in online learning (Bates, 2022).

The purpose of offering a wide and plural perspective on LMOOCs needed to remain sustained by solid evidence, and thereby the systematic review carried out in the first published paper served once again as a reference to this aim. The second aspect which proved to be significant for consideration as an appropriate avenue of study was participation in LMOOCs. Participation has been extensively approached in this online learning format both in generalist MOOCs (Bozkurt et al., 2017; Hew & Cheung, 2014; Lambert, 2020; Linayagunawardena et al., 2013; Sa´Don et al., 2014; Sangrà et al., 2015; Veletsianos & Shepherdson, 2015), and LMOOCs (Bárkány, 2018; Beaven et al., 2014; Chacón-Beltrán, 2017, 2018; Orsini-Jones et al., 2015; Ventura & Martín-Monje, 2016; Wang et al., 2018).

Participation as a concept, but mainly regarding participants as learners, can be considered a key element in LMOOCs, due to their capacity to determine the learning experience. Therefore, a substantial body of research has attempted to acquire a deeper understanding of various aspects related to this population such as perspectives,

capacities, perceptions, psychological states, demographics, motivation, or behavioral patterns. The study of participants' profiles in LMOOC research has been lately proposed to develop appropriate content (Luo, 2019; Mac Lochlainn et al., 2021; Zeng et al., 2020), as well as curriculum designs in line with participants' needs (Ding & Shen, 2020; Luo & Ye, 2021).

Research shows that there has been a consistent effort to find a solution for low retention and engagement rates, analising the participants' experiences, emotions, and behaviour, and listening to their demands. Nevertheless, there are some human constraints unrelated to the design, curricular content, or configuration of LMOOCs that may not have a simple solution as they seem to be inherent to the participants' own perception of engagement in massive courses (Godwin-Jones, 2014), due to time commitment (Friðriksóttir, 2021), and as well as the lack of skills and skill development to face autonomous learning (Agonács et al., 2020).

Considering the related evidence, **the third publication** in this thesis, "Profiles in the LMOOC participant: Bibliographic analysis and case study", presents a bibliographic analysis to observe behavioural profiles in LMOOCs reported in the literature. This research aimed to find plausible connections between the concerns regarding the pedagogical models on which the courses were built, the completion rate, and participant engagement, and the specific behaviours displayed by participants. It was hoped that the results would culminate in concrete proposals to address participation issues in LMOOCs. In this context, grounded classifications of MOOC participants' behaviour (Anderson et al., 2014; Kizilcec et al., 2013) were cross-referenced to present

data diversity by looking for the greatest number of similarities in the defining features of each authors' profiles.

Previous research that has dealt with participation and course attrition has used course completion as indicator of learning success. However, the results of this third publication show that the focus should rather be on the perceived usefulness of content and specific resources by both passive and active participants, regardless of their course completion. LMOOCs are innovative educational models and should not be measured in the same way as more traditional online courses but should instead find alternative quality control measures which reflect better the different learning realities which take place in an LMOOC.

All this considered, it seems evident that the heterogeneity of the participants and the variety of learning needs concurring in the same learning space just reinforces the discussions about the current suitability of the format for language learning. This instance was taken as an opportunity to propose inclusive language learning spaces by the monitoring of the quality of the design in an LMOOC presented in the **fourth publication,** "The significance of instructional design: analysis of content in Language MOOC forums".

The inclusive design proposed considered discussion forums as the main and only mean of communication provided by default in the courses, given the relevance of this variable for language learning. The inclusive features proposed required then to target passive and active participation or different engagement levels, and considered specific needs such as accessibility, ease of navigation, and development of self-determination learning strategies. The objectives of this last publication were also

attached to the results found in the systematic review driving this thesis dissertation as far as the conceptualisation of the field is concerned.

Conceptual papers which contributed to the theoretical foundations of LMOOC research and the proposal in Sallam et al. (2020) had already recommended to improve and consolidate theoretical frameworks in the field. This tendency was also noticed in the first publication of this thesis which additionally revealed an increased number of papers based on this modality. Conceptual papers mostly approached the influence of appropriate instructional designs by paying attention to participants' needs. Thus, the design of the methodology in this last piece of research considered documented participants' learning requirements in LMOOCs to observe the quality of the instructional design.

First, interaction to develop language skills (Sokolik, 2014) governed the selection of the discussion forums for analysis. Furthermore, the design of inclusive spaces required efficient and structured organisation of the subject threads (Castrillo, 2015; Zheng & Warschauer, 2015) for an easy access to these spaces, and assumed heterogeneity in the engagement with this communication tool (Poquet et al., 2020). Lastly, self-determination learning strategies were promoted, since the lack of them may condition learning processes in LMOOCs (Agonács et al., 2020).

The analysis was focused on finding out the effect of the predefined structures on the whole population in an LMOOC in terms of effectiveness for language learning and sufficiency to promote actions that stimulated self-determination considering passive and active participation. Consequently, the quality of these communication forums -which are an essential resource in the courses- was monitored in terms of

accessibility and meta-learning, which can be considered a first step to ensure efficient designs which meet the needs of different participant profiles.

This monitoring of design quality and the resulting proposals drive the formulation of common analytical frameworks in the field, which may be regarded as the enablers that support the design of an appropriate learning space for language learners. This way, the instructional design in LMOOCs as a concept is reinforced by the search for ways to optimise one of its core components. This analysis enables to carry out specific actions, as the ones introduced in the paper, to enhance efficient learning spaces in LMOOCs.

The title selected for this thesis dissertation, "Massive open online courses for foreign language learning: A plural perspective" clearly illustrates the intentionality and purposes of providing a broad view of LMOOC research, which has become a consolidated discipline in online language learning. This introductory chapter has provided a theoretical approach to LMOOC research assuming a level of maturity reached in the field and identifying pending challenges that are strongly related to the previously mentioned objectives of this thesis dissertation.

# 2. AIMS, OBJECTIVES AND HYPOTHESIS

**The main aim that has driven this thesis dissertation is to provide a plural perspective on LMOOCs based on theoretical foundations and their practical application. The hypothesis based on this premise is that the study of unified, coherent and diverse elements in LMOOCs - a bibliographic review of the state of the art, the role of discussion forums and social media in social language learning, the participants' profiles, and the importance of instructional design in LMOOC forums- will lead to a multidimensional and comprehensive understanding of this novel field of research, which has previously addressed these issues in isolation. Hence, the linkage among a the theoretical, exploratory, and experimental approach adopted should lead to the proposal of practical and replicable solutions to the issues addressed, and the identification of new variables to consider in LMOOC research.**

Consequently, a series of specific objectives have been set to rigorously reach the plural perspective targeted and are detailed below:

- **Objective 1 ($O_1$):** To describe the state of the art of LMOOC research through a systematic review of scholarly publications from 2019 to 2021, focusing on the most discussed topics.
- **Objective 2 ($O_2$):** To develop customised functionalities in an LMOOC to foster social language learning.
- **Objective 3 ($O_3$):** To assess the impact of an educational intervention based on social learning theory in terms of fostering interaction and improving the learning experience.
- **Objective 4 ($O_4$):** To ascertain the dominant learners' profile(s) in LMOOCs considering the behavioural patterns reported in the literature.
- **Objective 5 ($O_5$):** To propose an efficient methodological design to monitor the quality in the design of LMOOC forums.
- **Objective 6 ($O_6$):** To determine whether the pragmatic nature of the forum contributions in an LMOOC is coherent with the structured threads.

The research aims and objectives are closely linked to the different papers that are included in this thesis. The first objective was addressed in Publication I, the second and third objective are addressed in Publication II, the fourth objective is addressed in Publication III and the fifth and sixth objective are addressed in Publication IV. Overall, these papers provide a comprehensive and multidimensional view of the research aims and objectives and demonstrate the significant contribution that this research intends to make to the field. The diagram below shows a visual representation of the objectives and papers:

**Publication I**

*The coming of age of LMOOC research*

**(O1)**: To describe the state of the art of LMOOC research through a systematic review of scholarly publications from 2019 to 2021

**Publication II**

*Fostering social language learning in massive online courses*

**(O2)**: To develop customised functionalities in an LMOOC to foster social language learning

**(O3)**:To assess the impact of an educational intervention based on social learning theory in terms of fostering interaction and improving the learning experience

**Publication III**

*Perfiles del participante en LMOOC*

**(O4)**: To ascertain the dominant learners' profile(s) in LMOOCs considering the behavioural patterns reported in the literature

**Publication IV**

*The significance of instructional design*

**(O5)**: To propose an efficient methodological design to monitor the quality in the design of LMOOC forums

**(O6)**: To determine whether the pragmatic nature of the forum contributions in an LMOOC is coherent with the structured threads

FIGURE 1. PUBLICATIONS INCLUDED IN THIS THESIS AND THEIR RELATED RESEARCH OBJECTIVES

# 3. METHODOLOGY

## 3.1. Introduction

This section presents the methodological framework and provides an overview of the approaches followed in each of the publications, to facilitate the understanding of the most specific issues that are detailed in each of them. The research design and methods employed in each piece of research have been selected responding to the needs and specific objectives addressed. Consequently, this compilation embraces a variety of methodologies, and, therefore, different data collection and analysis tools and samples. The affordances of each method employed according to the research objectives is detailed below.



**Publication I**
*The coming of age of LMOOC research*

**Method**: Systematic review of the literature

**Publication II**
*Fostering social language learning in massive online courses*

**Method**: Design-based research

**Publication III**
*Perfiles del participante en LMOOC*

**Method**: Bibliographic review

**Publication IV**
*The significance of instructional design*

**Method**: Analysis of content

FIGURE 2. RESEARCH METHODS FOLLOWED IN EACH OF THE PUBLICATIONS

The plural perspective envisioned in this thesis dissertation had an influence in the selection of the different methodologies employed in each of the publications, which followed the latest insights on this topic by combining qualitative and quantitative

approaches (Martín-Monje, 2023). In Publication I, a systematic review of the published literature was conducted to ascertain the state of the art of LMOOC research in compliance with the first objective established. It focused on the most discussed topics in the literature that should inspire the design an application of subsequent research proposals.

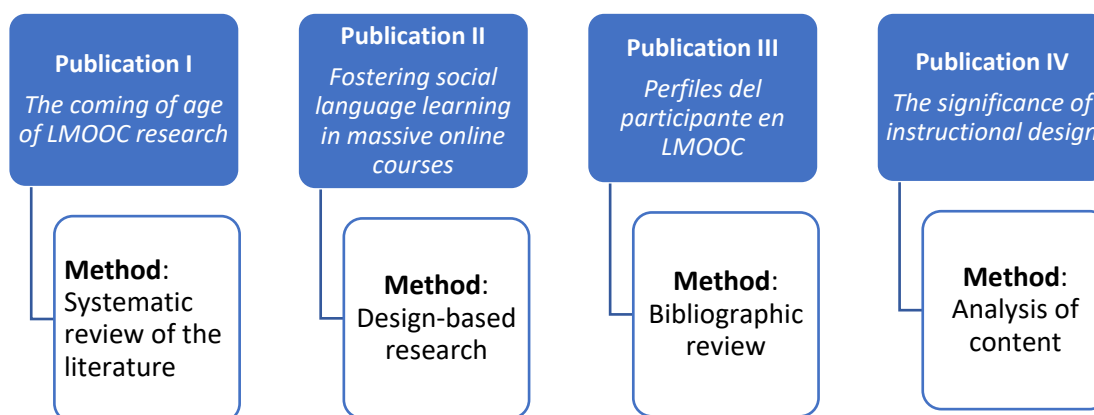In line with the results in the first publication -which pointed out the importance of social language learning in LMOOCs- a Design-based Research was adopted in Publication II. This methodological approach was intended to precisely guide the design of an educational intervention in an LMOOC and the analysis of the results by the application of mixed techniques, which correspond to objectives 2 and 3, namely: to develop customised functionalities in an LMOOC to foster social language learning, and to assess the impact of the intervention in terms of fostering interaction and enhancing the learning experience.

Additionally, the methodology employed in Publication II was the bibliographic review, which was carried out to state the most prominent participants' behavioural profiles in accordance with objective 4. This review should provide a general overview of attitudinal and activity patterns in participants to propose appropriate course structures, according to the affordances of this methodology. Whereas these affordances are clearly sufficient for the research objectives established, which aimed to report background information about participants' profiles, it must be noted that this methodology do not follow strict protocols and, therefore, can result in higher levels of bias than other type of literature reviews.

Finally, an analysis of content in the discussion forums of an LMOOC was carried out in Publication IV to make valid inferences from forum contributions, which was employed to address objectives 5 and 6. This methodological approach has been commonly used to analyse asynchronous discussion group transcriptions (De Wever et al., 2006), by the development of different data collection tools corresponding to specific objectives. Objective 5 aimed to propose an efficient methodological design based on the monitoring of forum contributions, so the analysis of content was justified. In turn, objective 6, was established to ascertain coherence between forum threads and their purposes by the same technique.

It should be acknowledged that the design of the methodological procedures throughout this piece of research considered the suggestions derived from the main highlights in the first publication. A significant result was the growing trend in the use of mixed methodologies, which was discussed convenient as it allowed a more in depth understanding of the nature of language learning in LMOOCs. Therefore, while the nature of the studies remained essentially qualitative in its general approach, the publications compiled in next chapter specify the methodological procedures and illustrates how quantitative and qualitative elements were combined.

## 3.2. Methodological framework

This subsection provides an overview of the four different methodologies employed in each of the publications. It provides accurate definitions of each of them and describes the most relevant aspects addressed for a general understanding of the aims pursued by their application.

### *3.2.1. Systematic review of the literature*

The systematic review conducted consisted in a literature search focused on addressing LMOOC research and its subsequent presentation of results in an analytical and synthesised manner (Alexander, 2020). This study adopted the widely agreed principles to be applied in systematic reviews such as a clear description of the methodological process and a theoretical justification that allows to raise convenient research questions. Additionally, it considered solid protocols for the description of the rationale, hypotheses, and methodology to be applied, thus the understanding and appreciation of the methods used was facilitated allowing for replicability (Fink, 2010).

It should be noted that this first publication replicated the methodology followed in Liyanagunawardena et al. (2013) and later in Sallam et al. (2020) as it is considered a reference in the field (Sa'Don et al., 2014). This way, it complied with the protocols expected from the methodological approach. Additionally, this systematic review matched in nature with an incipient research genre in Computer Assisted Language Learning (CALL) (Chong & Reinders, 2021) called Qualitive Research Synthesis (QRS) (Chong & Plonsky, 2021). It also proposes to present research results according to a pre-determined research protocol to allow transferability, applicability, and generalisability.

The main objective was to determine the current scenario in LMOOC research by looking at the methodologies used and the most discussed topics in the literature. The databases Web of Science, Ebsco Host, ERIC, JSTOR, IEEE, ProQuest, and Scopus were selected as search engines in which the Boolean equation employed was ('MOOC' OR 'LMOOC') AND ('Language'). Data was analysed in a four-stage approach, namely:

identification of the studies, screening, eligibility and inclusion, and data extraction and synthesis. Subsequently, inclusion and exclusion criteria were applied:

Inclusion:

- Studies covering a time dimension from 2019 to 2021

- Studies focused on MOOCs for language learning

- Studies presented in conference proceedings, journals, and book chapters

- Studies in English language

Exclusion

- Duplicated publications

- Studies sampling LMOOCs but focused on generalist MOOCs

- Studies with no access to full publications

The application of the protocols described permitted to delimit the search and focus the pursued objective of acquiring an up-to-date perspective on LMOOC research.

### 3.2.2. Design-based Research

Design-based Research (DBR), as it was conceived, intended to be used to systemically adjust various aspects of the designed educational contexts, so adjustments would serve as experimentations allowing researchers to generate theory in naturalistic contexts (Barab & Squire, 2004). DBR is based on "close cooperation between researchers, practitioners, and designers which consequently allows greater interaction of research and practice in education" (Štemberger, T., & Cencic, M., 2016:180). In the

case of LMOOCs, these roles usually are concentrated in the figure of the teacher (Castrillo, 2015).

The appropriateness of the application of this methodology in the present context has been widely argued (Levy, 2013; Reeves & McKenny, 2013). A series of conditions were proposed to be met for this to occur and, interestingly, CALL discipline historically meets these indicators for intervention (Reeves & McKenny, 2013). The following situations were identified for DBR application in the intervention presented based on Kelly's (2013) determinant factors:

- How to teach the content is unclear (applied mostly to productive language skills)

- Instructional materials/resources are poor or not available (applied to the lack of resources for interaction)

- Complex factors may negatively affect progress (applied to the lack of flexibility of LMOOC hosting platforms)

DBR was adopted for responding to $O_2$ and $O_3$ as a methodology capable to develop solutions to complex problems in educational contexts which, additionally, should permit the improvement of the principles or theoretical assumption underlying the design of solutions (Barab & Squire, 2004; Design-based Research Collective, 2003; Reeves & McKenny, 2013). DBR explicitly assumes the different steps indicated below to be completed for its successful application:

- Literature review to detect educational issues to be eligible for its application

- Selection and design of the intervention accordingly

- Evaluation of the design: formulation of hypothesis, sample selection, and data analysis planification

- Data collection and analysis

- Interpretation of results and elaboration of conclusions contributing to refine subjacent learning theories

The lack of resources for linguistic interchange in the platforms hosting LMOOCs was taken as a starting point for the educational intervention. The main purpose was to provide participants with an effective set of tools to enhance active interaction and social language learning. Therefore, two extra functionalities were implemented: the use of social media and the reinforcement of the teaching presence in the forums of the course, whose implementation and analysis allow for responding to the established **O$_2$** **& O$_3$**.

### 3.2.3. Bibliographic review

The methodology employed in response to **O$_4$** was the bibliographic review, following principles of qualitative research. It must be highlighted that bibliographic reviews differ methodologically from systematic reviews, and, consequently, their results do not allow for replicability. The collection of data for the bibliographic analysis was performed in two different phases considering the sources consulted. First, the search was aimed to review LMOOC dedicated monographs, and later it was focused on a review of periodical publications in scholarly journals.

The steps followed for data collection were carried out in different search engines, such as Google Scholar, ERIC, Web of Science, and the search tool provided by

the electronic library of the National Distance Education University (Universidad Nacional de Educación a Distancia, UNED). To narrow the results, a simple search and a Boolean search ('LANGUAGE' 'MOOC') AND ('CASE STUDY') were carried out.

The specificity of the search criteria in pursuit of participants' behavioural features yielded a reduced selection of published papers. It was detected that most authors focused on categorising LMOOC participants in relation to the level of engagement with the course and the level of participation leading to completion rates. Descriptive data from the selection of the studies was crossed with the taxonomies developed by Anderson et al. (2014) and Kizilcec et al. (2013), since the combination of each authors' definitions allowed a more accurate description of the findings.

A complete description of participants' behaviour in MOOCs as defined by the mentioned authors can be found below:

Kizilcec et al. (2013)

- *Completing*, referring to those who attempt to perform all the assignments regardless of the outcomes.

- *Auditing*, referring to those with mainly interact with audiovisual resources, but they do not submit any assignment, although they usually continue in the course to its completion.

- *Disengaging,* referring to those who drop out of the course in the first third of it, although they maintain an active behaviour.

- *Sampling,* referring to those who almost exclusively access to audiovisual resources for a limited period of time.

Anderson et al. (2014)

- *Viewers*, referring to those who mainly access audiovisual resources, but do not submit any assignments.

- *Solvers*, referring to those who submit assignments, but do not access to the resources available.

- *All-rounders*, referring to those who find a balance between the access to resources and assignments submission.

- *Collectors*, referring to those who download the available material, but do not access audiovisual resources nor do they practically submit any assignments.

- *Bystanders*, referring to those who registered in the courses without getting involved in any of the learning activities proposed.

### 3.2.4. *Analysis of content*

Analysis of content has been defined as "a research methodology that builds on procedures to make valid inferences from text" (Anderson et al., 2001) as referenced in de Weber et al. (2006). This methodology was employed to shape the response to $O_5$ and $O_6$. It consisted in the examination of asynchronous discussion group transcriptions from the forum of a LMOOC following related research practices (Brinton et al., 2014; Cui & Wise, 2015; Poquet et al., 2020; Son, 2003; Tang et al., 2020; Wise et al., 2017).

This methodology is commonly employed for text analysis, although replicability is not a usual practice since the disparity of objectives pursued in each investigation lead to the creation of new measurement instruments adapted to specific objectives. Despite

of this fact, this type of methodology is normally based on three main axes governing its application: coherent research objectives, learning theories underlying the didactic use of forums -when employed for the analysis of the input in these communication spaces- and the units of analysis selected.

Data collection consisted in the identification and classification of pragmatic speech acts as units of analysis in the subject modules of the forums. They were labelled according to the communicative intentions encountered corresponding to pragmatic speech acts in the forum transcriptions. To this aim, the following steps were completed:

- Identification of the most recurring terms in the corpus (forum transcriptions)

- Calculation of the relative frequency of each term to select the ones with a minimum relative abundance of 0.17%

- Development of a taxonomy for the classification of speech acts (communicative intentions)

- Classification of the speech acts according to their pragmatic function and based on the taxonomy previously created

The description of the criteria applied for each category in the taxonomy can be found below:

- *Learning process:* aspects in relation to their learning process within the course (activities, evaluations, and outcomes)

- *English background:* expressing prior experiences with the target language

- *Feedback:* feedback provision from the aspects of the course to peers' and facilitators' comments

- *Reflection:* individuals' reflections on any aspect of the course or the learning process

- *Intention:* prospects for the course in form of a wish or challenge

- *Self-evaluation:* reflection on the learning process involving the assessment of personal performance or other course dynamics

- *Personal:* personal issues unrelated to the course or the target language

- *Strategy:* learning strategies (own, learnt, or studied) not derived from reflective acts, but personal ones

- *Technical issues:* report of technical issues

# 4. PUBLICATIONS

## **4.1. Publication I:** Díez-Arcón, P. & Martín-Monje, E. (2022). The coming of age of LMOOC research. A systematic review (2019-21), Innovation in Language Learning and Teaching. https://doi.org/10.1080/17501229.2022.2082446

The leading publication of this compilation was a systematic review that inspired the author on the design and application of subsequent research. First, the analysis of the methodologies employed by LMOOC researchers reflected a predominance of qualitative techniques, although mixed methodologies use was prevalent in the last year consulted (2021). Mixed methodologies permit to establish more robust relationships between the human factor and the elements affecting and influencing the learning process, and, consequently, they provide a more accurate picture of the realities under study. Also, the results reflected that the most representative topic-related categories established for classification were those dealing with participation issues and the conceptualisation of LMOOC research. The former was confirmed as a constant in LMOOC research, especially when addressing low retention and engagement rates. The latter evidenced the importance of instructional designs which take into account language learners' needs and, thus, enhancing LMOOCs' capacity to reach larger audiences. This gets the LMOOC format closer to its original spirit in the provision of quality education for all.

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# The coming of age of LMOOC research. A systematic review (2019-21)

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## ABSTRACT

There has been an increasing interest in Language Massive Open Online Courses (LMOOCs) in terms of research and number of courses offered, shown by the monographic volumes and systematic reviews that have been published so far. This study aims to consolidate this emerging field by exploring research from 2019 to 2021. The origin of scientific contributions, methodologies used, and the most discussed topics have been considered. Results show that the distribution of papers remain concentrated in a few countries and universities -such as Spain, UK and China, which are producing progressively more high-impact research. Also, the consistent use of mixed methods has implied the optimisation of available data and allowed for more fine-grained conclusions. Lastly, it has been proved that LMOOC publications are evolving to a more mature phase, with an increase of conceptual papers that has contributed to consolidate core theoretical foundations. It can be then said that LMOOC research has reached its coming of age and is now considered a well-established sub-field of Computer Assisted Language Learning, with substantial practice and high-quality scholarly publications.

## Introduction

The gradual expansion of Language Massive Open Online Courses (henceforth, LMOOCs) has run parallel to that of other massive courses (MOOCs), although they appeared a bit later: the first MOOCs date back to 2008 and the first LMOOCs were offered in 2013 (Bárcena and Martín-Monje 2014). LMOOCs have been defined as 'dedicated Web-based online courses for second languages with unrestricted access and potentially unlimited participation' (Bárcena and Martín-Monje 2014), and their very nature continues to pose challenges in terms of suitability for language learning which recent literature reviews in LMOOC research (Sallam, Martín-Monje, and Li 2020) and in the appropriateness of current instructional designs (Chong, Khan, and Reinders 2022) are attempting to overcome. The number of courses offered increased eightfold in five years (Sallam, Martín-Monje, and Li 2020), together with a surge in LMOOC scholarly work. The first systematic review on the topic was published in 2020 and covered the first five years (2014-19), revealing the research trends and topics of interest. Other comprehensive studies have followed, such as a monographic issue in the ReCALL journal (Martín-Monje and Borthwick 2021) and a critical review of design features of LMOOCs (Chong, Khan, and Reinders 2022), and this emergent field of research has gained momentum. The time has come to continue the systematic investigation initiated by

Sallam, Martín-Monje, and Li (2020) with the aim of consolidating LMOOCs as a valuable sub-field of CALL (Computer-Assisted Language Learning).

The objective of this study has been, thus, to determine the current scenario in terms of LMOOC research. The purpose was two-fold: (1) to acknowledge the source of scientific contributions, such as institutional and authoring information, and types of publication; and (2) to describe the present state of the art with attention to the content of the papers reviewed by studying the methodologies used and the most discussed topics in the literature.

## Systematic reviews on MOOCs: what do we know to date?

The different challenges faced by MOOCs have given rise to several dedicated systematic reviews and a pioneering one on LMOOCs. The most common themes in MOOC research are complementary to each other and coherent with the development needs of an incipient and innovative format. Reviews have highlighted the need to find connections with learning and educational theories to understand how learning takes place in MOOCs and have made distinctions between the pedagogies used: connectivist or behaviourist (cMOOC and xMOOC, respectively) (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017; Ebben and Murphy 2014; Gašević et al. 2014; Hew and Cheung 2014; Kennedy 2014; Liyanagunawardena, Adams, and Williams 2013; Raffaghelli, Cucchiara, and Persico 2015; Veletsianos and Shepherdson 2016). The tendency has been to use xMOOC structures, motivated by their proximity to traditional academic formats (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017; Hew and Cheung 2014; Veletsianos and Shepherdson 2016) and to focus research on them, rather than cMOOCs (Veletsianos and Shepherdson 2015).

Various aspects related to participants have also been widely studied – their perspectives, demographics, motivation, behavioural patterns, etc.- (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017; Gašević et al. (2014); Hew and Cheung 2014; Lambert 2020; Liyanagunawardena, Adams, and Williams 2013; Sa'Don, Alias, and Ohshima 2014; Sangrà, González-Sanmamed, and Anderson 2015; Veletsianos and Shepherdson 2015). However, it has not been possible to achieve a comprehensive view, since these studies usually lack the perspective from non-completers and those who dropped out (Koutropoulos et al. 2012; Liyanagunawardena, Adams, and Williams 2013; Veletsianos and Shepherdson 2015). The difficulties associated with the data collection from this so-called 'sub-population' (Veletsianos and Shepherdson 2015) were noticeable and required the search for specific strategies in data collection and analysis processes, but also specific resources and greater openness with the data generated (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017).

Some authors also missed the inclusion of teachers', instructors', and designers' views on MOOCs (Liyanagunawardena, Adams, and Williams 2013; Raffaghelli, Cucchiara, and Persico 2015; Veletsianos and Shepherdson 2016). Scholarly work has tended towards the production of conceptual, theoretical, or descriptive studies (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017; Raffaghelli, Cucchiara, and Persico 2015), and empirical studies were labelled as 'unsophisticated' (Raffaghelli, Cucchiara, and Persico 2015, 504). According to Bozkurt, Akgün-özbek, and Zawacki-Richter (2017) the lack of quantitative inferential data inhibited specific solutions to be found (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017).

The systematic review on LMOOCs by Sallam, Martín-Monje, and Li (2020) was the first comprehensive analysis of LMOOC research. The study pointed to the need for an increase in specialised contributions to build a more consistent theoretical framework in view of the scarcity of related research. It also suggested the production of mixed-methods studies to get the best out of data and tools available and offer more holistic perspectives. In practice, authentic social interaction was highlighted as the key to success with instructors' presence and social networks having a positive influence on course completion and participants' motivation and engagement. Therefore, social learning was postulated as a relevant theory for learning in LMOOCs to emerge, moving away from MOOCs in other disciplines where no predominant theory was identified. Some other trends identified in the study were the conceptualisation of LMOOCs in terms of their specific characteristics and

needs and attempts to find suitable models for language learning and teaching, and the interest in the new roles of the teacher.

## Methodology

Systematic reviews are a way of synthesising the published literature on a particular topic and are a valuable support for researchers and practitioners who can find guidance for the development of tangible, appropriate and pragmatic solutions to advance the field (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017; Sa'Don, Alias, and Ohshima 2014). They consist of a literature search focused on addressing an issue of importance and its subsequent presentation in an analytical and synthesised manner (Alexander 2020). According to Moher et al. (2015) systematic reviews should be based on protocols that can describe the rationale, hypotheses and methodology to be applied, thus facilitating understanding and appreciation of the methods used and allowing for replicability (Fink 2010) as cited in Liyanagunawardena, Adams, and Williams (2013). In the PRISMA declaration (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) (Urrútia and Bonfill 2010) the authors highlighted the importance of both the justification of the review in context and the methodological part.

The review by Liyanagunawardena, Adams, and Williams (2013) has had the highest impact index in MOOC research (1591 citations) and is considered a reference in the field (Sa'Don, Alias, and Ohshima 2014), which prompted replication of its methodology (Sallam, Martín-Monje, and Li 2020). The present study gives temporal continuity to the former systematic review on LMOOC (Sallam, Martín-Monje, and Li 2020), whose methodology has been replicated: (1) since it reflects the widely agreed principles to be applied: clear description of the methodological process and a theoretical justification that allows to raise convenient research questions, and (2) as it is validated due to its publication in a high-impact journal. It should be noted that the methodology used finds its correspondence with the CALL (Computer Assisted Language Learning) disciplinary standards for Qualitative Research Synthesis (QRS). This incipient research genre in CALL (Chong and Reinders 2021) is also intended to present research results meaningfully synthesised according to specific research questions and a pre-determined research protocol, which should allow for transferability, applicability of findings and generalisability. Figure 1 summarises the methodology employed in the review process, which along with the following described phases, matches, in nature and form, with the methodological framework for QRS proposed by Chong & Plonsky (2021) as cited in Chong and Reinders (2021).

### Stage 0: Identification of studies

The databases mentioned in Table 1 were selected as search engines. The search terms established were 'MOOC', 'LMOOC' and 'Language'. The final Boolean equation was: ('MOOC' OR 'LMOOC') AND ('Language'). The search results yield a total of 534 results distributed as shown in Figure 1.

### Stage 1: Screening

With a view to limit the number of publications, the following inclusion and exclusion criteria were set up (see Table 1). Duplicates ($n = 84$) were set apart leaving a total of (n) = 450. A total of 382 studies did not adhere to the inclusion criteria, so the final number of papers to be included in the review was 87.

### Stage 2: Eligibility & inclusion

After discarding duplicate papers and the ones that did not meet the established inclusion criteria, further reading of the selected papers was carried out, including a review of the abstracts and, if
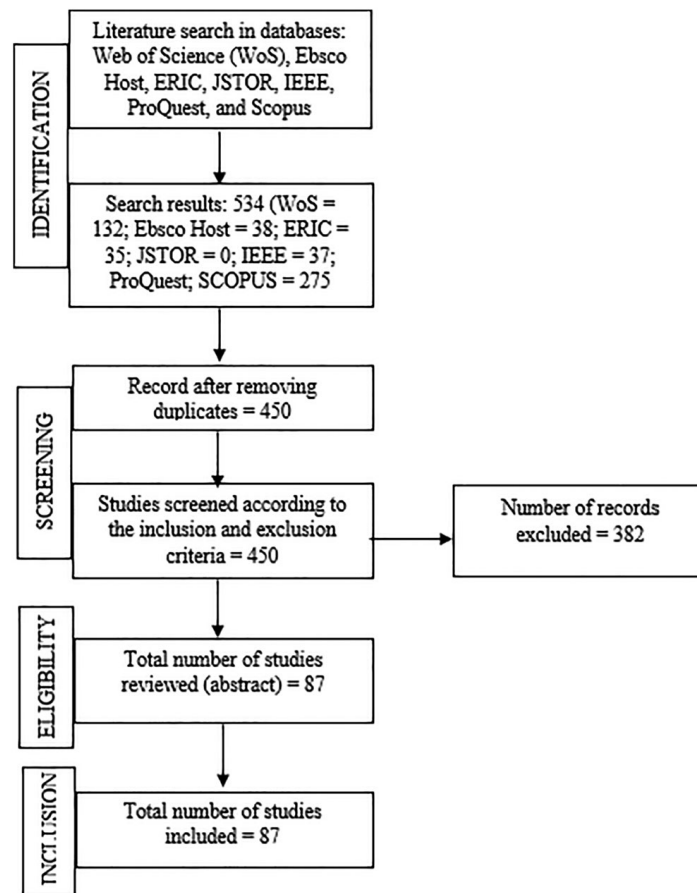
**Figure 1.** Flow chart of the review process.

necessary, of the full papers. A total of 87 studies were reviewed and finally selected for their inclusion in this study as their eligibility was confirmed in this phase.

## Stage 3: Data extraction and synthesis

Data regarding to the context of the sample was presented to provide a complete picture of the elements surrounding research on LMOOCs. This considered (1) countries and institutions; (2) types of publication, in the form of journal articles, conference proceedings and book chapters; (3) specialisation of the papers; and (4) authoring information in this period. A value of 100% was assigned to each study, which was divided by the number of participating authors, their countries, and institutions. This way, studies by a single author got the full score, as well as their institution and

**Table 1.** Inclusion and exclusion criteria of the systematic review.

| Inclusion criteria | Exclusion criteria |
|---|---|
| Time dimension: 2019–2021 | Duplicated publications |
| Focus on MOOCs for language learning | Papers sampling LMOOCs, but focused on generalist MOOCs |
| Keyword search in the 'title' and 'abstract' of papers | No access to full publications |
| Papers presented in conference proceedings, articles, and book chapters | |
| All geographical contexts | |
| Studies in English language (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017; Gašević et al. 2014; Lambert 2020; Liyanagunawardena, Adams, and Williams 2013; Sallam, Martín-Monje, and Li 2020) | |

country. If there was more than one author, the score was allocated proportionally among authors and their respective affiliations and institutions' countries. Likewise, information about the methodologies used in the total of the studies was collected. Quantitative data were used to present the related results. A qualitative analysis of the content in the selected studies was carried out to observe the issues addressed by the researchers in this period. According to Mayring (2015) the categories defining the themes identified need to be predefined and reflected in explicit definitions. 'Text reduction' is a technique aimed to reflect a global perspective of the material studied in a synthesised manner through abstraction (Mayring 2015) or isolation of concepts, and was used for the interpretation of the information contained in the studies. The content of the 87 abstracts included was, then, qualitatively analysed for classification. Double screening was carried out to ensure that the established criteria was applied consistently. Discrepancies between reviewers were discussed to determine the final categorisation of papers.

The thematic areas were those taken as reference in the preceding systematic review (Sallam, Martín-Monje, and Li 2020), which in turn were based on the taxonomies by Liyanagunawardena, Adams, and Williams (2013), namely: (1) Introductory: explaining aspects of LMOOCs and their uses in language teaching and learning; (2) Conceptual: covering discussion papers on the opportunities and challenges of LMOOCs, and other relevant topics such as accessibility and internationalisation; (3) Case studies: including instances of the creation and running of LMOOCs; (4) Educational Theory: considering the pedagogic approaches used or that should be used in LMOOCs; (5) Technology: presenting details or considerations of the software and hardware used in LMOOCs; (6) Participant-focused: considering aspects related to learners participating in LMOOCs, e.g. motivation, attitudes, etc.; (7) Provider-focused: considering aspects related to the provider of the LMOOC, including the use of different MOOC platforms and instructional design; and (8) Other: including papers that did not fit in any other category.

## Results

### *LMOOC research contributions: sources*

More than 70% of the production of literature on LMOOCs was concentrated in seven countries (see Table 2). The most productive country was Spain with 15.1% of publications, followed by China, Russia, and the UK with 11.8%, 11.6% and 10.1%, respectively. At the institutional level, eight universities stood out from the rest, accounting for around 40% of LMOOC research. Universidad Nacional de Educación a Distancia (UNED, Spain) had 11.6% of publications, followed by the Open University in the United Kingdom (5.9%), Dublin City University (Ireland, 5.8%) and Universiti Kebangsaan in Malaysia (5.3%). The year 2021 had the highest number of scientific productions (see Table 2), and data reflected a gradual increase over the course of the three years studied.

It can be also observed that 26.4% of the research was highly specialised, as papers were published in CALL-dedicated outlets. The results found contain one paper from a conference and 14 publications in journals (see Table 3). The number of publications in ReCALL journal was due to a special issue dedicated to LMOOCs. Specialised publications in the period reviewed increased by 9% in

**Table 2.** Ranking of countries with the highest scientific production 2019–2021.

| Country | N° of publications | Percentage |
|---|---|---|
| Spain | 10.8 | 15.1% |
| China | 8.5 | 11.8% |
| Russia | 8.3 | 11.6% |
| United Kingdom | 7.2 | 10.1% |
| Malasya | 5.6 | 7.9% |
| Ireland | 3.9 | 5.6% |
| Portugal | 3 | 4.2% |
| Other countries (19) | 47.3 | 33.7% |

**Table 3.** Distribution of CALL-related publications and authors.

| CALL publications | Authors |
|---|---|
| EUROCALL | Tanaka-Ellis and Sekiguchi (2019) |
| Computer-Assisted Language Learning | Ding and Shen (2019); Luo (2019); Sallam, Martín-Monje, and Li (2020); Zeng et al. (2020); Hsu (2021) |
| The EUROCALL Review | Ding and Shen (2020) |
| CALICO | Castrillo and Sedano (2021) |
| IJCALLT | Wright and Fumeaux (2021) |
| JALT CALL Journal | Jitpaisarnwattana, Reinders, and Darasawang (2021a, 2021b) |
| ReCALL | Martín-Monje and Borthwick (2021); Luo and Ye (2021); Fririksdóttir (2021); Mac Lochlainn, Nic Giolla Mhichíl, and Beirne (2021); Bárkányi (2021) |

comparison with the work in Sallam, Martín-Monje, and Li (2020), which also confirms a consolidation of LMOOCs as a field of research. Finally, and with the focus on the authoring of scientific productions on LMOOC, it must be noted that 73.6% of the papers reviewed were elaborated collaboratively. Only 18 of the 68 studies had a single author, which shows an inclination to collective research.

## Methods applied and topics addressed in the research of LMOOCs

The methodologies used are disaggregated in Figure 2. Qualitative methodologies were mainly used ($n = 35$). The most used data collection instruments were interviews, open-ended questionnaires and focus group discussions. There were also descriptions of implementation or design processes, analysis of participant feedback or extensive longitudinal research methodologies such as the experience sampling method (ESM) and the analysis of learning journals. Quantitative studies, however, were not numerous. Validated questionnaires were the main tool for data collection, and data are principally analysed through descriptive statistics. Exceptionally, there were studies that used more complex statistical techniques through the analysis of participants' LA (Learning Analytics).

Papers were classified through a categorisation that allowed to identify main topics covered. Reference was made to the categories used in previous reviews (Liyanagunawardena, Adams, and Williams 2013; Sallam, Martín-Monje, and Li 2020), which limit and clearly define the relevant
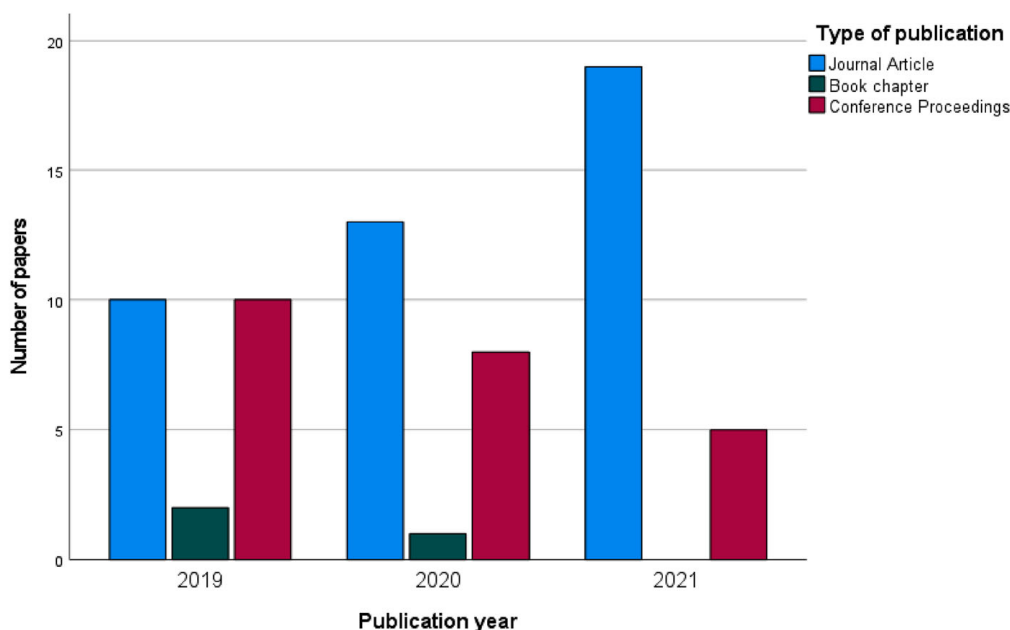


**Figure 2.** Temporal overview of research methodologies used (2019–2021).

**Table 4.** Contrast of the percentages obtained in Sallam, Martín-Monje, and Li (2020) and the present review. Values in bold represent increases with respect to one revision to the other.

| Taxonomy | Sallam, Martín-Monje, and Li (2020) | Díez-Arcón & Martín-Monje |
|---|---|---|
| Introductory | **6.7%** | 4% |
| Concept | 9.8% | **30%** |
| Case studies | **26.5%** | 16% |
| Educational Theory | **9.8%** | 7% |
| Technology | **8.8%** | 7% |
| Participant focused | 21.6% | **29%** |
| Provider focused | **15.7%** | 3% |
| Other | 1% | **4%** |

contents for each taxonomy. Studies fulfilling more than one taxonomy criteria were doubly classified (see Annex). Percentages obtained from the thematic classification are presented in Table 4, along with those obtained in Sallam, Martín-Monje, and Li (2020), where changing trends can be observed.

## Introductory

Introductory studies accounted for 4% of the production. Gimeno-Sanz (2021) reviewed the features of LMOOCs and emphasised the openness of the contents and the possibilities that communication forums provide to the practice of the target language. The short duration of the courses (4–6 weeks) was found to be conducive to the teaching of specific aspects of the language (Gimeno-Sanz 2021; Jasni et al. 2019; Razali, Hashim, and Yunus 2019). Locally, Russia and Malaysia presented the format as an opportunity for internationalisation and improvement of second language learning processes respectively (Ponomarenko, Oganesyan, and Teslenko 2019; Razali, Hashim, and Yunus 2019). Looking to the future, a progressive increase in the supply of LMOOCs was predicted. On the one hand, LMOOCs have the potential to provide access to quality training to wide audiences. On the other hand, some challenges are being overcome like the accreditation of the courses, or the improvement of social tools for communication and peer assessment, which allow greater personalisation (Gimeno-Sanz 2021).

## Concept

Conceptual studies comprised a substantial proportion of the research in LMOOC (30%). The possibility of LMOOCs in complementing formal education in a foreign language at, principally, university level was widely discussed (Bezus, Abduzhalilov, and Raitskaya 2020; Gafaro 2019a, 2019b; Ningsih et al. 2021; Rudneva, Valeeva, and Faizi 2020; Tanaka-Ellis and Sekiguchi 2019; Zakaria et al. 2021; Zubkov 2020a, 2020b). Emotional and cognitive aspects that influence learning processes in LMOOCs were also studied: autonomy and self-regulated learning (Ding and Shen 2020; Gafaro 2019a); motivation (Bárkányi 2021; Fririksdóttir 2021), satisfaction and intentionality (Hsu 2021); the effects of cultural and contextual factors (Fuchs 2020; Mac Lochlainn, Nic Giolla Mhichíl, and Beirne 2020)); or interaction, support and feedback, which were meant to promote a learning culture in Clifford et al. (2019). These papers are permitted to highlight the elements that should be considered for the smooth running of the courses and ensure participants' commitment. LMOOCs literature in this period also presented an alternative use of the courses, training displaced groups (Bárcena, Read, and Sedano 2020; Castrillo and Sedano 2021; Read, Sedano, and Barcena 2021), and the issue of accessibility through inclusive designs (Borthwick 2020). More discreetly, the challenges associated with transferring face-to-face language training to the LMOOC format (Alsheikhidris 2020) and the most suitable designs for teacher-centered audiences (Ding and Shen 2020) were also treated.

## Case studies

This category obtained the 16% of the papers reviewed. Experiences based on the application of specific methodologies obtained favourable results. Examples were the description of methodological processes for the integration of LMOOC into formal education (Andreeva et al. 2020; Zubkov, 2020a, 2020b), the application of methodologies to identify strategies and solutions for the improvement of the learners' experience (Castrillo and Sedano 2021) and the promotion of the acquisition of competences to cope with the foreign language online (Appel and Pujolà 2021). This fact showed the relevance of prior needs analyses to offer meaningful opportunities for language learners such as the full practice of language skills (Lebedeva 2021) or opportunities for interaction and participation (Ardavani). The description of learners' self-regulation and autonomy processes (Ding and Shen 2019; Gafaro 2019a, 2019b) stood up for the training in the acquisition of metacognitive strategies to support learning in distance learning environments. There were also studies describing opportunities for training on transversal competences and skills for social inclusion (Read, Sedano, and Barcena 2021), for language teachers' (Koukis and Jimoyiannis 2019) and other non-education professionals' (Rafiq et al. 2020). Quasi-experimental studies showed that the implementation of LMOOCs in formal education permitted to improve students' academic performance (Colombo López 2019; Estebas-Vilaplana and Solans 2020), thus again demonstrating the hybrid format as a viable option. Finally, the exploration of participation or concepts such as inclusion or exclusion in LMOOCs stimulated global reflection about distance language learning, bringing up epistemological discussion in Mac Lochlainn, Nic Giolla Mhichíl, and Beirne (2020).

## Educational theory

In educational theory-related studies (7%), social learning emerged again as an effective theory applicable to LMOOCs. Course designs that encourage interactivity, social interaction and cooperation among participants and teaching teams had positive effects on learning outcomes and course completion (Ge and Li 2021; Jitpaisarnwattana, Reinders, and Darasawang 2021a, 2021b; Koukis and Jimoyiannis 2019). The most frequently used pedagogies in LMOOCs were cognitive-behaviourist ones (xMOOC) (Wong 2021). xMOOC structures included instructional videos, activities, assessments and discussions in forums. In Luo (2019), pedagogical proposals were offered through the study of metacognitive techniques for language learning as an effective strategy to better cope with the foreign language training itself. Finally, in Arnbjörnsdóttir, Friðriksdóttir, and Bédi (2020), a guide to good pedagogical practices that influence learners' behaviour was presented.

## Technology

Among the papers included in this category (7%), descriptions of technological resources complementing LMOOCs at different levels were found. The papers by De Caro-Barek (2019), De Caro-Barek and Barek (2019) and Arnbjörnsdóttir, Friðriksdóttir, and Bédi (2020) are noteworthy for their didactic implications. The first two mentioned presented the 'Web Real Time Communication' software, which allowed the practice of oral skills. In Arnbjörnsdóttir, Friðriksdóttir, and Bédi (2020), technological principles applied in an LMOOC were introduced. These solutions allowed monitoring through a tracking system that informed about participants' needs and performance. Besides, we found evidence on the discussion about the technological impact of LMOOCs and its effect on the development of learners' skills as self-knowldege or self-learning ability (Alsheikhidris 2020). Also, implications of the implementation of LMOOCs, conceptualised as a technological object, were discussed in Aleksić-Hajduković, Sinadinović, and Mijomanović (2019).

## Participant focused

Participation in LMOOCs (29%) was mainly represented by foreign language learners, but also included perspectives from teaching professionals (Ardavani 2020; Fuchs 2020; Palacios-Hidalgo, Huertas-Abril, and Gómez-Parra 2020; Rafiq et al. 2020; Yaşar and Polat 2021). The amount of

papers listed in this category was higher to the ones obtained in the former review. The factors influencing adult learning, such as self-determination and its indicators: self-reflection and self-efficacy, and self-regulated learning were investigated through the analysis of participants' capacities and perceptions (Agonács and Matos 2019; Agonács et al. 2020; Bárkányi 2021; Gafaro 2019a, 2019b). Other studies focused on the analysis of psychological states to establish relationships between these and engagement or retention. They considered satisfaction (Read and Barcena 2021; Wright and Furneaux 2021), motivations (Fririksdóttir 2021; Mac Lochlainn, Nic Giolla Mhichíl, and Beirne 2021) or emotions (Beirne, Nic Giolla Mhichíl, and Mac Lochlainn 2019; Wright and Furneaux 2021) through the course experiences. Behaviours from participants allowed authors to define exploratory or productive profiles and to develop appropriate content designs (Luo 2019; Mac Lochlainn, Nic Giolla Mhichíl, and Beirne 2021; Zeng et al. 2020). Similarly, and in terms of design, Ding and Shen (2020) and Luo and Ye (2021) drew on participants' perspectives to propose curriculum designs in line with their needs.

### *Provider focused*

Descriptive studies were aimed to analyse and compare the supply of LMOOCs and platforms hosting them, obtaining a lower percentage (3%) than the one obtained in Sallam, Martín-Monje, and Li (2020). Symonenko, Zaitseva, and Osadchyi (2021) studied the characteristics of different LMOOCs on various platforms to find the most effective courses for employability in the specific Ukrainian context. This included the presentation of the design or layout of the learning objects, among others. On the one hand, we found generalist papers that analysed the digital functionalities and didactic possibilities of the platforms for instructors to have a guide supporting their decisions (Bezus, Abduzhalilov, and Raitskaya 2020). The guides were based on specific standardised elements such as general course information, interface, course structure and teaching resources. On the other hand, Hildsorf Rocha and Paulino da Silva (2020) reviewed the LMOOCs offered on different platforms and revealed the increasement in LMOOC production in countries such as China, which was associated to strategies to internationalise the country.

### *Other*

This category (4%) labelled the papers that did not fit into any of the pre-established taxonomies and implied an increasement in comparison with the results in Sallam, Martín-Monje, and Li (2020). It includes a miscelanea of papers: the pioneer systematic review of LMOOC research (Sallam, Martín-Monje, and Li 2020), which reflected for the first time on where research in the discipline was heading; Martín-Monje and Borthwick (2021) published a special issue focusing on LMOOC research; Skorobatoga, Shraiber, and Markus (2021) presented LMOOCs as a versatile format that served as a basis for developing competency-based language programmes; and finally, Rubaai and Hashim (2019) focused on instructors and stakeholders involved in the creation and implementation of LMOOCs with suggested improvements at the institutional, design, and sustainability levels.

## Discussion

### *LMOOC research sources*

Considering the former review, no substantial changes were found in geographical and institutional distribution of papers which can be understood as a continuing trend. Spain continued to be a country in which MOOCs arise much interest, with a substantial production of courses and publication of numerous research papers (Aguaded-Gómez, Vázquez-Cano, and López-Meneses 2016; Pérez Sanagustín, Maldonaldo, and Morales 2016; Ruiz-Palmero, López-Álvarez, and Sánchez-Rivas 2021), and the UK remained a regular and steady producer (Sallam, Martín-Monje, and Li 2020). Similarly, China's position in the ranking was predicted in Sallam, Martín-Monje, and Li (2020) and Ding and Sheng (2020). The latter authors explain that the country's foreign language education reform

policies have led to the emergence of LMOOCs as an effective approach and teachers have been actively encouraged to create new courses. China's platforms (iCourse and xuetangX) host more than 300 LMOOCs, leading the way in the provision of language learning worldwide, which can have a direct impact on research. As in the case of China, Russia also increased its production, allowing both the promotion of their universities internationally due to a series of socio-political strategies to make their language and culture known, which consequently allowed them to expand geo-politically (Hilsdorf Rocha and Paulino da Silva 2020; Zakharova and Yudintseva 2019). Malaysia ranked fifth, something that may be justified by the impetus given to the format by government institutions as part of a reform of the existing higher education and lifelong learning system (Aydin 2017), which is having a clear impact on research.

In general terms, we can confirm a tendency for certain institutions to specialise in LMOOCs research, covering practically all the related scientific production of the countries to which they belong. The most representative cases of this statement are the University of Lisbon in Portugal and Dublin City University in Ireland, which monopolised the production of their countries. UNED in Spain, with the highest number of publications in this period, was also, albeit to a lesser extent, a reflection of this reality, as were the Malaysian, Thai, and Icelandic universities. These findings were consistent, in a way, with the countries found to be relevant in the research of LMOOCs, with two exceptions. China and Russia have had a notable scientific production, although their publications are distributed among several different universities, which prevented any of them from standing out as representatives in the field.

The 61.1% of publications in scientific journals, compared to 36% of publications in conference proceedings, reversed the trend in Sallam, Martín-Monje, and Li (2020). The results, which showed a decline in publications in conference proceedings, reflected a new phase noticed in Sallam, Martín-Monje, and Li (2020) where the dissemination of LMOOC studies in scientific journals began to consolidate, bringing maturity to the discipline. The most relevant quantitative leap in terms of the number of papers published occurred from 2020 to 2021, with an increase of 8.4%. The increase in production over the years was also detected in Sallam, Martín-Monje, and Li (2020) and confirms the growing interest of the scientific community in LMOOCs. Regarding the authoring of papers, collaboration remains a recurrent way of working among dedicated researchers. These findings are consistent with the former LMOOC systematic review; therefore, it can be stated that the trend in the field is towards cooperative work.

### *Implications from the findings on applied methodologies and topic related categories*

Results from the quantification of applied methodologies showed that the distribution among the types of methods were irregular, although there was a predominance of qualitative techniques. However, mixed methodologies were prevalent in 2021. The combination of data collection techniques indicates a more efficient use of available data and involves the development of research designs that aim to obtain answers from different perspectives. The lack of generalisable studies through inferential techniques is one of the problems encountered in MOOCs (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017; Raffaghelli, Cucchiara, and Persico 2015), and according to the data, it remains an area underdeveloped by LMOOC researchers. However, mixed studies used LA more often than purely quantitative ones. The possibilities of analysis through the data produced by LA in combination with other qualitative tools make it possible to establish more robust relationships between the human factor and the elements that affect and influence learning processes. In this sense, the predominance of mixed studies can be considered an advance in the field following the recommendations described in Sallam, Martín-Monje, and Li (2020).

The analysis of the pre-established taxonomies to categorise research-focused topics revealed some relevant trend changes in relation to the first LMOOC systematic review. The decline of studies in some categories such as 'Introductory', 'Educational Theory', 'Case Studies', 'Technology' and 'Provider focused' are part of the baseline to explain the maturity attained in LMOOC research

and understand the elements that led this to occur. In introductory papers, the lack of specialisation of the platforms in language learning courses continued to limit the development of some language skills, mostly productive ones (Gimeno-Sanz 2021; Jasni et al. 2019; Razali, Hashim, and Yunus 2019). It can be deduced that LMOOCs have their strength in the specificity of their contents and in the complementary support they can provide to in-class training. However, the format should remain opened to make room for innovations that could broaden the definition and understanding of LMOOCs. The decrease of introductory papers in the present review leads to the conclusion that the pedagogical and structural bases of LMOOCs may be more solidly assumed than in the previous period.

'Educational theory' category also obtained less attention than in the former review. This can be explained by the assumption of social learning theories as the ones that better suit language learners' needs in this format (Ge and Li 2021; Jitpaisarnwattana, Reinders, and Darasawang 2021a, 2021b; Koukis and Jimoyiannis 2019; Sallam, Martín-Monje, and Li 2020). The studies included in this category showed that social-related learning theories and pedagogical approaches applied permitted to observe successful experiences in terms of learning outcomes. However, these assumptions should not be taken for granted. The use of methodologies applied to design with these proposals in mind should be promoted to facilitate the replication and report of successful experiences and further refine and contribute to learning theories. The same applied to the category 'Case studies', which can be understood as the overcoming of a phase in research where the focus was the display of the results with LMOOC experiences, aimed to simply showing experimentation with the massive format for language learning. In this case, the changing trend lied in the association of the case studies, describing course designs and implementation, with other categories dealing with theoretical and conceptual aspects of LMOOCs, leading to more complex research designs.

Technology related studies prompted, more discreetly than in the previous review, for the development of technological resources which can offer language tools to encourage the practice of the target language in hosting platforms. This fact was evident in Arnbjörnsdóttir, Friðriksdóttir, and Bédi (2020), where the technological solutions they propose were implemented in a non-commercial multiplatform application which allowed them to apply monitoring methods that have a clear positive effect on the language learning process. Multidisciplinary research is needed (Veletsianos and Shepherdson 2015), in this case, for the implementation and design of technological proposals that can address foreign language learning-related shortcomings of the platforms. 'Provider focused' research also obtained fewer related papers than in the previous review, which implies a limitation on the knowledge about stakeholders' perspectives in the creation and implementation of LMOOCs. Possibilities offered by the platforms in terms of didactic opportunities and design may have been assimilated. Nevertheless, updated evidence on providers is necessary, as the changing reality of the format may be reflected in methodological and design aspects that are worth considering.

The categories that experienced an increase were those related to participation, the conceptualisation of LMOOCs, and those labelled as 'Other'. The latter included topics that were not covered by the pre-defined taxonomies, which suggests that, if this growing tendency continues, original taxonomies should be redefined to encompass research alternatives that have not been considered. This increase may imply, therefore, that researchers are exploiting the versatility of the format, allowing for having a broader perspective by the exploration of areas that had not been examined to date. Similarly, the category labelled as 'Participant focused' reported various issues related to learners' motivation, commitment, behavioural patterns, etc., which continued to be cause of concern for researchers, since many papers focus on their attempt to solve low retention and engagement rates analysing participants' experiences, emotions, behaviours and listening to their demands, something that was not noticed in earlier MOOC research (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017).

However, there were some human constraints unrelated to the design, curricular content or configuration of LMOOCs that may not have simple solutions, as they seem to be inherent to the

participants' own perception of engagement in massive courses (Godwin-Jones 2014). Time commitment (Fririksdóttir 2021) and the lack of training to face autonomous learning (Agonács et al. 2020) were also identified as limitations. The latter, however, was proposed to be overcome from the design or from the application of metacognitive techniques that support foreign language learning (Mac Lochlainn, Nic Giolla Mhichíl, and Beirne 2021). It can be observed, then, that the interest in the study of participants is a growing constant in LMOOC research. These results are coherent with other studies that put the focus on participants' views and their approach to these courses (Bozkurt, Akgün-özbek, and Zawacki-Richter 2017; Gašević et al. 2014; Hew and Cheung 2014; Lambert 2020; Liyanagunawardena, Adams, and Williams 2013; Sa'Don, Alias, and Ohshima 2014; Sallam, Martín-Monje, and Li 2020; Sangrà, González-Sanmamed, and Anderson 2015; Veletsianos and Shepherdson 2015).

Conceptual papers increased considerably in comparison with Sallam et al.'s study (2020), and they represent 30% of the published work in these years. They focused on the various learning scenarios that LMOOCs enabled, showing the effective implementation of blended environments and other hybrid modes. Besides, the importance of instructional design taking into account learners' needs was also highlighted (see, for instance, Castrillo and Sedano 2021), and for the first time in the development of LMOOCs there were rigorous studies that evidenced how these courses can reach out to wider socio-demographic profiles, on the margins of education due to their background and socio-political circumstances, such as migrants and refugees. This would bring us closer to the original spirit of MOOCs, conceptualised as a tool to democratise access to education (Vázquez-Cano 2016).

## Conclusion

This paper presents the coming of age of LMOOC research, nearly a decade after the first LMOOCs were offered. The first systematic review (Sallam, Martín-Monje, and Li 2020) provided some recommendations to improve and consolidate LMOOC research, which, as this study shows, have been followed. Firstly, it was advised to devote more effort to building a robust theoretical framework, and that has been achieved through the increased publication of scholarly papers in renowned scientific journals – with even a monographic issue in one of the leading CALL journals – and also in terms of the topics covered. If we look at the taxonomy followed in both studies, we can observe that researchers are currently focusing on the conceptualisation of LMOOCs and paying attention to participants' needs and how this should result in a better instructional design. Continuity in the theoretical contributions would be desirable, with special attention to the suitability of instructional designs, taking as a reference the pending challenges found in the review by Chong, Khan, and Reinders (2022).

The previous systematic review recommended to continue to use mixed methodologies, since the quantitative side accounted for the available data and tools, such as learning analytics, and the qualitative one provided a more fine-grained analysis of the teaching and learning that takes place in these massive courses. In this sense, the present study confirms the prevalence of studies that make use of both quantitative and qualitative procedures, consolidating these as the preferred research methodologies in LMOOCs. This is a qualitative leap in LMOOC research, and the consolidation of this model would be desirable, in order to be able to build more robust methodological designs and understand more in-depth the nature of language learning in massive contexts.

Finally, it can be said that certain countries and institutions that had been identified in Sallam et al.'s previous studies as relevant research hubs in LMOOCs continue to do so, namely Spain, the UK and China, and there are two budding ones, Russia, and Malaysia. In terms of institutions, UNED in Spain continues to show consistent interest in this sub-field of research, but others, such as the University of Lisbon (Portugal) or Dublin City University (Ireland), also offer promising figures. The presence of these LMOOC research hubs calls for the emergence of collaborative

networks that allow for the creation of common analytical and productive frameworks. In sum, LMOOCs must now be acknowledged as a consolidated sub-field of CALL, which makes use of digital technologies in the massive format and is decisively contributing to transform online language teaching and learning, and as such should continue to be researched and implemented.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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Annex. Distribution of papers in line with thematic taxonomies (studies with double categorisation in bold).

| | |
|---|---|
| Introductory | Gimeno-Sanz 2021; Jasni et al. 2019; Ponomarenko, Oganesyan, and Teslenko 2019; Razali, Hashim, and Yunus 2019 |
| Concept | Alsheikhidris 2020; Amalia, Zamahsari,. and Pratama 2021; Arnbjörnsdóttir, Friðriksdóttir, and Bédi 2020; Bárcena, Read, and Sedano 2020; Bárkányi 2021; Beirne, Nic Giolla Mhichíl, and Mac Lochlainn 2019; Bezus, Abduzhalilov, and Raitskaya 2020; Borthwick 2020; Castrillo and Sedano 2021; Clifford et al. 2019; Ding and Shen 2019, 2020; Fririksdóttir 2021; Fuchs 2020; Gafaro 2019a, 2019b; Hsu 2021; Mac Lochlainn, Nic Giolla Mhichíl, and Beirne 2020; Mellati and Khademi 2020; Ningsih et al. 2021; Palacios-Hidalgo, Huertas-Abril, and Gómez-Parra 2020; Read, Sedano, and Barcena 2021; Read and Barcena 2021; Rudneva, Valeeva, and Faizi 2020; Tanaka-Ellis and Sekiguchi 2019; Titova 2019; Wright and Furneaux 2021; Yaşar and Polat 2021; Zakaria et al. 2021; Zubkov 2020a,, 2020b |
| Case studies | Andreeva et al. 2020; Appel and Pujolà 2021; Ardavani 2020; Castrillo and Sedano 2021; Cheng et al. 2020; Colombo López 2019; Ding and Shen 2019; Estebas-Vilaplana and Solans 2020; Fuchs 2020; Gafaro 2019a; Koukis and Jimoyiannis 2019; Lebedeva 2021; Mac Lochlainn, Nic Giolla Mhichíl, and Beirne 2020; Rafiq et al. 2020; Read, Sedano, and Barcena 2021; Zubkov 2020a, 2020b |
| Educational Theory | Arnbjörnsdóttir, Friðriksdóttir, and Bédi 2020; Ge and Li 2021; Jitpaisarnwattana, Reinders, and Darasawang 2021a, 2021b; Koukis and Jimoyiannis 2019; Ningsih et al. 2021; Luo 2019; Wong 2021 |
| Technology | Aleksić-Hajduković, Sinadinović, and Mijomanović 2019; Alsheikhidris 2020; Arnbjörnsdóttir, Friðriksdóttir, and Bédi 2020; De Caro-Barek 2019; De Caro-Barek and Barek 2019; Fitzgerad, Konig, and Witten 2019; Klindžić, Lazić, and Perković 2019 |
| Participant focused | Agonács and Matos 2019; Agonács et al. 2020; Amalia, Zamahsari,. and Pratama 2021; Ardavani 2020; Bárkányi 2021; Beirne, Nic Giolla Mhichíl, and Mac Lochlainn 2019; Ding and Shen 2020; Fririksdóttir 2021; Fuchs 2020; Gafaro 2019a, 2019b; Hsu 2021; Jitpaisarnwattana, Reinders, and Darasawang 2021a, 2021b; Luo 2019; Luo and Ye 2021; Mac Lochlainn, Nic Giolla Mhichíl, and Beirne 2021; Mac Lochlainn et al 2020; Palacios-Hidalgo, Huertas-Abril, and Gómez-Parra 2020; Rafiq et al. 2020; Read and Barcena 2021; Tanaka-Ellis and Sekiguchi 2019; Titova 2019; Wright and Furneaux 2021; Yaşar and Polat 2021; Zakaria et al. 2021; Zeng et al. 2020 |
| Provider focused | Bezus, Abduzhalilov, and Raitskaya 2020; Hilsdorf Rocha and Paulino da Silva 2020; Symonenko, Zaitseva, and Osadchyi 2021 |
| Other | Martín-Monje and Borthwick 2021; Rubaai and Hashim 2019; Sallam, Martín-Monje, and Li 2020; Skorobogatova, Shraiber, and Markus 2021 |

**4.2. Publication II:** Díez-Arcón, P. & Martín-Monje, E. (2022). Fostering Social Language Learning in Massive Online Courses: The Role of Discussion Forums and Social Media. In M. El-Henawy and M. Suárez (Eds.), English as a Foreign Language in a New-Found Post-Pandemic World, 271-291. IGI Global. https://doi.org/10.4018/978-1-6684-4205-0.ch013

The second publication included in this collection presents the design and assessment of an educational intervention in an LMOOC applying a Design-based Research methodology. The intervention aimed to foster social language learning using social media and reinforcing the teaching presence in the communication forums. The analysis revealed that social media could be considered a potentially valuable tool for language learning in LMOOCs. Besides, communication forums maintained their usual low levels of participation, although participants perceived the increasing teacher presence to be useful at the socio-affective level. Even though it was evident that interventions of this nature do not have the capacity to reach the whole of the target population in an LMOOC and can encounter acceptance difficulties, steps are being taken in the right direction to define new avenues for social language theory application. The experimental use of social media resulted in possible lines of improvement based on the experiences reported. These serve as a base for refining social language learning in the context of LMOOCs, as the methodological postulates of Design-based Research state.

# Chapter 13

# Fostering Social Language Learning in Massive Online Courses:
## The Role of Discussion Forums and Social Media

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## ABSTRACT

*This study delves into the fostering of social language learning in massive online open courses (MOOCs). These have become hugely popular during the pandemic, and it has been deemed relevant to investigate how the MOOC format can be customised, so that it addresses the specificities of foreign languages. To this end, a MOOC on EFL (English as a Foreign Language) strengthened its communication tools through the use of social media (Facebook and Instagram) and reinforced support in forums, with dedicated facilitators. The research methodology adopted was DBR (Design-Based Research) and data were collected through quantitative and qualitative techniques. The use of these communication tools (social media and reinforced forums) was generally low, but these enhanced features were positively received, and course designers are advised to persevere in this trend and consolidate the educational use of social media to promote online social language learning.*

## INTRODUCTION

Language massive online open courses (LMOOCs) have been defined as "dedicated Web-based online courses for second languages with unrestricted access and potentially unlimited participation" (Bárcena & Martín-Monje, 2014, p.1) and have been consolidated as a discipline with distinct characteristics from other areas of knowledge in the massive format (Colpaert, 2014; Perifanou et al., 2015; Sokolik, 2014). The recent pandemic has led to an increased interest in this educational trend (Elena Martín-Monje & Borthwick, 2021; Shah, 2020), with many adults who were not previously keen on online learning now signing up for these courses (Impey, 2020; Lohr, 2020; OECD, 2020). Not only that; in the case of language learning, it has become one of the top 10 subjects of interest in MOOCs, as millions of people, unable to pursue face-to-face classes, have tried to acquire new skills online by enrolling in these free courses (Shah, 2020).

A distinction must be made here, though. Online learning is not the same as the emergence remote learning that took place in 2020 and part of 2021 due to the unexpected lockdown triggered by the COVID-19 pandemic, as the National Council for Online Education has recently acknowledged (NCOE, 2022). Quality online learning is characterized by thorough planning and preparation (Bates, 2019), which is something that emergence remote learning could not afford, pressed by the urgency of the circumstances. Furthermore, in many cases, teachers attempted to replicate their face-to-face classes in an online environment, which often led to frustration on both sides (teachers and students). This is why reputed scholars, such as Bates (2022), insist on bringing out the best practices in online learning for post-pandemic education. These are: flexible delivery, clear structure, and student learning activities, use of specific online assessment methods and, above all, accommodating the three presences of the Community of Inquiry (social, cognitive, and teaching presence), all of which are precisely the backbone of MOOCs.

MOOCs represent the latest development in online learning, and the potential of these massive courses has been widely documented (see for instance Ferguson et al., 2016; OECD, 2020; or Yuan & Powell, 2013): they are cost-effective -since they can reach a much bigger number of learners with a smaller investment in education infrastructure-, and embody a significant attempt to democratize higher education, offering free access to quality educational resources from prestigious institutions around the world. Their pedagogical postulates are learner-centered and socially oriented, focusing on online social interaction and multimodal resources (Barcena et al., 2014) and leading towards competency-based education (Mazoue, 2013). However, their shortcomings have also been highlighted, and in language learning specifically, Sallam et al. (2020) have recognized various challenges: the (in-)ability to create adequate socialization in online environments, difficulties in interacting with native speakers, and a struggle to keep students' motivation throughout the course and reduce attrition.

Another acknowledged issue is the instructional design in these courses. Most of the LMOOCs produced to date tend to use cognitivist structures and have been labeled as xMOOCs, i.e., courses that run on a single platform and have a similar structure to traditional online courses and other academic formats. In these, teaching is perceived as a process of a mere transmission of knowledge (Bozkurt et al. 2017; Veletsianos & Sheperdson, 2016), facilitated by the functionalities of the platforms hosting them (MacLoughlin & Magnoli, 2017) and it must be admitted that, even though these platforms are easy to navigate and have a solid format and features (Chong et al., 2022), this learning scenario does not particularly favor active interaction and social language learning, as pointed out by Schulze and Scholz (2018) and Chong et al. (2022). Consequently, the need has arisen to create interactive and integrative

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spaces that enhance social learning and allow the development of the communicative competence in the target language (DeCaro-Barek, 2019; Read & Bárcena, 2020).

## SOCIAL LEARNING AND LMOOCS

The social nature of language learning stems from theoretical approaches which conceive the learning process as a social activity, such as Socio-constructivism (Vygotsky, 1978). This author examined the relationships between learning and development and found that learning is "distributed, interactive, contextual, and the result of learners' participation in a community of practice" (Vygotsky, 1978) as cited in Hampel (2019:28). Focused on language learning, Ellis and Larsen-Freeman (2006) highlight some key factors which become essential to understand the connection between language learning and social-based learning theories such as the capacity of the social context to embrace action, reaction, collaborative interaction, and mutually assisted performance. According to Hampel (2019) technology fosters these activities offering learners the possibility of engaging with their environment more effectively. Therefore, social learning has become a pedagogical perspective that is essential to understand the architecture of MOOCs and LMOOCs, with a participatory approach to learning and conceiving the role of the teacher as moderator of students' online interaction and learning processes. In fact, the most successful LMOOCs have been those which emphasize social interaction and engagement. In line with this, Sokolik (2014) has put forward some recommendations to enhance social learning in these language online courses: 1) maximise engagement and interaction; 2) facilitate, but do not manage, self-organised learning; and 3) create an instructor presence, all of which are consistent with the community of inquiry previously mentioned as one of the assets of online learning.

Read (2014) has reflected on the limitations that MOOC platforms pose for language learning courses, since they normally do not cater to the specificities of a skill-based discipline such as foreign languages (Bárcena & Martín-monje, 2014). It is thus a challenge to choose an appropriate MOOC platform and associated tool set to foster social language learning. Gimeno-Sanz et al. (2017) also acknowledge the difficulties to create an LMOOC using the most popular providers, such as edX or Coursera, since they have "very useful tools but [are] scarcely flexible or adaptable" (p. 51). Teixeira and Mota (2014) have also criticised how most of the MOOCs on offer lack a design which favours collaborative language learning. They recommend empowering the learning community "through collaboration, dialogue, peer feedback and active engagement from participants in the learning process" (p. 36) and, after admitting the limitations of current MOOC platforms, recommend boosting the social dimension of learning, making use of the course discussion forums, and adding external social media to the functionalities offered by MOOC providers. In this sense, one of the most successful attempts to add functionalities to MOOC platforms so that these courses cater to the specific needs of language learners has been done by Gimeno-Sanz et al. (2017), who added, among others, tools for synchronous and asynchronous computer-mediated communication (CMC) in the foreign language. In line with this, Wang Chong et al., (2022) evidence an increasing use of external tools to enrich learners' exposure to the target language and authentic materials, so it is expected that this trend continues and the LMOOC format becomes more fine-tuned and effective for language learners.

Both forums and social media can be considered asynchronous CMC tools. These tools have been part of online learning courses for many decades, and their importance in online second language learning has been profusely emphasized (Martín-Monje et al., 2017), since students' communicative competences

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and skills can be significantly developed through social interaction between students and teachers. They are regularly used as a standard learning resource (Lai & Gu, 2011), since they allow teachers to provide feedback both on the content of students' messages and their actual use of the foreign language, as would be done in a face-to-face class (Martín-Monje et al., 2017). Furthermore, they have also been linked to successful learning in LMOOCs (Martín-Monje et al., 2018), although most of the interaction seems to take place between teachers and learners, and not between learners themselves (Jitpaisarnwattana et al., 2021a; Rubio, 2015).

In massive courses such as LMOOCs it is necessary to organize the discussion forums in such a way that learners can find relevant information easily, and thus Castrillo (2014) advises structuring them into categories, subcategories, and subject threads which allow for the logical distribution of topics. In relation to this, the role of the teacher as facilitator is essential to achieve effective social learning in LMOOC forums. Castrillo (2014) enumerates the competences of these facilitators as follows: 1) oversee and moderate debate forums; 2) maintain a pleasant learning environment; 3) motivate students; 4) oversee possible social networks associated with the course (Twitter, Facebook, etc.); and 5) oversee quality control, reporting technical issues. In this sense, there have been some initiatives to promote learner-learner interaction and enhance social learning (Jitpaisarnwattana et al., 2021b, 2021a), since it is common for participants in LMOOCs to be disengaged, passive learners or 'viewers' according to Anderson et al.'s taxonomy (2014). That is why LMOOC researchers insist on advising to maximize learner interaction (Ding & Shen, 2020), although evidence shows that forum interaction is not necessarily linked to course success (Martín-Monje et al., 2018).

Social media have already been mentioned as relevant asynchronous CMC tools in LMOOCs, and research shows that they can enhance learner engagement (see for instance Jitpaisarnwattana et al., 2021a; Moreira Teixeira & Mota, 2014; Rubio, 2015; Sokolik, 2014), as well as contribute in motivation toward the course content (Gimeno-Sanz et al., 2017), although there is still not enough evidence to standardize their use. Various studies have proved the efficacy of Facebook for social interaction and language learning in LMOOCs (Martín-Monje & Ventura, 2016; Ventura et al., 2014), and also Twitter (Dixon & Thomas, 2016), but there are no published studies to date regarding more recent social media, such as Instagram. Appel and Pujolá (2021) propose the use of social networks for participants to set up linguistic interchanges, so their use is driven by organisational reasons. In Borrás-Gené et al. (2019) interactivity is enhanced using social media, although the merit cannot be attributed solely to social networks, as they come along with other gamified and communication tools. Finally, in Gimeno-Sanz et al. (2017) participants spontaneously create a Facebook group that meets the expectations students have out of social media. These expectations are related to the possibility of collaborating, sharing materials and creating community (Niu, 2019). However, they explain the need for didactic intervention soon to monitor interactions and resources.

This paper focuses on the development of customized functionalities in an LMOOC to foster social language learning, and how this initiative has been perceived by the course participants. The intention was to make improvements in the MOOC format so that it complied with the specificities of online language learning, and to produce an LMOOC with an effective set of tools to enhance active interaction and social language learning. To this end, a Design-Based Research (DBR) model has been followed, since one of the aims of DBR is to develop solutions to complex educational problems where the resulting proposals become a guide for professionals dealing with the same issues (Barab & Squire, 2014; Reeves & McKenny, 2013).

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*Figure 1. Steps followed in this Design-based research*
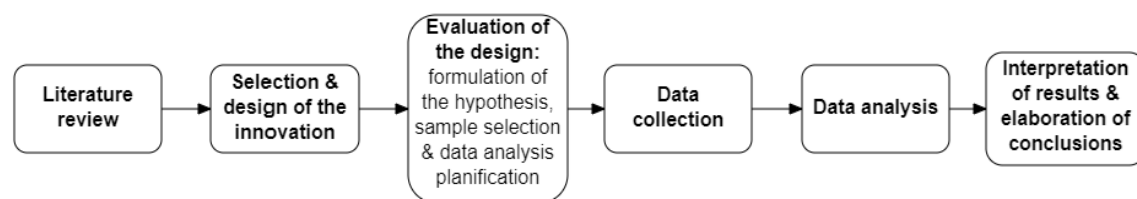


MOOCs generally rely on forums for student interaction, but in LMOOCs regular participation in those forums seems to be scarce (Martín-Monje, Read & Barcena, 2017). In the 4th edition of the LMOOC "How to succeed in the English B1 Level Exam", which took place in April-May 2021 with a total of 1177, two extra functionalities were implemented to foster active social learning in English as a Foreign Language (EFL): 1) the course designers made use of social media, creating profiles in Facebook (https://bit.ly/3Cj2oJ0) and Instagram (https://bit.ly/3jEfYPV) and 2) the support in the forums was reinforced, with dedicated facilitators.

## Research Hypothesis and Research Questions

The research hypothesis formulated was the following: "The implementation of extra functionalities to the LMOOC, which have been specifically designed to foster social language learning, will result in an improved learning experience and will boost interaction in the foreign language". To this end, the following research questions (RQs) have been put forward:

- RQ1: To what extent has the use of social media enhanced social language learning in the MOOC?
- RQ2: What has been the effect of the reinforced support in forums on fostering interaction and an improved learning experience?

## METHODOLOGY

## Design-Based Research (DBR)

This study adopted a DBR approach (Barab & Squire, 2004; Brown, 1992; Design-based Research Collective, 2003; Reeves & McKenny, 2013). DBR has two main objectives: 1) the development of solutions to complex problems in education and 2) the improvement of the principles underlying the design of solutions that have a direct relationship to the theoretical understanding of the subject matter (Barab & Squire, 2004). In this case, a need to foster social language learning in LMOOCs was identified, and the research was carried out with the aim of putting forward a proposal that would be of use of LMOOC researchers and practitioners who had the same issue. The steps followed are shown in Figure 1 below.

The lack of resources for linguistic production in platforms offering LMOOCs was taken as a starting point. The use of social networks was proposed due to their ability to promote social learning through interactivity (Deaton, 2015) and to provide an alternative for developing communicative competence in the foreign language (DeCaro-Barek, 2019; Read & Bárcena, 2020). For the elaboration of an effective

design in accordance with the objectives set out, Hung's principles (2013), which are based on socio-constructivist theories for fostering social presence through social networks in language teaching, were considered. These principles were almost entirely applicable to communication forums in this study, due to the adaptability to the possibilities they offer (see Table 1). Each of the principles considered effective social learning strategies that aimed to enable learners to communicate with peers using the target language (Oxford, 1990). This was done by increasing the presence of resources covering all language skills and by providing additional linguistic resources to those included in the course with examples of real language use (Palalas & Hoven, 2013). The MOOC was developed and implemented in 2021 and the course designers are planning to make changes for the next edition, based on to the results obtained, following the steps explained in Figure 1.

*Table 1. Application of Hung's principles (2011) in added course functionalities*

| Principle | Applied in social networks | Applied in communication forums |
|---|---|---|
| Input | ✓ | ✓ |
| Output | ✓ | ✓ |
| Noticing | ✓ | ✓ |
| Reflection | ✓ | ✓ |
| Interactivity | ✓ | ✓ |
| Multimedia | ✓ | ⊠ |

## Context and Data Analysis Planning

The LMOOC: "How to succeed in the English B1 Level Exam" (2021) (4th edition) took place in April-May (4 weeks duration) with a total of 1177 participants. An extra week was added at the end of the course following a request from students who needed some more time to complete the course. The course was launched at UNED Abierta (https://iedra.uned.es/), a MOOC platform from Universidad Nacional de Educación a Distancia (UNED). The course aimed to provide an overview of the components of the B1 Level exam in English as a foreign language. The course consisted of six thematic modules, namely: 1) Introduction, 2) Reading comprehension, 3) Writing, 4) Listening, 5) Speaking, and 6) Final reflections (1st week: Mod. 1 & 2; 2nd week: Mod. 3; 3rd week: Mod. 4 and 4th week: Mod. 5 & 6). Each module contained video lectures, associated reading material, forums, and activities to check participants' progress (tests, quizzes, and peer-to-peer assessments). All modules were open at the same time, but there was a suggested timeline aimed at helping participants to pace themselves.

Participants were encouraged to use social networks and forums through recurrent reminders inserted in the different sections of the course, with direct links to the profiles of the course on social networks. At the beginning of the course, participants had to complete a questionnaire in which, among other things, they stated their initial intention to use (or not) the communication tools offered by the LMOOC: the discussion forums inserted in the UNED Abierta platform and the social networks Facebook and/or Instagram. At the end of the course, they were also asked to complete a final questionnaire in which they reflected on their actual use of the communication tools. This final questionnaire included a query

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*Figure 2. Participation indicators from the communication tool*
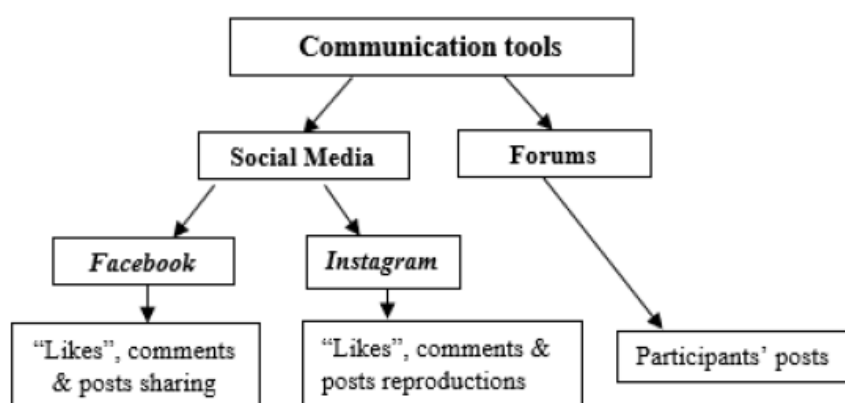


as to whether the participants wanted to continue being part of the research through a subsequent contribution. Interested participants were asked to provide an email address to be contacted at a later stage.

## Sample Selection and Data Collection

The study made use of quantitative and qualitative techniques for data collection. First, the level of interaction in the added functionalities was analyzed by counting indicators (see Figure 2) of participation in social media tools and forums. Then, questions dealing with intention and real use of the communication tools in the initial and final questionnaires (closed-ended) (see Table 2) were analyzed using descriptive statistics. Finally, an open-ended questionnaire was used to further delve into the most salient aspects from the answers provided in the former ones. In all cases, an accessibility sample (non-probabilistic method) was employed. Participants were informed about the research before the course started and their anonymity was guaranteed. On the one hand, their real names were not referenced in forums as their interactions were exported and stored with login IDs, and neither were they referred to in recording interactions on social networks. Additionally, login IDs were recorded in the pre-and post-questionnaires, and finally, the answers from the open-ended questionnaire were transcribed by numbering the participants to anonymize their responses. All the instruments employed complied with the General Data Protection Regulation (GDPR).

The analysis of participation in social networks and forums was carried out considering the number of volunteer participants in each tool and the number of reactions and interventions in social networks and forums respectively. Figure 2 illustrates the indicators of participation in each tool. Participation indicators were tracked to assess their relevance regarding the population sample. Social media and forums were used throughout the course and the teaching team posted publications related to the thematic modules following the timeline of the pre-established structure (see Figure 3). It must be noted that postings in the forums were different from those on social networks. The configuration of the forums in UNED Abierta allowed only text production (see Figure 4), so interventions were focused on providing constant and effective support to participants, encouraging interactivity and production in the foreign language, and providing additional resources through links.

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Table 2. *Questions regarding intention and real use of communication tools (initial & final questionnaire)*

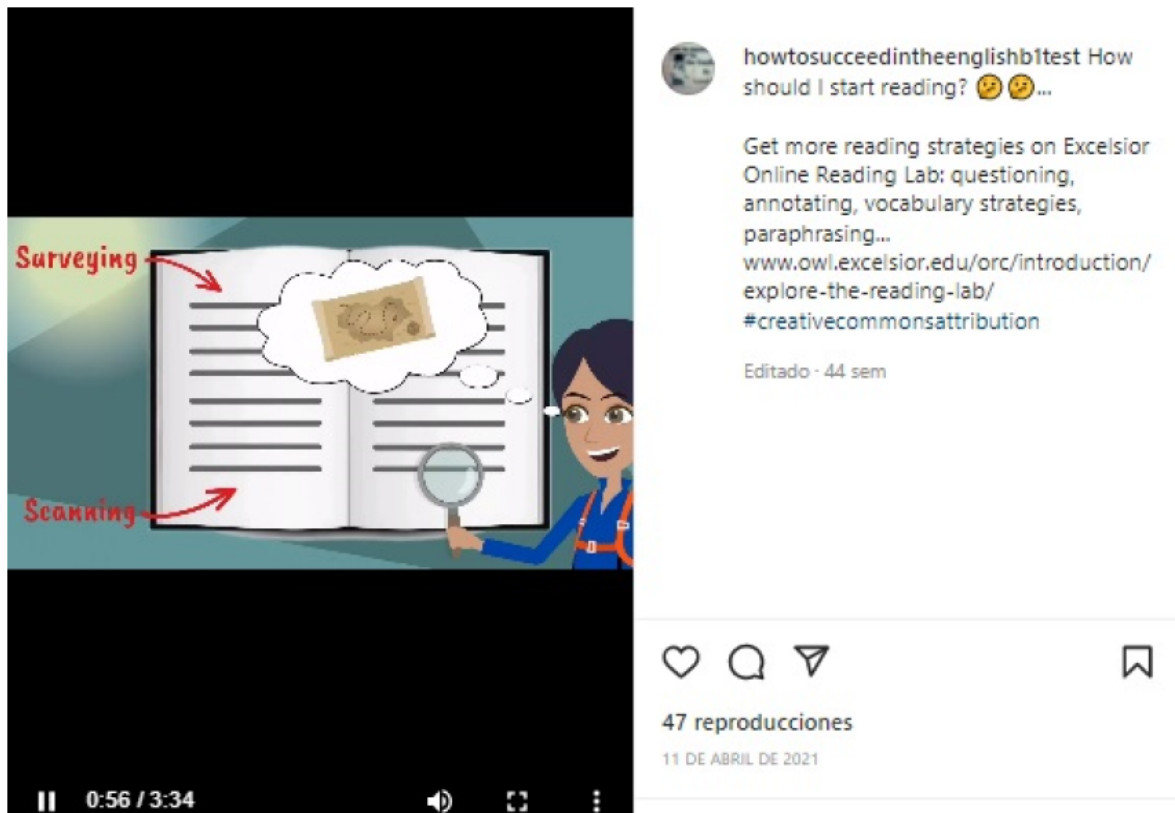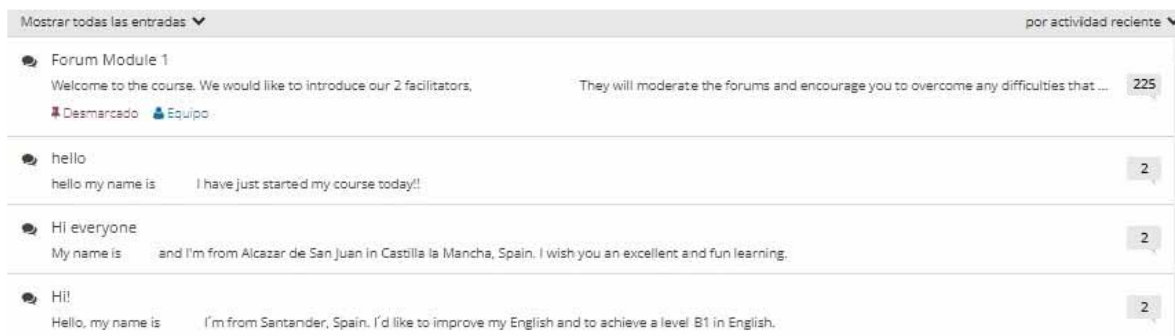| Initial questionnaire | Final questionnaire |
|---|---|
| What communication tool(s) are you intending to use during the course? | Have you used any communication tool during the course? If you did, please select which one(s) |

Figure 3. *Display of Instagram post*



Figure 4. *Display of forum interactions*



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The analysis of the questionnaires was carried out by descriptive statistics. To bridge the gap between the initial and final number of respondents, the initial sample of subjects was randomized. A random number was assigned to each subject in the list in MS Excel using the "randbetween" formula. The participants were sorted by decreasing the order of the random number associated with each subject. Then, the number of final respondents was selected to conform the random sample for comparison purposes with the final responses. The authors acknowledge that self-selection and other biases might be present in the variables associated with the final responses; hence, the randomization of the selection of the initial participants serves the purpose of controlling the error attributable to such potential biases.

Besides, an open-ended questionnaire was used in combination with other data collection techniques to bring more consistency to the research. The questions addressed some relevant topics of interest for the study such as participants' perceptions of social networks, differences between private and educational use of social networks, differences between the use of forums and social networks in LMOOC, and the sense of community that these practices were intended to encourage. Furthermore, it included two different sections to be responded to by social media and forums' participants and non-participants respectively. The open-ended questionnaire was administrated by "Microsoft Forms" and participants' answers were transcribed for further analysis. The responses obtained for each question were synthesized to highlight the most relevant results in accordance with the objectives of the study.

## DATA ANALYSIS AND RESULTS

This section presents the data resulting from the analysis of the participation indicators, the initial intention to use the communication tools of the course, and its comparison with their actual use, as well as the overall perception of the additional functionalities reflected in the final questionnaire and the open-ended questionnaire administrated.

## Participants' Interaction in Social Media and Discussion Forums

To determine the rate of participation in the communication tools, the reactions to the teaching team's publications on the social networks were counted using the indicators shown in Figure 2, considering the number of participants and related publications. On Facebook (FB) the number of people who joined the course profile by sending a friend request was counted (n=51). On Instagram, the quantification was made by counting the number of followers of the course profile (n= 46). The activity in the forums was tracked in the same way considering the number of participants in this asynchronous communication tool (n=135) and their posts. The results are summarised in Table 3.

Social networks were used by 4.3% (FB) and 3.9% (I) of the total sample. The average use increases slightly if we take as a reference the participants who finally started the course, represented by those who answered the initial questionnaire (n=618), obtaining 8.2% (FB) and 7.4% (I). These percentages cannot be regarded as a single value to represent an overall average of use of social networks, as some of the participants were involved in both platforms. An average of 10.9 posts were made per module, although the average number of posts on Instagram (11.3) was slightly higher than on Facebook (10.5). This was due to occasional synchronization errors where Instagram posts were not automatically replicated on Facebook. That implies that each Facebook post obtained 1.2 (1.9%) feedback indicators, while each post on Instagram obtained 24.4 feedback indicators (35.9%). Additionally, each participant reacted 1.5

*Table 3. Outline of participation markers*

| Module | N° of publications in social media | Feedback (FB) | Feedback (I) | N° of publications in forums |
|---|---|---|---|---|
| 1. Introduction | 9-FB; 11-I | "Likes": 30 | "Likes": 45; Post reproductions: 269 | 135 |
| 2. Reading comprehension | 5-FB; 5-I | "Likes": 18; Comments: 1; Posts sharing: 1 | "Likes": 19; Post reproductions: 93 | 52 |
| 3. Writing | 5-FB; 13-I | "Likes": 3 | "Likes": 54; Post reproductions: 99; Comment: 1 | 44 |
| 4. Listening | 10-FB; 7-I | "Likes": 14 | "Likes": 37; Post reproduction: 77 | 15 |
| 5. Speaking | 6-FB; 6-I | "Likes": 1; Comment: 1 | "Likes": 17; Post reproductions: 143 | 21 |
| 6. Final reflections | 28-FB; 26-I | "Likes": 12 | "Likes": 52; Post reproductions: 753 | 20 |

times on Facebook (2.9%) and 36.1 on Instagram (78.5%). In turn, forums were used by 11.4% of the participants taking the overall sample as a reference, and 21.8% if the people who finally started the course are considered. A total of 287 interventions were counted, which meant an average of 2.1% of interventions per participant. Peer interaction was low, so interventions were mainly individual doubts or reflections, with just four peer-to-peer interactions counted. Facilitators replied to every comment from participants and provided extra linguistic resources.

## Participants' Intention to Use and Actual Utilisation of Communication Tools

The comparison between the responses of the initial sample (n=618) and the final sample (n=120), was carried out by the randomization of the initial sample using the MS Excel "randbetween" formula. Randomisation was only performed on the corresponding questions in the initial and final questionnaires concerning the intention to use and confirmation of the use of the communication tools respectively. Figure 6 shows the results of the intention to use the tools for the initial randomized sample (pre-Questionnaire) and the participants' reported use of the tools after the course (post-Questionnaire). In the initial questionnaire, 87% of the participants expressed their willingness to use the forums, and just 5% expressed a preference for social networks (FB: 2.5%; I: 2.5%). The results on the actual use of communication tools revealed that there were variations in relation to the initial use intention. Forums were used 10.9% less than they were intended. Social networks, on the contrary, were used more than was expected initially with a relevant increase (24.4%) between pre-and -post-questionnaires (FB: +8.9%; I: +15.2%). The "Other" option was intended to reflect additional communication tools preferred by participants. Initially, 7.5% of participants selected this option, so its actual use also increased (+5,6%,), although no further communication tools were reported.

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*Figure 5. Results from pre-and post- questionnaires regarding initial intention and real use of communication tools*
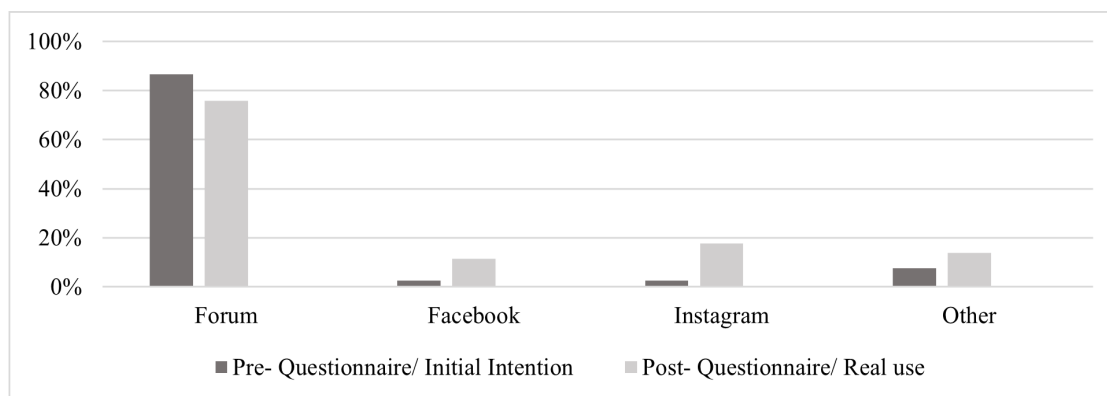


## Participants' Perception of Additional Functionalities

In order to acknowledge participants' perspectives on the additional functionalities implemented in the LMOOC, their perception of the role of the facilitators was collected through the final questionnaire. It was also possible to further explore some relevant aspects related to the communication channels enabled in the course through the administration of an open-ended questionnaire. The results of the questionnaire indicated that 78.3% of the participants felt supported by the facilitators. On the other hand, participants were also consulted about the role facilitators had in each of the communications tools, with the forums obtaining the highest rating in the positive-natured items such as: "useful", "welcoming", and "stimulating" (see Table 7). The usefulness of facilitation was not perceived on the same scale in social networks and, in addition, the term "irrelevant" emerged to have some prominence in the ratings.

*Figure 6. Participants' description of the role of facilitation in the communication tools*
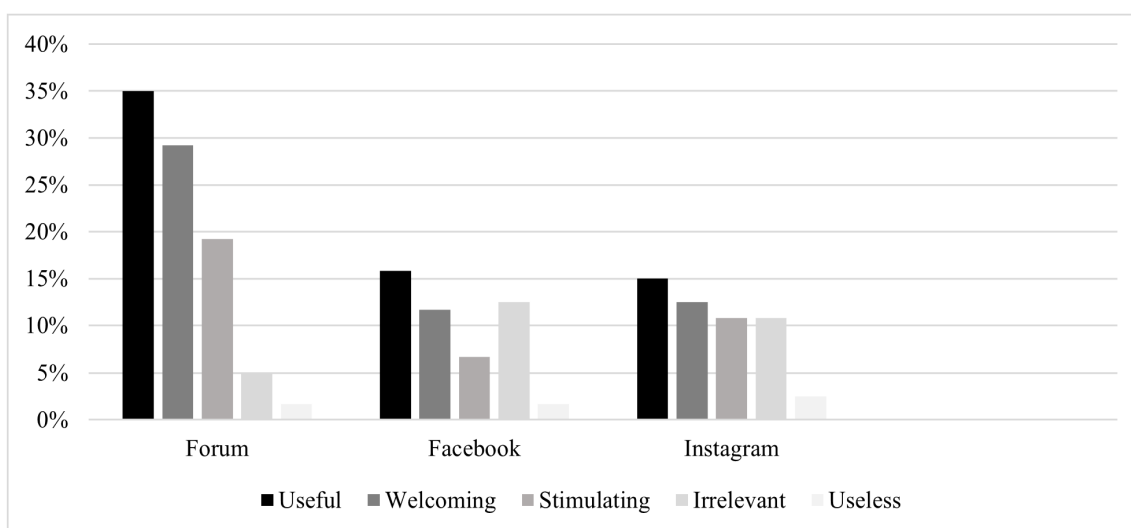
The analysis of the open-ended questionnaire revealed, in the first place, personal positions on the use of social networks in personal and educational settings. 50% of the respondents stated that they found the networks useful in the educational context pointing out differences in organization, content, and the way of acting in these spaces at an educational level. However, 37.5% of the interviewees stated that they did not use social networks in the private sphere, and, consequently, they were not encouraged to use them in the educational context either. Interviewee 3 explained: *"I don't like social networks and I don't use them, so I don't think they help in educational matters"*. In reference to the differences between the use of forums and networks in LMOOCs, 100% of those interviewed gave preference to the use of forums over social networks due to privacy issues, benefits related to the resolution of doubts at group level, or its customary use in the educational context. Another issue addressed was the creation of learning communities using social networks. 50% answered positively to this question, although it was noted that the objective of creating learning communities was only partially achieved, mainly due to the lack of interaction among participants. Participants who used social networks explained that these had permitted them to be involved in interactive spaces for English learning. Interviewee 2 stated: *"In my case, the networks have encouraged English language practice. It's fun, it has a clear purpose and it's challenging"*. Participants who did not use the networks explained that information about social networks was scarce in the course and explained some use-related problems or the privacy risks they perceived to be attached to social networks. They also reported the kind of posts that would have grabbed their attention such as more "listening" exam tips or resources with easy reading and automatic translation.

## DISCUSSION

The main aim of this research was to explore how the implementation of extra functionalities such as social media and reinforced support in forums could enhance social language learning in LMOOCs. The paper has adopted the DBR to present the design and results of the LMOOC "How to succeed in the B1 Level English Exam" (2021) in its attempt to overcome the challenge of providing adequate socialization spaces for foreign language learners participating in LMOOCs (Sallam et al., 2020). The recurrent identification of socialization problems in LMOOCs (Gimeno-Sanz et al., 2017; Moreira Teixeira & Mota, 2014) does not allow the full potential of the courses to be exploited, making it necessary to create interactive and inclusive spaces to overcome the restrictions of the platforms (De-Caro Barek, 2019; Read & Bárcena, 2020). The social, teaching and cognitive presence (Community of Inquiry) has been increased through enhanced facilitation in the course forums and the creation of profiles on the social networks Facebook and Instagram. These initiatives have attempted to replicate successful experiences in this format by maximizing the possibilities for interaction (Sokolik, 2014). Consequently, the same approach has been adopted by increasing teacher and facilitator presence in the course and encouraging interactivity, which, according to Sokolik (2014) are the key to successful LMOOCs. The study has focused on finding out the effect of the implementation on both the learning experience and the promotion of interactivity by applying the data triangulation technique for the separate analysis of the results from the use of forums and social networks to come to a determination on the implications of the design. According to the Design-Based Research Collective (2003), this must allow inquiring into the nature of learning in the complex (LMOOC) system and to refine, in this case, social learning theory.

## Facebook and Instagram: Promising Results for the Enhancement of Social Language Learning (RQ1)

In this LMOOC the degree of involvement of the participants was low. In fact, the participants perceived a limited usefulness of social media for language learners and were not initially interested in using it. Other studies have obtained similar results (Appel & Pujolà, 2021; Borrás-Gené et al., 2019), so this research reinforces the contributions previously made in this issue. Nevertheless, it should be highlighted that the participants used social media more than they thought they would (with an increase of 24.4% between pre-and post-questionnaires), so there is the potential to increase social media presence in these courses. Interviews revealed a certain reluctance or even prejudice against the use of social media in education and possible privacy issues. Low participation rates in social networks can be explained based on the data collected from the participants. First, the initial questionnaires provided information on the low intention of using these tools, where participants referred to a lack of knowledge about what they could gain from being part of them. This fact suggests that a broad spectrum of the participants had not made use of social networks in the educational context before. Therefore, the initial intention of use did not correspond to its real final use. This fact opens the possibility of continuing to explore this path, since it encourages them in their EFL practice, as reported by the interviewees.

It must be noted that the focus of the research was on the experience of participants who decided to use social networks, rather than on the volume of participation. Participants involved in social media reported pleasant learning experiences and were surprised by the novelty, usefulness, and effectiveness they implied for their learning objectives. However, the feeling of contributing to the creation of a learning community was not fully achieved due to the marked lack of interaction. If we consider the indicators of interactivity, it seems evident that participants involved in social networks were generally passive and limited their activity to the viewing of resources. "Likes" were not particularly numerous, nor were other forms of feedback such as producing comments or sharing posted resources. According to Deaton (2015), cognitive concepts such as memory, motivation, or attention are enhanced by social networks. They require focused attention that leads to active behaviors simply by using them. This fact implies that the viewing of resources could be an indicator of knowledge acquisition as it stimulates the interaction with information. It is therefore deducible that participants who used the social networks gained learning benefits from the mere exposure to the additional resources provided. The implementation of social networks, by their mere presence in the course, has already allowed participants to find additional spaces within this specific educational setting where they can interact, which in this context includes flagging, tagging, sharing, rating, and commenting, among others (Conley & Sabo, 2015). According to these authors, social networks enable positive learning behaviours through actions like connecting, communicating, and creating, which activate the principles of constructivism and related social learning theories.

It must be added that, in a massive online course such as this, there are factors that are beyond the control of any teaching team, apart from the non-predictive nature of activities organized based on social interaction (Conley & Sabo, 2015). On the one hand, some participants do not conceive massive courses as regular training and consider that there is no need for constant attendance (Godwin-Jones, 2014). Furthermore, the interviews reflected the resistance of an important part of the respondents to using social networks. The combination of these realities brings us to a scenario in which it must be assumed that any type of intervention such as the one presented 1) will not reach the whole of the target population, and 2) will encounter acceptance difficulties. The latter assumption is based on the novelty

of social networks in this educational context, which means that they are not yet fully normalized (Bax, 2003), and participants' perceived use-related risks, mainly privacy issues, which made them reluctant to use them in their personal sphere and the educational one. The use of social media in education is relatively new, so it is normal to find an initial resistance to accepting the educational use of tools that are generally associated with leisure activities in the personal sphere. The seed to foster social learning using social media has been planted, so this practice should be sustained and consolidated in the new editions of the LMOOC.

## Course Forum Reinforcement: Enhanced Experience, Standard Use (RQ2)

The reinforcement of the forum during the course was based on the need to successfully cover competences associated with facilitation such as forum moderation or student motivation to support the massive and heterogeneous audience in LMOOCs (Castrillo, 2014). Participation during the course followed the usual patterns identified as the scarcity of interventions and interveners (Martín-Monje, Read & Bárcena, 2017), and decreasing participation as the weeks progressed, despite having personalized attention and additional resources and activities related to the course contents. Interactions were mainly between participants and facilitators, with peer-to-peer interactions being anecdotal. It cannot be considered that there was a breakthrough in promoting the intended interaction with the reinforcement of the forums. However, the data allows us to observe that the facilitation permitted participants to have a more enjoyable learning experience. The descriptors defining participants' evaluation of the facilitators in the forums were positive. Usefulness is the most recurrent option to describe their role, followed by those expressing positive feelings such as the welcoming or stimulating effect they provoked. As a common tool in online foreign language learning (Lai & Gu, 2011; Martín-Monje et al., 2017), its use was not a novelty in relation to other courses, which is confirmed by the participants' high rates of intention to use.

However, data showed that forums were used less than initially expected, which can be associated with how participants envisage MOOCs: they are free courses in which they can choose how much or how little they engage with the learning resources and how much they interact online. Even though forums remained the most used tool over social media, this seems to be out of habit more than anything, since results showed that participants did not use the forums that much. Besides, peer-to-peer interactions followed a trend already identified in the studies by Jitpaisarnwattana et al. (2021a) and Rubio (2015), which precisely highlight the lack of communication among peers, which in turn implies a low use of these spaces for the development of language skills. Finally, the socio-affective element seemed to play a clear role in the relationship between participants and facilitators, which implies the achievement of various of the objectives associated with these figures, namely maintaining a pleasant learning environment, and motivating students (Castrillo, 2014). However, they failed to increase the levels of interaction and it cannot really be said that social learning achieved its full potential in this sense.

Possible lines of improvement in relation to this intervention must be adaptable and valid in new contexts due to the variability of concurrent elements in research (Brown, 1992). The development of new strategies based on the principles applied in the design of this study (Hung, 2013) is the culmination of the postulates of DBR. In this regard, there are possible improvements based on experience that would enable the needs identified to continue to be met. In the case of social networks, some participants reported that access information to on social networks was scarce or non-existent at all. It is, therefore, necessary to promote the social networks to be used earlier and more intensely and to provide accurate information about what future users will find there. Information published on social media should remain

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interactive and offer resources that allow noticing and reflection about language contents. Exposure to resources brings benefits to participants, so an increase in publications, in line with studies such as Borrás-Gené et al. (2019), has the potential to maintain or even increase these positive effects. Zheng et al. (2016) detected the construction of spontaneous working groups through social networks, which highlights the networking opportunities they offer by putting people with the same goals and interests in contact with each other.

Based on the pioneering experimentation and results of this study with the Instagram social network in massive courses, the possibility of using this social network is gaining strength over other generally used options and brings forward the need to look out for other similar tools that may be more innovative or socially accepted soon. As for the forums, they are still a pending issue, as the intervention designed did not have the expected effects in terms of interaction. Participants' usual passive behavior (Anderson et al., 2014) is confirmed, so MOOC instructors and facilitators need to raise awareness among participants of the benefits of social exchange for the foreign language learner.

Before moving on to the conclusions of this research, some limitations should be stated. The first one lies in the fact that, despite the massive registration numbers (1177), the sample size for the research is considerably smaller, with 618 participants completing the initial questionnaire and 120 the final one. That does not allow the generalisability of the findings, but it still enables us to contemplate how social learning can be fostered in these massive contexts. Furthermore, it might have been interesting to investigate the relationship between these findings and the completion rates, since it would provide a deeper insight into LMOOC participants' learning process. This was out of the scope of this paper, but it may be taken up in future research.

## CONCLUSION

This paper has looked into one of the types of online courses which have gained relevance in the pandemic, MOOCs. Attention has been paid to how social language learning can be fostered in an EFL MOOC by implementing extra functionalities in the virtual environments: the inclusion of social media (Facebook and Instagram) and the reinforcement of teacher presence in the forums, with dedicated facilitators. The use of social media was quite low, but participants reported pleasant learning experiences and were surprised by the novelty, usefulness and effectiveness of these social media to enhance their EFL learning. In terms of shortcomings, there is still a resistance to considering social media as educational tools, and it cannot be said that they have contributed to the creation of a learning community, because of the low interaction rates.

Forums were already known to online learners, but that did not result in a higher interaction rate; usage followed the pattern shown by Martín-Monje et al. (2017) in other LMOOCs, with low participation throughout the course. However, participants admitted that the reinforced facilitation allowed them to have a more enjoyable learning experience, and that is a significant achievement since this is one of the recurrent criticisms made of LMOOCs: many students consider that traditional face-to-face EFL classes are more enjoyable because they can have direct contact with their teachers and peers. So, the fact that students reported their satisfaction with the forum facilitation and acknowledged them as useful assets in their online learning is a relevant step forward that deserves to be consolidated.

MOOC platforms, as they are, may not be the most ideal learning environment for social language learning (see for instance Schulze & Scholz, 2018), since technological advances still have not managed

to effectively transform these online courses into learning communities in which interaction in the target language truly thrives. There happens to be an interesting paradox as well: students yearn for more teacher-learner and learner-learner interaction; yet, when they are given the opportunity to foster their social language learning -with enhanced forums and social media integrated into the online course- they fail to make the most of the opportunities provided. This is consistent with other researchers' findings, such as Ding and Shen (2020), who also confirm the low rate of forum participation in LMOOCs.

Nevertheless, evidence shows that steps are being taken in the right direction, reinforcing these functionalities which enhance social learning in online contexts and encouraging students to become more active. This paper shows that interaction in LMOOCs continues to be low, but, while students seem to use forums out of habit (see their intention of usage in the initial questionnaires), there is some promising evidence related to social networks. There has been more actual use of the social media than initially expected, and participants acknowledge the potential of these tools to create learning communities in these courses, since social media enable interactivity and provide multimodal, authentic learning resources in foreign languages. In fact, Chong et al.'s recent publication (2022) reviewing design features of LMOOCs rightly stresses multimodality and interactivity as features that should be included in LMOOCs. Thus, instructors and researchers should persevere in this path, incorporating social media to foster their social learning and to promote more personalised interaction among students in these online contexts.

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## KEY TERMS AND DEFINITIONS

**cMOOC (Connectivist Massive Open Online Courses):** These courses do not have a centralised core of content on a single platform; the content is distributed on different online locations which can be accessed through a network of connections.

**Design-Based Research:** This type of research is situated in a real educational context, focuses on the design and testing of a significant intervention, makes use of mixed methods, involves a collaborative partnership between researchers and practitioners and has a practical impact on practice.

**Discussion Forum:** It is a digital space in which participants can leave messages and exchange ideas and opinions related to a certain topic.

**LMOOC (Language Massive Open Online Courses):** They are dedicated online courses for second and foreign languages which are offered by higher education institutions for a limited period of time. They are characterised by unrestricted access and potentially unlimited participation.

**MOOC (Massive Open Online Courses):** Courses designed for a large number of participants, accessible by anyone with an Internet connection and offering a full learning experience without access prerequisites.

**Social Learning:** According to Vygotsky (1978) interaction with others plays a fundamental role in the development of cognition i.e., the learning process is a social activity.

**Social Media:** This term is used to describe different websites and digital applications which focus on communication, interaction, content-sharing and collaboration. Some examples are Twitter, Facebook or Instagram.

**xMOOC (Extended Massive Open Online Courses):** These courses run on a single platform and are more similar in structure to traditional online courses.

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## APPENDIX

### Questions Included in The Open-Ended Questionnaire

- Comment on your perception about social media and whether you find differences between its private and educational use
- What differences do you perceive between the use of forums and social networks for communication in a massive course like this?
- The educational use of social media usually involves the creation of learning communities, fostering interaction and collaboration among peers, and sharing resources. Do you think any of these aspects have encouraged in this course? Why?

### IF YOU HAVE USED SOCIAL MEDIA DURING THE COURSE, PLEASE ANSWER THESE QUESTIONS

- What did you think about the usefulness of Facebook/Instagram for learning English?
- Has your opinion changed after the course? Why?
- Do you think that social media can encourage the practise of the English language? How?

### IF YOU HAVE NOT USED SOCIAL MEDIA DURING THE COURSE, PLEASE ANSWER THESE QUESTIONS

- Why have you not used social media during the course?
- What kind of publications would have caught your attention?

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## **4.3. Publication III:** Díez-Arcón, P. (2021). Perfiles del participante en LMOOC: análisis bibliográfico y estudio de caso, Bellaterra Journal of Teaching & Learning Language & Literature, 14(4), e979. https://doi.org/10.5565/rev/jtl3.979

This piece of research explores participants' profiles in LMOOCs by conducting a bibliographic review in search of these patterns in the published literature. This paper stems from a well-documented concern in LMOOCs about completion rates. This stems from a traditional view on course success, in which successful learning equates with course completion. The study of reported participants' behaviour on LMOOCs reveals that they are not fully committed with the courses in terms of tasks submission or interaction, but they are, nonetheless, active during the time they spend on them. These acknowledged behaviours may have an essential role in understanding participants' performance and activity on the courses. Consequently, it is suggested that design and success criteria should be guided by participants' needs, considering their mostly passive behaviour. This should permit to switch the focus and ensure that every learner achieves his/her own learning objectives regardless of course completion or other success indicators which are usually attached to traditional formats.

# Perfiles del participante en LMOOC: análisis bibliográfico y estudio de caso

*Participant profiles in LMOOCs: a literature review and case study*

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————— *&* —————

## Resumen

La enseñanza de lenguas a través de cursos masivos (LMOOC) tiene características distintivas del resto de propuestas formativas en línea. Los cursos que funcionan en la actualidad tienen criterios evaluativos más cercanos a métodos tradicionales que suponen la asociación de éxito con la compleción del curso, lo que desemboca en una preocupación por el propio formato masivo al no reflejar altos niveles de compleción. También ofrecen tareas evaluativas que no promueven la práctica real del idioma. Mediante el estudio de perfiles socio-económicos y de comportamiento en línea se comprueba que los participantes no se involucran en el curso, pero son activos durante el tiempo que permanecen en él. Los resultados implican que es necesaria la adquisición de un conocimiento más amplio del participante que muestre si consigue sus propósitos de aprendizaje y así permitir una posible disociación entre el binomio compleción-éxito. Por otra parte, se sugieren alternativas para un diseño del contenido que prime la práctica de la lengua meta.

**Palabras clave:** Aprendizaje de lenguas; MOOC; Perfiles de comportamiento; Perfiles demográficos; Éxito formativo

## Abstract

Language learning through massive open online courses (LMOOCs) have distinctive features from the rest of online formative proposals. The courses currently working have assessment criteria closer to traditional methodologies, where success is associated with course completion, which leads to a concern about the massive format itself, as high completion levels are not achieved. They also offer assessment tasks not promoting the real practice of the language. Throughout the study of socio-economic and online behavioral profiles it is noticed that participants are not engaged with the course, but they are active during the time they stay on it. The results imply that the acquisition of a broader knowledge about participants that reflects if they achieve their learning goals is needed and, so that, permit a possible dissociation between success and completion. Moreover, alternatives for a content design prioritizing the practice of the target language are suggested.

**Keywords:** Language learning; MOOC; Behaviour profiles; Demographic profiles; Formative success

## INTRODUCCIÓN

El siguiente estudio realiza un análisis bibliográfico sobre estudios de caso en MOOC (*Massive Open Online Course*) de lenguas extranjeras en lo que a perfiles de comportamiento y socioeconómicos se refiere. También se estudia el caso del LMOOC (*Language Massive Open Online Course*) "How to succeed in the English B1 level exam" (1ª edición) para observar los perfiles mencionados en este caso específico y poder contrastar los resultados con la tendencia general. Mediante la triangulación de datos cualitativos y cuantitativos se definen los perfiles, lo que permite responder a dudas ante los modelos pedagógicos actuales y la respuesta a estos por parte de los participantes. A través de los resultados se realizan propuestas concretas para afrontar los retos de acceso, diseño y participación en LMOOC.

## OBJETIVOS Y PREGUNTAS DE INVESTIGACIÓN (PI)

El objetivo general es trazar el perfil del participante LMOOC mediante una revisión de la literatura sobre los perfiles de sus participantes para comprender y afrontar las limitaciones asociadas a este formato. El segundo objetivo surge con el paso de la generalidad a lo concreto mediante el estudio del caso "How to succeed in the English B1 Level exam" (1ª edición). Las preguntas de investigación derivadas son: PI1) ¿Qué características socio-económicas definen de manera mayoritaria al participante LMOOC?; PI2) ¿Cuál es el perfil de aprendiz dominante de los LMOOC teniendo en cuenta patrones de comportamiento?; PI3) ¿Cuáles son los perfiles predominantes en el caso del LMOOC "How to succeed in the English B1 Level Exam" teniendo en cuenta factores socio- económicos y de aprendizaje?, y PI4) ¿Hasta qué punto sigue el caso específico la tendencia generalizada en los MOOC de lenguas establecida en las preguntas de investigación 1 y 2?

## MARCO TEÓRICO

### Papel y principios básicos de los MOOC: democratización y acceso libre a la enseñanza y el conocimiento

Los MOOC han sido definidos como gratuitos, masivos y ubicuos (Cormier y Siemens, 2010) y han tomado un papel relevante como evolución natural del movimiento de aprendizaje abierto (*Open Learning Movement*) (Atenas, 2015). Teniendo en cuenta las características intrínsecas de los MOOC, se ha teorizado con la idea de que han de favorecer la democratización de la educación y, por lo tanto, al derecho universal a esta (Vázquez-Cano et al., 2016), pero existen diversos motivos por los cuales no se cumple este propósito. La publicidad que se le da a los

cursos masivos no está enfocada en la dirección de la población que más podría beneficiarse de ellos (Bárcena et al., 2014). También existen barreras para acceder a ellos como en el caso de los LMOOC, donde no queda claro cómo los aprendices que no tienen un nivel fluido del idioma pueden involucrarse con el contenido (Türkay et al., 2017). Este hecho supone "...un esfuerzo cognitivo mucho mayor que en otras disciplinas MOOC." (Martín-Monje, 2019, p. 39). Otro ejemplo es la necesidad de considerar cómo trabajar con un público tan masivo teniendo en cuenta sus diferentes experiencias y creencias educativas (Ross et al., 2014). También en referencia a lo masivo o multitudinario, Knox (2014) explica cómo la idea de percibir al participante en cursos masivos como una única entidad puede provocar que pase desapercibido el hecho de que la población que accede a estos cursos es altamente heterogénea.

## Pros y contras de la utilización de los MOOC en educación

Una de las preocupaciones que surgen sobre los MOOC es su alta tasa de abandono (Martín-Monje, 2019). Según Kizilcec et al. (2013) tan solo un 10% aproximadamente de los estudiantes que se inscriben logran completarlo. Un mayor conocimiento sobre las características del participante en el MOOC de idiomas mediante recursos tecnológicos que monitorizan su comportamiento en línea (Ozan et al., 2018), tiene que lograr el que por parte de la comunidad docente se deje de percibir la educación *online* como el reto de educar a completos desconocidos (Castrillo et al., 2018).

## MOOC para la enseñanza de lenguas extranjeras o LMOOC: necesidades pedagógicas específicas, características adaptativas y relación con el Enfoque Comunicativo

Los LMOOC contienen una combinación de elementos de los dos tipos de cursos masivos identificados atendiendo a la pedagogía utilizada en ellos: cMOOC y los xMOOC (Martín-Monje et al., 2018). Los primeros trabajan un enfoque conectivista donde se aprovechan las interacciones entre los diferentes participantes y donde juegan un papel esencial los medios sociales. Por otra parte, los xMOOC tienen un enfoque conductista basado principalmente en la interacción con el material y los contenidos (Conole, 2016)

Los LMOOC tienen la particularidad de no solo estar basados en el conocimiento sobre reglas o aspectos que se adquieren por transferencia pasiva, sino que al tener como fin el acto comunicativo, necesitan del desarrollo de todas las destrezas del idioma y de las habilidades comunicativas del lenguaje, por lo que las

plataformas tienen que adaptarse a estas necesidades y ofrecer materiales basados en las competencias lingüísticas que se puedan adaptar a las preferencias de los estudiantes (Martín-Monje et al., 2018). Según Kizilcec et al. (2013) las características adaptativas pasan por dar cobertura a participantes de diferentes bagajes, con diversas intenciones o motivaciones de cara al aprendizaje y que puedan encontrar limitaciones personales o técnicas durante la instrucción.

El Enfoque Comunicativo, respaldado en el campo de la enseñanza de idiomas de manera amplia y profunda (Richards y Rodgers, 2001), hace "hincapié en la importancia de comprender el uso del lenguaje en una situación determinada y con unos objetivos específicos" (Talaván, 2010, p. 212). En este ámbito, y según la misma autora, las tareas de evaluación tienen que contemplar todas las formas y escenarios comunicativos que existen, y conseguir que estas emulen contextos auténticos e impredecibles. Los entornos tecnológicos promueven nuevos escenarios de enseñanza-aprendizaje que ayudan de manera natural a la transición desde enfoques más tradicionales al Enfoque Comunicativo.

## Cambio de rol del alumno y del profesorado

El formato masivo posee una característica disruptiva en relación con otras formas de enseñanza *online*: el público masivo (Castrillo, 2014). Esta propiedad replantea el papel que han de adquirir los docentes donde la comunicación continua entre profesor-alumno no es posible. Las funciones del profesor que pasan a tener más peso son el diseño, la planificación del curso y sus contenidos, la facilitación, la curación, y la investigación. Se parte del hecho de que capturar y analizar digitalmente los datos tiene gran potencial para entender y mejorar la enseñanza y el aprendizaje y permite mejorar el entendimiento acerca de los procesos de enseñanza no solo de manera cualitativa, sino reforzando la perspectiva mediante la combinación con datos cuantitativos (Veletsianos et al., 2015). La triangulación de datos por diferentes métodos resulta la más propicia para comprender de manera más extensa los comportamientos del participante MOOC, y por qué participan de la manera que lo hacen.

## Perfil del participante MOOC: perfiles de aprendizaje y socioeconómicos

Varios autores han categorizado los rasgos del participante en cursos masivos. Kizilcec et al. (2013) realizan una clasificación relacionada con la involucración con el curso y el grado de participación que resulta en cuatro perfiles: (1) *completing*, refiriéndose a aquellos que intentan realizar todas las evaluaciones independientemente de su resultado, (2) *auditing*, interactúan de manera principal con las

lecciones en vídeo ofrecidas en el curso, pero no realizan evaluaciones, aunque suelen seguir el curso hasta su finalización, (3) *disengaging*, estudiantes que normalmente en el primer tercio del curso se desvinculan de él, aunque durante el tiempo que están son activos y (4) *sampling*, estudiantes que solo acceden casi de manera exclusiva a vídeos durante un tiempo limitado. Por otra parte, Anderson et al. (2014) clasifican a los participantes teniendo en cuenta para ello el acceso a los materiales y la entrega de tareas. Como resultado surgen: (1) *viewers*, los cuales de manera principal acceden al visionado de las lecciones, pero no entregan prácticamente ninguna actividad; (2) *solvers*, que sí entregan tareas pero por el contrario, no acceden prácticamente a la consulta de los materiales disponibles; (3) *all-rounders*, que son un término medio entre los dos anteriores, por lo que encuentran el balance entre consulta y entregas; (4) *collectors*, los cuales descargan el material disponible, pero no acceden al visionado de este, ni completan prácticamente tareas y (5) *bystanders*, que únicamente se registran en los cursos sin implicarse en ninguna de las dinámicas ofrecidas por ellos.

La consideración de factores directamente relacionados con el contexto personal del aprendiz como rasgos sociales, económicos, y culturales ya han sido contemplados por diversos autores (Bárcena et al., 2014; Beaven et al., 2014; Chacón-Beltrán, 2014; Whitmer et al., 2017; Wolfenden et al., 2017; Yousef et al., 2014), que defienden este conocimiento adicional sobre el participante. La tendencia general de los MOOC indica que los participantes son de manera principal hombres de países desarrollados, de edad media, empleados, con estudios y cuya motivación principal para tomar los cursos es la promoción laboral (Christensen et al., 2013; Daniel et al., 2015).

## Herramientas y materiales usados en los LMOOC

En el diseño instruccional de los LMOOC se suelen incluir materiales como lecciones en vídeo, artículos relacionados con temas sujetos a estudio, y herramientas para la interacción social que permiten al estudiante trabajar competencias lingüísticas de producción y recepción sin las restricciones de la educación tradicional (Sokolik, 2014). La interacción toma forma asíncrona para facilitar la viabilidad debido a la gran escala en la que se posicionan los cursos masivos a nivel de participación. Estos materiales y herramientas son de ayuda para el participante de MOOC de lenguas, ya que dan pie a la práctica de las diferentes competencias del lenguaje (Beaven et al., 2014).

De acuerdo con Glance et al. (2013), los LMOOC contienen elementos comunes entre sí: vídeos explicativos, corrección automática y entre compañeros,

cuestionarios de retroalimentación, y herramientas para la comunicación y el trabajo colaborativo como los foros, blogs y wikis (Castrillo, 2014). El contenido audio visual al igual que el escrito puede estar clasificado por contenido para que el usuario pueda ajustarse, dentro del material ofrecido, a sus preferencias (Gafaro, 2020).

## Metodología

El estudio ha seguido principios de investigación cualitativos. Primero se ha realizado un análisis bibliográfico donde el instrumento cualitativo es el análisis documental. Después se ha analizado el caso específico del LMOOC "How to succeed in the English B1 Level Exam" (1ª edición). En este caso, la técnica cualitativa ha sido el cuestionario donde se recoge la satisfacción del participante. Los datos cuantitativos se han recogido a través de la grabación de la actividad de los participantes en la plataforma y un cuestionario que cubre aspectos demográficos, entre otros. La recopilación de muestras para el análisis bibliográfico se ha realizado en dos fases: revisión de monografías sobre LMOOC, y revisión de publicaciones periódicas en revistas científicas. Para ello, primero se realizó un barrido general a través de la herramienta de búsqueda "Google Académico", acotando la búsqueda con los términos: MOOC(s), *"language" (s)*, *"case study"*, y "estudio de caso". En segundo lugar, se accedió a la herramienta de búsqueda proporcionada por la Biblioteca UNED, donde se realizó: (1) búsqueda simple: *language(s)* MOOC, y (2) búsqueda booleana: *"language(s)"* MOOC(s) AND *"case study."* Por último, se accedió a la búsqueda básica y booleana en las bases de datos ERIC y WOS (*Web of Science*) siguiendo el mismo patrón.

Se han obtenido 17 estudios de caso que hacen mención específica a perfiles de comportamiento, perfiles socioeconómicos, y/o ambos. Los autores de dichos estudios son: Agonács et al. (2019); Bàrkàny y Melchor-Couto (2017); Beaven et al. (2014); Chacón-Beltrán (2014, 2017); Damevska (2015); Fuchs (2019); Gafaro (2020); Lee et al. (2018); Martín-Monje et al. (2014, 2018); Ozan et al. (2018); Pérez (2019); Rubio (2014); Santos et al. (2014); Sedano (2017); Ventura y Martín-Monje (2016) y Zancanaro y Domingues (2018). Se detectó que la mayoría de los autores se centran en perfilar a los participantes en relación con su grado de involucración con el curso y el grado de participación que deriva en tasas de compleción. También se ha tenido en cuenta el uso de materiales y compleción de tareas evaluativas en las descripciones.

Figura 1. Diagrama del proceso de recopilación de datos bibliográficos



Para el análisis del estudio del caso específico "How to succeed in the English B1 Level Exam", se ha tenido acceso a los datos de la primera edición del LMOOC gracias a la cesión de estos por parte del proyecto ECO[1] en el cual se desarrolla. Mediante el acceso a las respuestas de los cuestionarios y la monitorización del comportamiento en línea, se puede realizar un análisis de las rutas de aprendizaje que toman los participantes para así poder categorizarlos según las denominaciones de Kizilcec et al. (2013) y Anderson et al. (2014).

## Descripción y análisis de datos

### PI1: Características socioeconómicas del participante en LMOOC

Mediante el análisis bibliográfico se observa que los LMOOC son cursados en su mayoría por mujeres adultas jóvenes, empleadas, con estudios universitarios y provenientes de países desarrollados. En el Anexo I se reflejan los porcentajes más altos de cada rasgo encontrado en la literatura revisada.

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[1] Proyecto ECO (E-Learning, Communication, and Open-data), [grant number 622127]: https://cordis.europa.eu/project/id/621127/es

## PI2: Perfiles relacionados con patrones de comportamiento del participante en LMOOC

En respuesta a la PI2, donde se pretende determinar el perfil dominante en LMOOC en cuanto a patrones de comportamiento, se observa en la literatura (véase Anexo I) que los participantes no se involucran con el curso, lo que se traduce en bajas tasas de compleción y también abandono del curso de forma progresiva. Los estudiantes generalmente no entregan tareas evaluativas, aunque en el tiempo que permanecen en el curso son participantes activos que acceden a las herramientas de comunicación y al visionado de materiales. El perfil dominante, por lo tanto, es el *viewer* según Anderson et al. (2014). Se distingue otro perfil ligeramente usual: *all-rounders,* según los mismos autores.

## Perfiles socioeconómicos y de comportamiento dominante en el caso especifico

La información facilitada por los participantes en el curso específico permite conocer su edad, sexo, nacionalidad, nivel de estudios y situación laboral (véase la tabla 1). Se define el perfil más relevante por el conjunto de características que han alcanzado un porcentaje más alto, resultando en: mujeres de mediana edad empleadas, con estudios universitarios, y provenientes de países desarrollados.

Tabla 1. Perfil demográfico

| Perfil demográfico predominante de los participantes | | | | |
| --- | --- | --- | --- | --- |
| Nacionalidad | Género | Edad | Nivel de estudios | Situación laboral |
| Española (91,59%) | Femenino | 37,6 (media) | Universitarios (59,14%) | Empleados a tiempo completo (43,48%) |

En cuanto a los perfiles de comportamiento, los descriptores utilizados para definirlos fueron: los recursos de aprendizaje utilizados por los participantes, la interacción y participación en línea y el progreso en el curso. La información sobre el comportamiento en línea fue procesada como parte de una investigación en el seno del Proyecto ECO con el programa computacional para el análisis estadístico SPSS.

El número de materiales o recursos disponibles es de 16 lecciones en vídeo, 12 documentos descargables y 2 textos en línea, siendo las lecciones en vídeo las más utilizadas, tal y como se puede observar en la tabla 2 donde se muestra la media de uso de los participantes. El número de entradas en los foros indica una participación baja y decreciente según avanza el curso (véase la tabla 3). La

participación en la red social Facebook es de igual forma modesta, tan solo un 14% de los estudiantes (747) que comienzan el curso la utilizan como herramienta adicional de comunicación.

El acceso a los materiales junto con la entrega de tareas y participación determina los perfiles de comportamiento (véase Tabla 4). Por último, se define el progreso en el curso mediante la compleción de este. En la tabla 5 se pueden observar las diferencias entre el número de estudiantes registrados, los que realmente empiezan el curso y los que logran terminarlo, lo que implica haber completado y entregado el conjunto de las actividades propuestas en cada módulo.

Tabla 2. Datos estadísticos descriptivos sobre la involucración con los objetos de aprendizaje mediante analíticas del aprendizaje (Proyecto ECO)

| Involucración con los objetos de aprendizaje: datos descriptivos | | | |
|---|---|---|---|
| | Acceso a artículos | Acceso a vídeos | Acceso a libros |
| N | 2600 | 4436 | 3087 |
| Media | 5.74 | **12.68** | 5.51 |
| Mediana | 3.00 | 7.00 | 4.00 |
| Moda | 1 | 2 | 1 |
| Desviación estándar | 7.558 | 16.792 | 5.519 |
| Asimetría | 3.371 | 6.918 | 2.533 |

Tabla 3. Indicadores de participación en los foros

| Participación en los foros | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Denominación | Guías | General | Mód. 1 | Mód. 2 | Mód. 3 | Mód. 4 | Mód. 5 | Mód. 6 |
| Entradas | 250 | 54 | 505 | 100 | 87 | 80 | 44 | 41 |

Tabla 4. Determinación de perfiles de comportamiento (Proyecto ECO)

| Estilo de involucración (Anderson et al., 2014) | Descripción | Frecuencia |
|---|---|---|
| "Viewers" | Acceden a objetos de aprendizaje, pero no entregan tareas | 1614 |
| "All-rounders" | Acceso a mínimo 2 objetos de aprendizaje; mínimo una tarea enviada y mínimo un comentario en el foro | 1236 |
| "Solvers" | Escaso acceso a objetos de aprendizaje y rara interacción | 237 |
| "Bystanders" | Visualización de 1 vídeo sin entrega de tareas o participación en los foros | 211 |
| "Collectors" | Descarga materiales sin interacciones en línea | 49 |

Tabla 5. Participación durante el curso (Proyecto ECO)

| Participación de los estudiantes | | |
|---|---|---|
| Registrados | Empiezan el curso | Completan el curso |
| 8208 | 5359 (65%) | 644 (12%) |

El bajo porcentaje de participantes que logran completar el curso pueden ser definidos como *solvers* según la taxonomía de Anderson et al. (2014). Su relación con los materiales es escasa, apenas acceden a ellos, pero sin embargo entregan una cantidad de tareas que les permite completar la formación.

El comportamiento de los participantes en relación con las herramientas de comunicación no es relevante y decrece de manera progresiva según avanza el curso. Este hecho, complementado con la poca cantidad de alumnos que lo finaliza, permite clasificar a los participantes según la taxonomía de Kizilcec et al. (2013) como *disengaging* o los que abandonan durante las fases iniciales. Tomando en cuenta esa misma parte de la población que no completa el curso (88%) y su relación con los materiales y la entrega de tareas, se puede deducir que la mayoría de los participantes pueden ser definidos como *viewers* según Anderson et al. (2014). Acceden de manera habitual al visionado de materiales teniendo preferenica por las lecciones en vídeo, pero no alcanzan a entregar ninguna tarea evaluativa. Siguiendo con la misma taxonomía, los datos revelan que después de los *viewers* el comportamiento más habitual es el que define a los *all-rounders*.

La triangulación de datos cualitativos y cuantitativos (véase la tabla 6) provenientes del control sobre el acceso al curso, las analíticas del aprendizaje, y los cuestionarios, permiten validar los resultados. En primer lugar, los cuestionarios finales revelan una valoración positiva de los objetos de aprendizaje: artículos, libros y audio lecturas (33,2%); superior a las tareas de evaluación colaborativas o en forma de quiz (29,1%), teniendo en cuenta las valoraciones "muy buena" y "buena" mostradas en las figuras 2 y 3.

Tabla 6. Triangulación de datos caso específico: perfil predominante: "viewers"

| Cuestionario | Analíticas del aprendizaje | Control de acceso al curso |
|---|---|---|
| Máxima valoración: objetos de aprendizaje (lecciones en vídeo) | Máximo tiempo de consulta: objetos de aprendizaje (lecciones en vídeo) | Máximo acceso a: objetos de aprendizaje (lecciones en vídeo) |

Figura 2. Porcentajes de la valoración de las tareas de evaluación en el cuestionario final
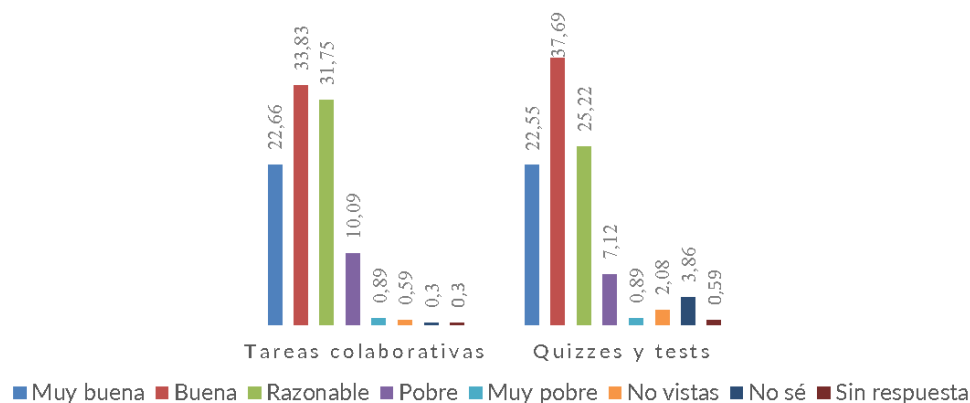


Figura 3. Porcentajes de la valoración de los objetos de aprendizaje en el cuestionario final
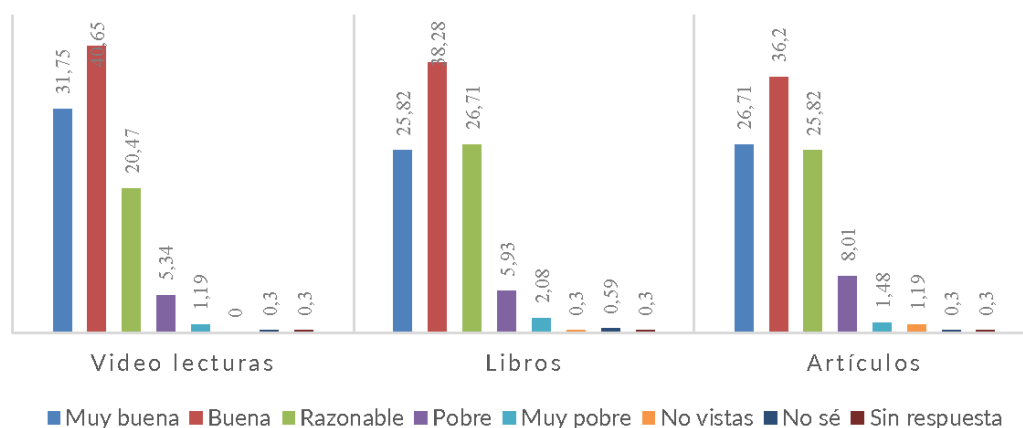


De igual forma, y según la estadística descriptiva, los participantes priorizan la consulta de recursos ante la entrega de tareas. Por otra parte, los datos muestran que teniendo en cuenta el tiempo que los participantes dedican al acceso a materiales didácticos, las lecciones en vídeo, categorizadas dentro de los objetos de aprendizaje, obtienen más tiempo de visualización, con tiempos superiores a los dedicados a la consulta y entrega de tareas, constatando el predominio del perfil *viewers*, según Anderson et al. (2014). Por último, el control sobre el acceso al curso muestra que los participantes que siguen activos eligen la visualización de las lecciones en vídeo como material didáctico de manera principal. Estos se involucran en mayor medida con este tipo de recursos durante el periodo que dura su formación, aunque los accesos decrecen a medida que avanza el curso. Los participantes que continúan hasta la compleción tienen obligación de entregar tareas con este fin. Con este dato se pasa a confirmar la asociación entre perfiles: *all-rounders – completers*, siendo los primeros los que encuentran balance entre consulta de materiales y entrega de

tareas, lo que, de manera consecuente, les permite finalizar el curso tal y como está estructurado. El número de participantes que completan el curso es claramente minoritario, por lo que se confirma el perfil *viewers* gracias al control de acceso a las diferentes secciones del curso.

Las características socioeconómicas que definen a los participantes en el estudio bibliográfico y el estudio de caso son exactamente idénticas (véase la Tabla 1 y el Anexo I), obteniendo los porcentajes más altos en los mismos rasgos por lo que se responde a la PI4 confirmando la similitud de perfiles en el caso específico con la tendencia general.

En cuanto a los perfiles de comportamiento se revelan las similitudes entre el estudio de caso y la tendencia general en LMOOC. Se ha establecido que la combinación más recurrente dentro de la visión panorámica es la de *viewers-disengaging*, deduciendo una relación causal entre el abandono y la no entrega de tareas evaluativas. En el caso específico sucede lo mismo, la mayoría de las participantes coinciden con la descripción de la definición de Anderson et al., (2014): *viewers*, En este caso se deduce de igual manera que los *viewers* abandonan el curso de manera progresiva con mayor incidencia en los módulos finales, obteniendo la denominación *disengaging* que hace referencia a este hecho. De la misma forma, el segundo perfil más recurrente en ambos casos es el de *all-rounders*, poniendo de relieve que los estudiantes de MOOC de lenguas no tienen especial interés en completar el curso. En cuanto a la compleción del curso, relacionada con la entrega de tareas evaluativas, se deduce que no es una práctica habitual en ninguno de los casos.

## DISCUSIÓN Y CONCLUSIONES

Existe una similitud en perfiles socioeconómicos de los participantes LMOOC con los MOOC en el resto de disciplinas, a excepción del género, que corroboran las barreras existentes para que este formato sea accesible a una extensión de la población más amplia y heterogénea. El matiz del género se asocia a la educación social y a una falta de referentes femeninos en estudios técnicos (Sáinz, 2017) lo que ha supuesto que la mujer se decante por el estudio de humanidades y ciencias sociales. También a una necesidad de comunicación asociada al género femenino (Pimentel, 2014) por la que el estudio de lenguas extranjeras les resulta más atractivo.

El hecho de que los LMOOC tengan características metodológicas distintivas no supone ningún cambio significativo en el patrón de perfiles explorados. Este hecho puede tener relación con la publicidad que se les da a los cursos masivos, no

estando enfocada en los colectivos que más podrían beneficiarse de esta estructura (Bárcena et al., 2014). Los participantes son estudiantes que no dependen únicamente de esta modalidad instruccional para formarse, dejando fuera a colectivos menos favorecidos. Conscientes de la situación, diversos proyectos proponen los LMOOC como opción de integración para colectivos en riesgo de exclusión, haciendo que las plataformas se adapten a un público multicultural y multilingüe (Vázquez-Cano et al., 2016). También influye el uso del idioma inglés como "lingua franca", lo que supone un dilema en los LMOOC dedicados a la propia enseñanza del inglés siendo el objetivo y el medio a la misma vez (Martín-Monje, 2019).

El hecho de categorizar al participante como una entidad única (Knox, 2014) propicia la rigidez en estructuras didácticas, no dando pie a una adaptación más personalizada. Este hecho puede ser solventado con el uso de técnicas del *Learning Analytics*, que permitan rastrear preferencias y adecuarlas a las necesidades específicas de cada participante, teniendo la posibilidad de intervención para la propuesta de nuevas rutas antes de un posible abandono por no encontrar un camino adecuado a las necesidades particulares del usuario.

Es llamativo cómo las herramientas de comunicación no logran suscitar interés en una parte importante de los usuarios. Estas son esenciales en el aprendizaje de lenguas, ya que permiten desarrollar la competencia comunicativa e implícitamente promueven la práctica de competencias lingüísticas (Beaven et al., 2014; Sokolik, 2014). Una propuesta ante este hecho es dar peso a tareas relacionadas con la interacción entre los participantes que fomenten actos comunicativos, y sean más significativas para aprendices de lenguas extranjeras, en detrimento de tareas evaluativas tradicionales como test autocorrectivos y similares.

La apertura hacia caminos de aprendizaje cada vez más personalizados y participativos permite el replanteamiento de la definición de éxito en los LMOOC y MOOC en general, que históricamente ha sido relacionado con la compleción o el abandono del curso. La combinación de perfiles hallada más habitual en los participantes de LMOOC, de manera general y en el caso específico, es la de *disengaging-viewers*. Esto puede significar que los estudiantes LMOOC y MOOC en general no tienen un interés o motivación especial en completar la formación cumpliendo los requisitos definidos para este fin, que va ligado a la entrega de tareas evaluativas y a la participación. Godwin-Jones (2014) y Beaven et al., (2014) entienden que este comportamiento es comprensible por la naturaleza gratuita y abierta de los cursos y la visión que tienen los participantes de tomar la experiencia MOOC como la asistencia a una conferencia donde no es necesaria la asistencia

continua, y no como un curso al uso. Sin embargo, los participantes con este perfil de comportamiento son activos y seleccionan los materiales a consultar antes del cese de su actividad en el curso. Un amplio número de usuarios decide no realizar las tareas, aunque aprovechan el curso de otras maneras como con la descarga y visualización de materiales y acceso a determinados recursos desechando trabajar el resto por no ser de su interés particular. Puede entenderse que el tiempo que permanecen activos es provechoso para ellos y los motivos de abandono tengan que ver con el hecho de haber cumplido sus objetivos personales y no la totalidad de objetivos propuesta por el curso. Este comportamiento denota autonomía por parte del participante, ya que los recursos que se utilizan son los que consideran útiles para complementar su formación.

Por lo tanto, sería conveniente prestar atención a aspectos como la utilidad del contenido de manera individual independientemente de la compleción, y medir la satisfacción de los perfiles mayoritarios. Esto permitiría deducir si los cursos son provechosos para los perfiles predominantes y replantear el sentido del éxito asociado a la compleción mediante entrega de tareas. La elaboración de cuestionarios iniciales puede cubrir esa necesidad y dar voz a los usuarios con necesidades específicas de aprendizaje. Los cuestionarios han de dirigirse a la averiguación del interés individual en ciertos contenidos, y de las expectativas del participante, que son las que habrían de marcar su éxito o fracaso.

Las taxonomías que hasta ahora han dado nombre al tipo de perfil de estudiante LMOOC y relacionadas con el comportamiento del participante podrían ser complementadas con esta información adicional y específica sobre sus intenciones para con el curso. Las propuestas didácticas innovadoras, como son el caso que nos ocupa, no pueden medir el éxito de la experiencia con métodos tradicionales, por lo que es interesante buscar alternativas que reflejen las distintas realidades que se dan en los LMOOC.

## LIMITACIONES DEL ESTUDIO Y FUTURAS VÍAS DE INVESTIGACIÓN

Los resultados presentados en la primera parte del estudio están recogidos mediante una búsqueda exhaustiva de la literatura existente en el campo del estudio de lenguas a través del formato MOOC. Aunque la tendencia general es clara tras los resultados provenientes de las muestras recopiladas, conviene remarcar que la generalización que se presume en el estudio no representa a la totalidad de LMOOC existentes. Por otra parte, el estudio ha clasificado a los participantes según patrones de comportamiento. La diversidad en la presentación de estos datos en la

literatura consultada ha obligado a buscar el mayor número de similitudes en los datos obtenidos con las taxonomías de Kizilcec et al. (2013) y Anderson et al., (2014) que sirven de complemento para explicar los datos hallados. Esto supone que los perfiles presentados en el estudio no representen de manera completa los rasgos definitorios de las clasificaciones de los autores. Por último, remarcar que tanto en los casos estudiados en la revisión bibliográfica y en el caso específico "How to succeed in the English B1 Level Exam", los datos socioeconómicos no representan al total de los participantes.

Tras el estudio de los datos presentados, se abre un gran abanico de oportunidades a aplicar en la práctica. Estas abarcan cuestiones desde el propio diseño relacionado con: la metodología, contenidos, seguimiento del participante y aprovechamiento; pasando por la manera en que se ofrecen los LMOOC y el público objetivado, hasta la aplicación de propuestas que logren romper las barreras existentes. Estas posibilidades reflejan una realidad en la que el formato LMOOC es susceptible y tiene el potencial de integrar elementos que enfoquen la enseñanza en un público más amplio, autónomo e interesado en la posibilidad de acceder a formación a lo largo de la vida siguiendo sus propios objetivos de aprendizaje. Lo cierto es que la propia naturaleza abierta, flexible y modular de los LMOOC permite aprovechar al máximo la experimentación basada en combinaciones entre los elementos que conforman un curso para lograr encontrar modelos adaptativos que puedan dar cobertura formativa a más usuarios. Estos modelos tienen que respetar las necesidades de los estudiantes de lengua extranjera donde la práctica real del idioma a estudio por medio de las interacciones se sabe primordial.

## AGRADECIMIENTOS

16                                                                                                   Díez-Arcón, P.

## ANEXO I: DESGLOSE DE DATOS DE LAS PUBLICACIONES CONSULTADAS

| Referencia (A-Z) | Título LMOOC | Mención a perfiles de comportamiento | Mención a perfiles socioeconómicos |
|---|---|---|---|
| Agonács, N., y Matos, J. F. (2019) | "AP Italian Language and Culture" | -*Disengaging*: 11 de 740 participantes terminan el curso.<br>-*Viewers*: los participantes acceden a materiales. | -Muestra no representativa: únicamente 11 participantes aportan estos datos. |
| Bàrkànyi, Z., y Melchor-Couto, S. (2017) | "Spanish for beginners" | -*Solvers / All- rounders*: Se indica que el 50% realiza las tareas, sin hacer mención directa al acceso a materiales. | No aporta datos |
| Beaven, T., Codreanu, T. y Creuzé, A. (2014) | "Travailler en français" | -*Disengaging*<br>-*Viewers*: la mayoría accede a las lecciones en video, pero un bajo porcentaje presenta tareas evaluativas. | -**Situación laboral**: empleados (46,3%)<br>-**Origen**: España (36%), seguido de Francia e Italia |
| Chacón-Beltrán, R. (2017) | "Beginners' English Course for Spanish Speakers" | -*Viewers*: solo el 24% de los participantes activos en el curso entregan tareas. | -**Edad**: 25-45 (63,05%)<br>-**Sexo**: mujer (68%)<br>-**Estudios**: universitarios (55%)<br>-**Situación laboral**: empleados (38,17%)<br>-**Origen**: España (80.09%) |
| Chacón-Beltrán, R. (2014) | "Empieza con el inglés/English Beginners" | -*Completing*: el 55% entrega las tareas evaluativas.<br>-*All-rounders*: el 50% entrega tareas y accede a los materiales. | -**Edad**: 30-39 (32%)<br>-**Sexo**: mujer (68%)<br>-**Estudios**: universitarios (55%)<br>-**Origen**: España (97%) |
| Damevska, L. (2015). | "Tandem MOOC" | -*Disengaging* | -**Edad**: 26-35 (32,1%)<br>-**Sexo**: mujer (62%)<br>-**Origen**: España (43,9) |
| Fuchs, C. (2019) | "Understanding Language: Learning and Teaching" | -*Auditing*<br>-*All-rounders*: Interactúan con los materiales y terminan el curso, aunque entregan pocas tareas evaluativas. | No aporta datos |
| Gafaro, B. C. (2020) | "English for Academic Purposes" | -*Completing*: MOOC integrado en educación formal, el total de los participantes lo completan. | -**Estudios**: universitarios |
| Lee, S., Kadel, R. S., Madden, A. y Gazi, Y. (2018) | "Speak English Professionally: In Person, Online y On the Phone" | -*Disengaging*: solo el 3,9% de los participantes termina el curso.<br>-*Viewers*: presentan pocas evaluaciones y acceden al material audiovisual. | -**Edad (media)**: 33<br>-**Sexo**: mujer (52,7%)<br>-**Estudios**: universitarios (67%)<br>-**Situación laboral**: empleados (45,2%) |
| Martín-Monje, E., Bárcena, E., y Read,T. (2014). | 1ª edición: "Inglés profesional" | -*Disengaging*<br>-*Viewers*: La participación decrece según avanza el curso. | -**Edad**: 25-35 (46,11%)<br>-**Estudios**: universitarios (55,33%)<br>-**Origen**: España (60-80%) |
| Martín-Monje, E., Castrillo, M. D. y Mañana-Rodríguez, J. (2018). | "How to succeed in the B1-level exam" | -*Viewers*: mención específica a esta denominación del perfil. | No aporta datos |

| | | | |
|---|---|---|---|
| Ozan, O., Ozarslan, Y. y Yıldız, H. (2018) | **"Türkçe Öğreniyorum"** *(Learn Turkish)* | **No aporta datos** | **-Edad:** 18-24 (40,87%)<br>**-Sexo:** hombre (65,8%)<br>**-Estudios:** universitarios (44%)<br>**-Situación laboral:** empleados (44%)<br>**-Origen:** Turquía (66,49%) |
| Pérez, J. J. (2019) | 3ª edición: **"Inglés profesional/ Professional English"** | *-Desengaging:* Se accede a los materiales en los módulos iniciales, luego decrece el acceso a estos. | **No aporta datos** |
| Rubio, F. (2014). | **"Improving your Spanish pronunciation"** | **No aporta datos** | **-Estudios:** universitarios (45% aproximadamente) |
| Santos, J. L., Klerkx, J., Duval, E., Gago, D., y Rodríguez, L. (2014) | **"Fundamentals of German for Spanish speakers"** | *-Disengaging:* el 50% de los participantes deja el curso tras los dos primeros módulos, con posterior aumento progresivo en la tasa de abandono. | **No aporta datos** |
| Sedano, B. (2017). | **"Spanish for travelling"** | *-Disengaging:* del 70% de los participantes que empieza el curso solo un 17% lo completa con la entrega de evaluaciones. No hace mención a materiales pero por el contexto se puede deducir que el 59% interactúa con los materiales aunque no presenten evaluación.<br>*-Viewers* | **-Edad:** 20-40 (52,8%)<br>**-Sexo:** mujer (77,8%)<br>**-Estudios:** universitarios (73%)<br>**-Situación laboral:** empleados (75,6%)<br>**-Origen:** Reino Unido y Estados Unidos mayoritariamente. |
| Ventura, P., y Martín-Monje, E. (2016). | 2ª edición: **"Professional English"** | *-Completing:* 58% de los participantes completa el curso | **No aporta datos** |
| Zancanaro, A. y Domingues, M. J. de Souza (2018) | **"Portuguese course for foreigns"** | *-Disengaging:* el 22% de los participantes completa el curso | **-Sexo:** mujer (54,8%)<br>**-Estudios:** universitarios (46,76%)<br>**-Origen:** España (29,63%) |

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## 4.4. Publication IV: Díez-Arcón, P. (2023). The significance of instructional design: analysis of content in Language MOOC forums, *The JALT CALL Journal, 19*(1), 1-25. https://doi.org/10.29140/jaltcall.v19n1.773

The last publication included in this collection put forward a suitable methodological design to monitor the quality of LMOOC forums based on the analysis of the content in these communication spaces. Additionally, this work analysed whether the pragmatic nature of these contributions was coherent with the purpose of the forum threads in the course. These threads were structured to enhance participants' self-determination skills, which support learning processes in LMOOCs; and to ensure accessibility and ease of navigation to meet every participant's needs and, consequently, adopting an inclusive approach. The results highlighted the importance of the quality assurance in the design of LMOOCs as a contributing element to conform common analytical frameworks to uniformly advance in the field. Moreover, an efficient forum design for LMOOC is put forward to be considered in future research due to its simplicity and concreteness.
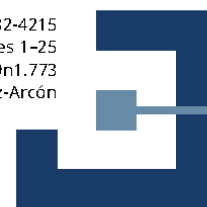
# The significance of instructional design: analysis of content in Language MOOC forums

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Language MOOC research has evolved over the last three years to a more mature stage in which researchers have gained a deeper comprehension of the theories that enable effective language learning in this format. The application of these theoretical advances should be reflected in the instructional design of the courses. This study is based on this premise and monitors the quality of the design of communication and discussion forums considering the different levels of engagement in a LMOOC, the accessibility, ease of navigation, assessment of learning processes, and support to participants in in the development of self-determination strategies. This is done by analysing the content of the forums and applying two instruments created upon the research needs. The results show the relevance of the instructional design of the forums in LMOOCs, and subsequently a suitable analytical framework is put forward, which can be easily replicated due to its simplicity and concreteness. This is the main contribution of this paper, since the elaboration of common analytical frameworks in LMOOC research strengthens the field and reinforces the significance of instructional design in successful language learning in these online courses.

**Keywords:** Language MOOC; analysis of content; forums; analytical framework

## Introduction

Discussion forums are essential resources in Language Massive Open Online Courses (LMOOCs, henceforth) since they permit the practice of the target language and have the capacity to create learning communities as part of social learning theories postulates, which are closely linked to how learning occurs in LMOOCs (Sallam et al., 2020). LMOOC structures do not particularly favour the necessary interaction to develop language skills, so resources available need to be optimised to the maximum extent to this end (Sokolik, 2014). Monitoring

**1**

of the quality of forums as an important resource of LMOOCs turns out to be necessary (Conole, 2013) because quality indicators reflect their positive use (Liu et al., 2016).

The monitoring of discussion forums in LMOOC has been approached by reviewing the design and organisation of interfaces as they determine how participants interact with information (Olivier, 2016), since it is widely accepted that knowledge building and information sharing mainly occur through language and discourse in digital contexts (Joksimovic et al., 2020). It is assumed, therefore, that efficient organisation and structured categories, subcategories and subject threads are conducive to more intuitive interfaces, to interaction, and language development (Castrillo, 2015; Zheng & Warschauer, 2015). Participation in these spaces is generally low (Liu et al., 2016; Martín-Monje et al., 2017; Onah et al., 2014), and this reality usually overshadows the fact that those participants who post messages actually interact intermittently or do not interact with other participants at all (Anderson et al., 2014; Liu et al., 2022; White & Le Cornu, 2011). It becomes necessary to propose inclusive designs and analyses assuming heterogeneity in the engagement with these spaces, since LMOOCs effectiveness cannot be fully observed without considering passive sup-populations (Poquet et al., 2020).

The connection with existing learning theories is another feature to be considered for the design and organisation of LMOOCs. In this sense, various authors (Agónacs et al., 2020; Beaven et al., 2014) have shown that self-determination may condition learning processes in LMOOCs. Self-determination in MOOC context refers to the development of concrete skills such as autonomy, self-reflection, consciousness about one's learning needs, and the development of digital and participatory skills for learning online (Agónacs et al., 2020). Self-determination and a learner-centered methodology rely on spontaneity and self-management to successfully perform the dynamics in LMOOCs. However, the low self-regulation capacity of LMOOC participants clearly needs to be improved (Agónacs et al., 2020). This limitation makes it necessary to subtly guide participants to train their self-determination skills from the design which will consequently enable them to cover linguistic content more efficiently.

This study has first analysed the language production reflected in the forums of a LMOOC to understand the nature of intentions and their purpose. This way, it was intended to reveal whether the forum structures were efficient in terms of the development of meta-learning strategies and ease to navigate. Secondly, it observed whether learning processes occurring are meaningful for participants. Therefore, the quality of learning and the instructional design were assessed by the utilization of two analyses frameworks based on the categorisation of the speech acts encountered. In this way, neither the volume of participation was considered as an indicator of quality, nor the fluctuations of activity that responded to specific participants' behaviours (Tang et al., 2018), but rather the significance of these interactions for both the active and passive participants.

The analyses in this study are considered dynamic processes (Schrire, 2006) that obey the objectives of the research. Analyses of the content were carried

**2**

out by the categorisation of speech acts in the forum contributions. Speech acts were identified and categorised to observe if they were coherent with the structured threads proposed aimed to contribute to develop participants' self-determination capacities, to make navigation easy and intuitive, and to reach a significative learning. To this end, the units of meaning (themes or ideas) of the forum postings were taken as a reference to cover the need to reflect different communicative intentions that the same intervention may contain. The first objective was to interpret the coherence between speech acts and the specific linguistic needs occurring in each thread. Observation was carried out from a naturalistic approach and classification criteria was established by the creation of a measurement instrument. The second objective was intended to identify the mental skills stimulated using forums. The instrument used, unlike the first one, was created out of a theoretical basis (de Wever et al., 2006). It identified speech acts in the corpus which were scaled to more abstract concepts following the hierarchical relationship developed by Díez-Arcón et al. (2021).

## State of the art & theoretical framework

### *Content analysis in discussion forums*

Forum content analysis is a technique commonly used to analyse asynchronous discussion group transcriptions (De Wever et al., 2006). According to Anderson et al. (2001) as cited in de Weber et al (2006), content analysis is "a research methodology that builds on procedures to make valid inferences from text." Research on content analysis evidence that this technique is applied by the use of different measuring instruments for different purposes. This lack of standardisation leads to significant variations in the level of detail provided and the labelling in the emerging categories generated. According to De Wever et al. (2016) the creation of new instruments is a common practice in this area, although the authors find three common features in the instruments used for content analysis in the literature; 1) they are based on a solid theoretical basis; 2) their quality is justified by indicators such as validity and reliability and 3) the selection of the units of analysis is justified. Also, the disparity of objectives pursued in each investigation complicates the replicability of methodologies, that, however, are normally based on three main axes, namely: the research objectives, the learning theories underlying the didactic use of forums, and the units of analysis selected. It is relevant to exemplify, therefore, how researchers have adapted methodologies and analysis tools according to their research objectives.

Related researched has looked at how learning occurs through the use of forums. Brinton et al. (2014) try to understand whether the functioning of the forums is in line with the postulates of social learning theory, and Palmer et al. (2008) examine whether the Community of Inquiry elements (social, cognitive, and teaching presence) concur in the educational experience. At the level of units of analysis, it is found that qualitative labelling of interventions mostly aims to differentiate between content-related publications and the ones which

**3**

are not (Brinton et al., 2014; Cui & Wise, 2015; Poquet et al., 2020; Son, 2003; Tang et al., 2020; Wise et al., 2017). Some of the labelling explicitly highlights the content-based nature of the categories, such as "course logistics," "course specific discussion," or "content related questions" (Brinton et al., 2014; Cui & Wise, 2015). Content related threads are considered as positive indicators of the use of forums and influence the learning process because they have identifiable linguistic patterns (Wise et al., 2017). This tendency is also noted in Tang et al. (2020) Son (2003), and Zhong & Norton (2018) who group interventions to understand their link with the subject matter.

Another avenue of related research is represented by the analysis of linguistic input in the forums. Arguello & Shaffer (2015) explored linguistic patterns in terms of speech acts or communicative intentions, and Moreno-Marcos et al., (2018) drew positive or negative emotions based on the lexicon used. The analyses of emotions have been motivated by the need to understand the experience of course participants (Moreno-Marcos et al., 2018), to find possible explanations for dropout rates (Wen et al., 2014), and to determine participant's profile based on the discourse produced (Poquet et al., 2020) Furthermore, Díez-Arcón et al. (2021) have analysed forum content to measure the effect of a dynamic figure in participation rates and the relevance of the interventions for the learning process. Finally, research has also considered the appropriateness of structures for organising discussions for a smooth and simplified navigation (Wise et al., 2017).

## *(L)MOOC forums and the quality of learning*

Forums have been defined as "long-lived places built around topic, goals, or communities where coherent threads deal with particular issues" (Dave et al., 2004. p. 232) and are the main tool for interaction to occur in MOOCs (Almatrafi & Johri, 2019; Arguello & Shaffer, 2015; Huang et al., 2014; Liu et al., 2016; Onah et al., 2014; Tang et al., 2020; Wise et al., 2017). According to Conole (2013) the essence of good learning is based on elements such as the promotion of reflection, dialogue and collaboration, and forums can fulfil this function. These spaces favour collaborative learning and knowledge construction, allow the formation of learning communities, promote motivation, reflection and commitment, and foster higher thinking skills (Brito, 2006; Faiz & Lin, 2016; Jose & Abidin, 2016; Olivier, 2016; Onah et al., 2014). Conole (2013) explains that technology offers many alternatives for these elements to come together, but that in the case of MOOCs it is necessary to monitor the quality of the courses at the design level, as this determines the participant's experience.

The configuration of discussion forums, how they are structured and divided into relevant threads, constitutes an important element in effective MOOC design. Onah et al. (2014) understand it as essential in the measurement of the quality of learning in MOOCs, since the pedagogy used in these courses is often based on peer-to-peer work. Collaborative learning is therefore expected to emerge in these tools, although there are barriers mainly associated with the high number of participants that hinder communication by making it difficult

to follow a discussion, find relevant information, or achieve effective interaction. This fact also hampers the detection of participants who need support from instructors (Arguello & Shaffer, 2015; Brinton et al., 2014; Fu et al., 2017; Onah et al., 2014). The lack of mechanisms formally defined to measure quality indicators to understand how participants interact provokes that the expectations raised about forums have not been fulfilled (Conole, 2013).

Sustainable and effective design must be able to avoid communication difficulties (Son, 2003). According to Liu et al. (2016) the importance of the design and organisation of interfaces determines in many cases how participants interact with the information, and Olivier (2016) emphasises the importance of reviewing the quality of discussion in forums, as this is a positive indicator of their use. In online environments, and consequently in MOOCs, knowledge construction happens through language and discourse, so it is necessary to understand what kind of discourse prevails in the production of the reflected language (Joksimovic et al., 2020). Understanding the nature of the intentions and purposes expressed in communicative acts is essential for interpreting their link to the learning process. It is consistent, then, to determine the quality of designs through discourse analysis in structures that have defined functionalities and respond to specific learning objectives.

## Impact of forums on meaningful (language) learning

Meaningful learning can be defined as the correct interpretation of knowledge schemata acquired in the initial and intermediate cognitive phases of the learning process, so performance becomes automatic, unconscious, and effortless (Shuell, 1990). Theories for language learning rely, primarily, on meaningful learning, which involves building cognitive structures by systematically and cognitively relating new input with their existing knowledge (Brown, 2000). Existing theoretical frameworks on distance learning and language learning (Ellis, 2005; Gorsky & Carspi, 2005) perceive communication as an essential element (see Table 1) in the learning process. Gorsky & Carspi (2005) propose a theoretical framework for "viewing elements of distance education instructional systems in terms of dialogue" (p. 137) in which five assumptions are underlined and directly related to the functions of forums. With a focus on foreign language acquisition, Ellis (2005) formulates ten general principles for instruction in language learning, five of which are perfectly applicable to the role of forums as contributors to the effectiveness of instruction and understood as a means of interaction, but also of language production and reception. The remaining principles, although not directly related to the forums, benefit from their existence.

**Table 1.** Distance learning and language learning principles related to communication and forums

| Gorsky & Carspi (2005) | Ellis (2005) |
|---|---|
| "Learning is an individual activity characterized by internal mental processes" | "Instruction needs to ensure that learners develop both a rich repertoire of formulaic expressions and a rule-based competence" |
| "Learning is mediated by intrapersonal dialogue" | "Successful instructed language learning requires extensive L2 input" |
| "Learning is facilitated by interpersonal dialogue" | "Successful instructed language learning also requires opportunities for output" |
| "Dialogue is enabled by structural and human resources" | "The opportunity to interact in the L2 is central to developing L2 proficiency" |
| "Dialogue and learning outcomes are correlated" | "In assessing learners' L2 proficiency it is important to examine free as well as controlled production" |

Educational forums are, therefore, potentially drivers to meaningful learning understood as the transition from basic to higher mental skills (Garrison, 1992), These spaces, therefore, need to show evidence of meaningful learning indicators (higher mental skills), but also of other that allow to see the evolution necessary for this to be achieved (basic mental skills). Knowledge building in the forums occur by participative, interactive, and cognitive processes (Saade & Huang, 2009), so these aspects related to with mental skills development need to be identified to determine if these communicative spaces fulfill the expected objectives Different authors have delved into the ways interaction and learning occurs in forums. Collison (2000) identified the forms of dialogue in relation to these actions, namely: social, argumentative, and pragmatic. Also, Rovai (2003) classified forum contributions, accordingly, resulting in the following categories: social-based interventions, raising new questions, explanation of ideas, problem identification, solutions proposal, and critical evaluation of the problems. Díez-Arcón et al. (2021) aimed to verify whether the students achieved meaningful learning considering the needed concurrence between the development of basic and higher order skills. They proposed a hierarchical analysis model where the textual indicators proposed by Rovai (2003) were the basis for scaling up to more abstract concepts, which made possible to link the indicators to, first, Collison's (2000) forms of dialogue, and finally to Garrison's (1992) mental skills development. This model is used in the present research and further developed in the methodological section.

Forums have been, consequently, associated with improved academic performance also due to their potential ability to increase motivation, dedication, and engagement which are reflected in lower dropout rates (Cheng et al., 2011; Koç, 2017; Liu et al., 2016b; Martín-Monje et al., 2017; Olivier, 2016; Yukselturk, 2010). Although there are few empirical studies that have investigated how forums are used in language learning (Zhong & Norton, 2018), their utilisation is widely assumed in the case of LMOOCs and they represent a robust communication system for language learning (Martín-Monje & Borthwick, 2021).

This is because the target language can be practised through the forums and they can correct errors in written expression voluntarily and spontaneously (Barcena et al., 2015). It is assumed that language learning is skill-based and requires the practice of functional receptive, productive and interactive skills (Bárcena & Martín-Monje, 2014).

In LMOOCs, forums take on a new dimension by enhancing the mastery of the target language and the confidence in using it (Faiz & Lin, 2016; Pinto-Llorente et al., 2016). Written communication and expression involves decoding and understanding a text and generating ideas to be organised and finally expressed (Duke & Pearson, 2009; Pinto-Llorente et al., 2016). Forums can improve the target language because they allow observation and the planning of interventions through the search for resources to elaborate more complex responses than those allowed by oral expression, and they can also reduce the anxiety associated with these actions (Meskill & Anthony, 2008; Ntourmas et al., 2021; Schrire, 2006; Zhong & Norton, 2018). Negative effects are related to inhibition of interaction due to learners' lack of confidence in their abilities (Faiz & Lin, 2016; Ntourmas et al., 2021), although self-efficacy training can remedy these situations by applying mechanisms to overcome these barriers (Bárkányi, 2021).

### Activity and interpretation of participant behaviour in (L)MOOC forums

Forum participation in (L)MOOCs is normally represented by a small group of active participants (Liu et al., 2016; Martín-Monje et al., 2017; Onah et al., 2014). Peer interaction is found to be scarce and superficial (Wise et al., 2017), which is not conducive to meaningful discussions (Almatrafi & Johri, 2019). According to Lui et al. (2016) the key is to understand the voluntary nature of forum participation assuming that a significant number of participants are not engaged by their use. Hence, attention also needs to be paid to participants who do not interact and those who participate intermittently (Anderson et al., 2014; Liu et al., 2022; White & Le Cornu, 2011). According to the latter authors the effectiveness of community development in MOOCs cannot be observed through the analysis of the entire forum population, as analyses need to include both those who are always present and those who have peripheral participation.

The neglect of non-active participants in research can be considered a gap which needs to be tackled through the consideration and conceptualisation of the sub-populations (Poquet et al., 2020), and the assumption of heterogeneous engagement with the activity in the forums. Research has mainly focused on active participants as contributors to the whole forum activity. These are referred to as "vocal" (Mazzolini & Maddison, 2003), "residents" (White & Le Cornu, 2011), "superposters" (Huang et al., 2014), "e-Leading students" (Barcena et al., 2015), or "key participants" (da Silva et al., 2019). Even these types of participants play an essential role in the creation of communities of inquiry by their participation and interaction (Garrison, 1992; Saade & Huang, 2009), they are by no means representative in the massive context. Therefore, greater

efforts need to be made towards the inclusion of participants with different levels of engagement in these spaces.

Evidence on forum sub-populations finds that more passive forum attitudes do not necessarily imply less engagement with the course (White & Le Cornu, 2011) and may be indicators of greater self-learning capacity. According to these authors, the passive participant chooses to visit a particular resource to satisfy his or her learning needs and leaves, while the more motivated active participant tries to connect or share with others. In forums, passive behaviour results in the viewing of messages, something that according to Chiu & Hew (2018) requires moderate mental actions and cognitive processes but can still meet the needs of the language learner, something their study verifies by finding a relationship between readings of comments and performance in the proposed activities. The learning expectations of MOOCs linked to self-learning processes make it necessary for users to have easy and fast access to the information reflected in the forums and retrieve information efficiently. It is reasonable that a good organisation of the threads in LMOOC forums benefits the entire population of the course, including the predominantly passive population who, without making a major effort, will be able to find information in line with what they expect from each thread.

## Objectives & research questions

The main objective of this research is to observe whether the pragmatic nature of the forum contributions is coherent with the structured threads aimed to contribute to develop participants' self-determination capacities and that every participant gets advantage of the forum content making navigation easy and intuitive. Additionally, this research aims to determine whether the proposed structure stimulates meaningful learning for participants in an LMOOC. Two research questions (RQs) are formulated based on these objectives:

**RQ1.** What effect does the predefined structure in this LMOOC forum have on promoting self-reflection and ease in accessing specific content?

**RQ2.** Can participants achieve a meaningful learning based on the predefined structure of the forums?

## Methodology

### Context

This study analyses the contributions (n = 287) of participants in the forums (11.4% of the those enrolled in the course) of the LMOOC "How to succeed in the English B1 Level Exam" (2021) held in UNED Abierta (https://iedra.uned.es/). The course contained six modules to be completed in six weeks. There was an introductory module, a final module and four modules devoted to language skills (see Figure 1). Each of the skill-based modules contained video-lessons,

reading material, and evaluative activities. Additionally, modules 3 and 4 introduced two external resources for the practice of writing (https://www.grubric.com/) and listening and speaking skills (https://eoral.uned.es/default.aspx) respectively.

How to succeed in the English B1 Level Exam (2021)

> Before you start

> 1. Introduction

> 2. Reading comprehension. How to prepare for it efficiently.

> 3. Writing. How to prepare for it efficiently.

> 4. Listening. How to prepare for it efficiently

> 5. Speaking. How to prepare for it efficiently.

> 6. Final reflections
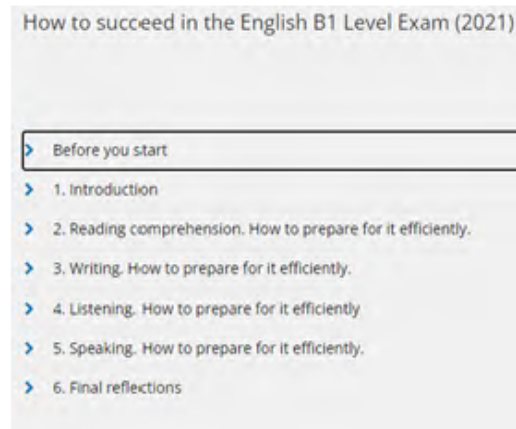
**Figure 1.** Distribution of the modules in the course

The thematic threads were organized based on the content of each module. Skill-based threads included sub-threads called "Share your learning experiences." These encourage participants to "share their preferred studying strategies, their success and pitfalls during the learning process" (Agonács et al., 2020. p. 1174), and they were intended to be a support for the development of participants' self-reflection strategies. The initial thread was social-oriented, and the final one encouraged participants to share their top tips when preparing for the English B1 Level Exam.

## Data collection and analysis

This section specifies the steps in the methodological procedure and illustrates how quantitative and qualitative elements were combined, though the study remained essentially qualitative in its general approach. The analyses carried out were based on the research questions, for which the specific methodology is described below. It must be noted that this research identifies pragmatic intentions in the corpus for answering both research questions, but there exists a difference between the methodologies used for each one. In RQ1 the identification of pragmatic indicators was open to provide more detailed communicative intentions with no theoretical constraints, whereas in RQ2 pragmatic indicators were predefined in the theory and explicitly linked to knowledge construction processes (Díez-Arcón et al., 2021).

**Research Question 1**. Data collection consisted in the identification and classification of pragmatic speech acts in the specific modules of the forums (see Figure 2). The pragmatic intentions of each term (n = 1604) were classified according to criteria in Table 2.
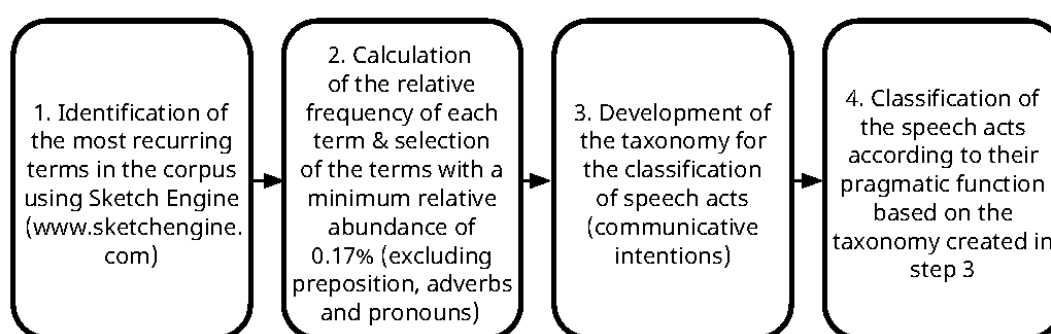
**Figure 2.** Diagram of the methodological phases for RQ1

**Table 2.** Description of the criteria applied for each taxonomy

| Taxonomy | Criteria |
| --- | --- |
| Learning process | Aspects in relation to the learning process within the course: activities, evaluations, and outcomes |
| English background | Prior experiences with the target language |
| Feedback | Feedback provision from the aspects of the course or to peers' and facilitators' comments |
| Reflection | Individuals' reflections on any aspect of the course or the learning process |
| Intention | Prospects for the course in form of a wish or challenge |
| Self-evaluation | Reflection on the learning process involving the assessment of personal performance or other course dynamics |
| Personal | Personal issues unrelated to the course or the target language |
| Strategy | Learning strategies (own, learnt, or studied) not derived from reflective acts, but personal ones |
| Technical issues | Report of technical issues |

The concurrence of each selected term in the corpus (n = 1604) was associated with a category by two raters. Cohen's Kappa was calculated to assure interrater validity which corrects for chance agreement of descriptive statistics (82.8% interrater agreement) (Table 3). The value of Kappa indicated a strong interrater validity (κ = 0.800) (Cohen, 1960) (Table 4).

**Table 3.** Percentage of interrater agreement through the calculation of the differences between raters

| *Valid* | Frequency | Percent | Valid percent | Percent |
|---|---|---|---|---|
| −7.00 | 3 | .2 | .2 | .2 |
| −6.00 | 6 | .4 | .4 | .6 |
| −5.00 | 21 | 1.3 | 1.3 | 1.9 |
| −4.00 | 15 | .9 | .9 | 2.8 |
| −3.00 | 19 | 1.2 | 1.2 | 4.0 |
| −2.00 | 34 | 2.1 | 2.1 | 6.1 |
| −1.00 | 46 | 2.9 | 2.9 | 9.0 |
| **.00** | **1328** | **82.8** | **82.8** | **91.8** |
| 1.00 | 28 | 1.7 | 1.7 | 93.5 |
| 2.00 | 22 | 1.4 | 1.4 | 94.9 |
| 3.00 | 36 | 2.2 | 2.2 | 97.1 |
| 4.00 | 13 | .8 | .8 | 97.9 |
| 5.00 | 11 | .7 | .7 | 98.6 |
| 6.00 | 14 | .9 | .9 | 99.5 |
| 7.00 | 8 | .5 | .5 | 100.0 |
| *Total* | 1604 | 100.0 | 100.0 | |

**Table 4.** Interrater agreement by Cohen's Kappa

| | Value | Asymptotic standard error[a] | Approximate T[b] | Approximate significance |
|---|---|---|---|---|
| Measurement of agreement Kappa | .800 | .011 | 80.592 | .000 |
| N of valid cases | 1604 | | | |

Data analysis was carried out in two phases. First, the percentages of terms in each pragmatic category were calculated to identify their relative abundance. To identify homogeneous clusters of modules according to the absolute frequency of the pragmatic categories, a K-means cluster analysis was applied. For this purpose, it was decided to initially use a two-cluster solution with 10 iterations, using IBMM SPSS 21 software, and preserving the cluster of each module's belonging (interventions in the forums). The execution of an analysis with three solutions did not allow the incorporation of new variables, so it was discarded as a result likely to provide relevant information. The second phase consisted in a descriptive analysis of the relative frequency (%) of the different pragmatic categories in each module to observe which ones stood out. The selection of the highest percentage was specified in the first two values, since there was a marked concentration of pragmatic categories in a limited number of categories. The results obtained from both analyses were qualitatively interpreted to ascertain whether the pragmatic indicators were consistent with the

expected role of each thread in terms of promotion of self-reflection strategies and accessibility and ease of navigation. This way, the relevance of predefined structures was assessed.

**Research Question 2.** Data collection was carried out by the identification of communicative intentions expressed in the corpus according to the hierarchical model proposed in Díez-Arcón et al. (2021) (see Figure 3). This model has its more abstract dimension in the classification for the mental skills to be achieved using forums: basic and higher order ones. From these, three subcategories emerge to describe the forms of dialogue occurring in forums (Collison, 2000): social, argumentative, and pragmatic. The first two are framed in terms of basic mental capacities. Social dialogue does not necessarily deal with academic content and argumentative dialogue expresses personal reflections on content, which is consistent with the description of the dynamics that occur at this level where a particular topic is defined and explored. The pragmatic dialogue aims at evaluating the content by a more exhaustive analysis of the concepts worked on and the creation of concrete strategies.

The last dimension is aimed to identify text indicators (Rovai, 2003). The posing of new questions and the explanation of ideas belong to argumentative dialogue (Collison, 2000) and, consequently, to Garrison's (1992) basic mental capacities, since through these dynamics the topic is introduced in an exploratory manner. Finally, the indicators responsible for identifying problems and/or proposing solutions and the critical evaluation of comments are part of the pragmatic dialogue (Collison, 2000), which, as indicated above, give rise to the development of the so-called higher order mental capacities. Interventions in each module were, therefore, classified to observe whether the nature of the interventions met an adequate balance (globally and individually) to stimulate both basic and higher order mental abilities, both contributing to meaningful learning in forums (Garrison, 1992).
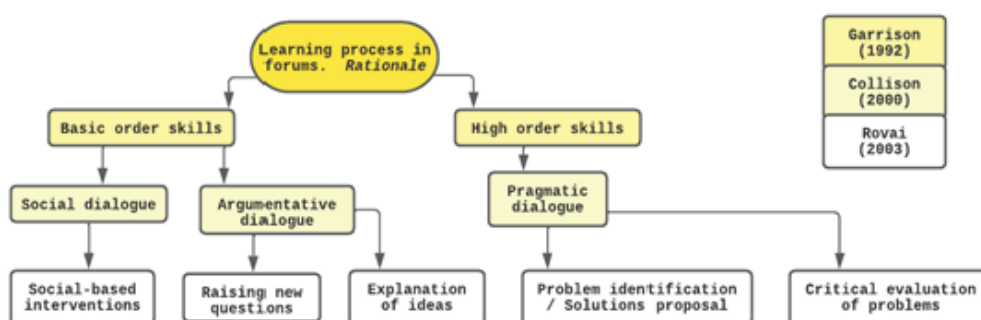


**Figure 3.** Rationale for the interrelation among dimensions for content analysis in forums (Díez-Arcón et al., 2021)

## Results

### Research Question 1

**Phase 1**. The identification of the most recurrent terms resulted in 37 words (see Figure 4) to be pragmatically categorised according to criteria in Table 1. This amount represented a minimum relative abundance of 0.17% for each term, or a minimum recurrence in the text of 20 times per term.



**Figure 4.** Cloud word of the most recurrent terms in the corpus

The K-means cluster analysis permits to observe the two final clusters (Table 5), where cluster 1 had high values for "English Background," "Personal" and "Intention," while cluster 2 has high, but more discrete values, for the categories "Strategy" and "Reflection." The solution, although not optimal from the perspective of performing standard cluster analysis, highlights the differences between the introductory module and the rest of the modules (see Table 6).

**Table 5.** Cluster analysis solution

| Final cluster centers | | |
|---|---|---|
| | **Cluster** | |
| | **1** | **2** |
| Learning process | 2 | 11 |
| English background | **219** | 20 |
| Feedback | 11 | 12 |
| Reflection | 40 | **27** |
| Strategy | 0 | **28** |
| Intention | **175** | 5 |
| Prospects | 125 | 0 |
| Self-evaluation | 14 | 5 |
| Personal | **236** | 6 |
| Feeling | 10 | 1 |
| Support | 2 | 3 |
| Tech Issues | 10 | 4 |

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**Table 6.** Modules differentiation from the cluster analysis

| Cluster membership | | | |
|---|---|---|---|
| **Case number** | **SET** | **Cluster** | **Distance** |
| 1 | **Mod 1. Introduction** | 1 | **0.000** |
| 2 | Mod 2. Reading | 2 | 63.525 |
| 3 | Mod 2. Reading SLE | 2 | 61.198 |
| 4 | Mod 3. Writing | 2 | 41.312 |
| 5 | Mod 3. Writing SLE | 2 | 33.356 |
| 6 | Mod 4. Listening | 2 | 28.234 |
| 7 | Mod 4. Listening SLE | | |
| 8 | Mod 5. Speaking | 2 | 38.186 |
| 9 | Mod 5. Speaking SLE | 2 | 28.273 |
| 10 | Mod 6. Final Reflections | 2 | 44.039 |

Although the lack of correction for cumulative error implies limitations in the ANOVA analysis associated with the K-means clusters, it can be observed that "English Background" and "Personal" stands out as two of the main variables that influences the differentiation of the content in Module 1 with respect to the others (see Table 7).

**Table 7.** ANOVA analysis for the identification of outstanding variables in Module 1

| | ANOVA | | | | | |
|---|---|---|---|---|---|---|
| | Cluster | | Error | | | |
| | Mean square | *df* | Mean square | *df* | *F* | *Sig.* |
| Learning process | 47.125 | 1 | 86.41 | 7 | 0.588 | 0.468 |
| **English background** | **35112.500** | 1 | 156.214 | 7 | 224.771 | **0.000** |
| Feedback | 5.839 | 1 | 89.857 | 7 | 0.317 | 0.591 |
| Reflection | 150.222 | 1 | 702.000 | 7 | 0.214 | 0.658 |
| Strategy | 672.222 | 1 | 922.286 | 7 | 0.729 | 0.422 |
| Intention | 25613.389 | 1 | 35.929 | 7 | 712.898 | 0.000 |
| Prospects | 13805.681 | 1 | 0.554 | 7 | 24939.294 | 0.000 |
| Self-evaluation | 78.125 | 1 | 40.268 | 7 | 1.940 | 0.206 |
| **Personal** | **46971.125** | 1 | 34.696 | 7 | 1353.774 | **0.000** |
| Feeling | 70.014 | 1 | 0.411 | 7 | 170.469 | 0.000 |
| Support | 0.681 | 1 | 30.125 | 7 | 0.023 | 0.885 |
| Tech issues | 33.347 | 1 | 103.554 | 7 | 0.322 | 0.588 |

**Phase 2.** Figure 5 reflects two most representative categories in each module. "Reflection" stood out for its high frequency in the Speaking Module with more than 50%, and it remained recurrent in most of the skill-based threads. "English

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Background" also found its place in more than half of the threads and "Strategy" become especially relevant in the case of Module 6 (Final Reflections). It was also noticeable that modules 2 and 5, which did not offer explicitly language practice, shared strategical speech acts, in contrast with the ones which did not. "Feedback" category only resulted representative in the final module.

"Share your learning experiences" threads, specifically designed to self-reflect about the learning processes occurring in each module, revealed some striking results. "Reflection" taxonomy was particularly high in sub threads 2 and 4, and "English background," although with a lower frequency, remained relevant for sub threads 2 and 3. It was also noteworthy that the so-called categories "Learning Process," "Self-evaluation," and "Intention" became to be relevant for the first time in these specific threads (3, 4, and 5).
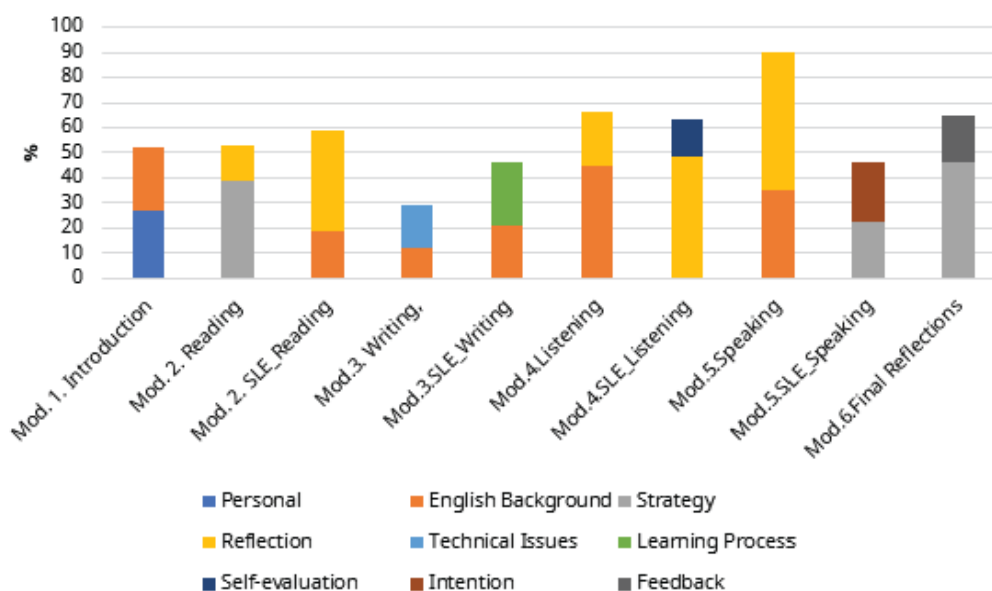


**Figure 5.** Relevance of speech act categories per module. Representation of the two highest frequencies

## Research Question 2

The search for primary indicators in the forum interventions (Rovai, 2003) permitted their association with the mental skills to be fostered using the forums. It can be observed that there is a balance between the basic and higher mental skills (see Figure 6), considering the total number of interventions. Basic ones embraced social-based interventions (46.2%), explanation of ideas (7.1%) and raising new questions (0.2%). With a closely similar percentage, high order skills were the sum of interventions for the identification of problems and proposal of solutions (46.48%). Some examples corresponding to the mentioned categories can be found in Table 8 (it must be noted they can include grammar and spelling mistakes).

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**Table 8.** Textual indicators in the forums (Rovai, 2003)

| Student ID | Text indicator (Rovai, 2003) | Comment |
|---|---|---|
| 103 | Social-based interventions | "Good morning everybody. All of your ideas are grate Thank you very much for your help. Im trying to recycling my self cause I didn't study English for decades" |
| 127 | Explanation of ideas | "I think that speaking face to face is a form of interact with the other person and you feel more relaxed in this situation" |
| 130 | Raising new questions | "I did the writing of tourism...but I don't know how it will be the results or evaluation. Can I know if it is ok or no? |
| 19 | Identification of problems or proposal of solutions | "Firstable relax and do not panic. Organice thoughts before began and answer the questions in a structural way, thinking very slowly the best English expressions you know...if you mistake, do not fear to repeat the same in a different way" |
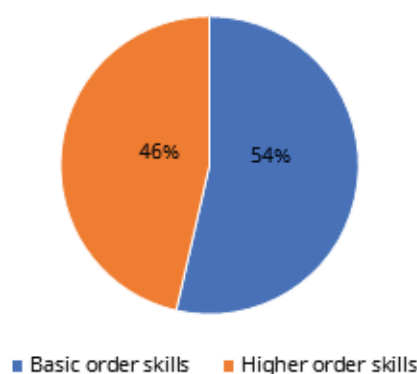


**Figure 6.** Distribution of forum contributions in terms of mental skills development

The results in Figure 7 show the frequency of basic and higher order interventions disaggregated by the threads and sub-threads associated with each module. It can be observed that, unlike the related global results, there is hardly any module that finds a balance between both skills, with the relative exception of the "Share your experience" (SLE) threads in modules 2, 3, and 4.
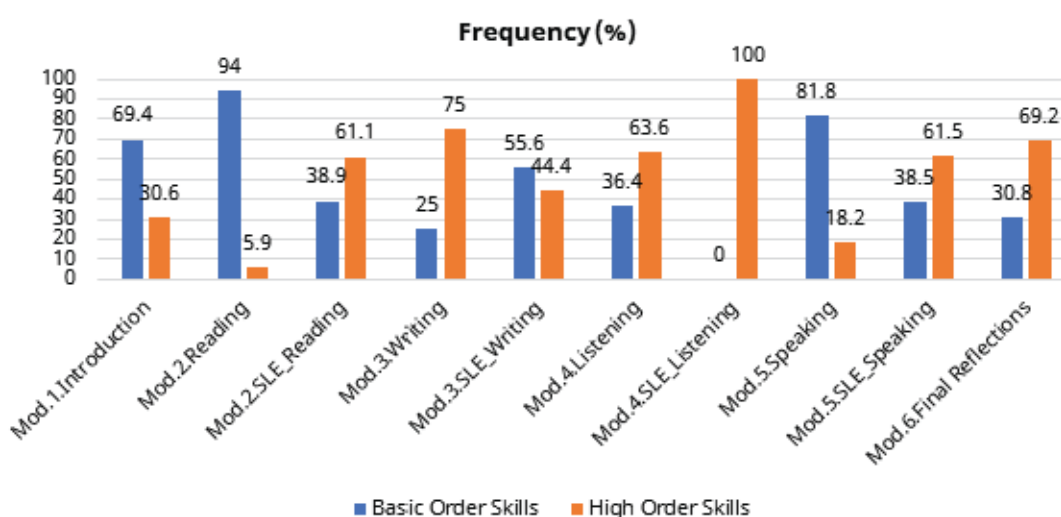


**Figure 7.** Frequency of basic and higher order interventions in threads and sub threads

## Discussion

### *Keeping structures simple, intuitive, and goal-oriented: A potential key to success in LMOOC forums*

The first analysis was carried out to find out the effect of the predefined structures in terms of informative and communicative effectiveness and sufficiency to promote actions that stimulate self-determination. Historically, research in this area has focused on profiles that are more likely to complete the courses, ignoring sub-population's goals (Poquet et al., 2020). This clearly restricts progress in the field of open learning. This study has tried to fill this gap by paying attention to all participants' needs. Therefore, it has considered active and passive behaviours and has assumed the heterogeneity in the engagement with the activity in the forums. In this way, the quality of one of the essential resources in LMOOCs has been monitored in terms of accessibility and meta-learning. Interventions were observed from a naturalistic approach that was not influenced by theories in the didactic use of forums, but observed speech acts to qualitatively interpret their association to the objectives pursued.

The cluster analysis revealed clear differences between two blocks of modules. The first cluster corresponded to the introductory module, where the categories "English Background," "Personal," and "Intention" were the most representative. The second cluster covered the rest of the course modules with more discrete values variables ("Strategy" and "Reflection"), but which nevertheless represent a relevant variability. These results are consistent with previous taxonomies in the literature (Brinton et al., 2014; Cui & Wise, 2015; Tang et al., 2020; Wise et al., 2017) that distinguish between course-related content and the one which is not.

The most representative non-content related pragmatic categories in the first module are perfectly coherent with the formative context, as they meet the social needs of distance learners (Callaghan & Fribbance, 2016). The social nature of this first thread is evidenced by the communicative intentions which are dedicated to sharing information related to personal aspects, experience, and intentions with the language as a way of introducing themselves to the rest of the group. The second cluster, consequently, encompasses all the skill-based threads and the final one which captures the experiences derived from the course activity. According to Brinton et al. (2014) content-related publications are seen as a positive indicator of content use and are directly related to the learning process. It seems evident that one way to promote discussion about the content is the creation of related threads. In the case of LMOOCs, the distribution of the main threads can be perfectly replicable as they are determined by the language skills.

The interventions of the main content-related threads had an expected behaviour according to their objectives. These contain heterogeneous communicative intentions, which may be determined by design factors such as the activities proposed in each module or by the meaning of the facilitators' interventions guiding the discussion. It is noteworthy that the main threads of "Listening" and "Speaking" shared pragmatic categories, since the learning

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processes for the acquisition of both skills are closely related (Richards, 2008). In this case, another possible relationship is provided by an element of the design itself, as the course proposed a voluntary activity through an external resource to practise both skills together. It is also salient the strategical and feedback nature of the final module, which is coherent with the possibility of communicating one's own strategies and experiences during the course derived from the activity and which, therefore, can only be expressed a posteriori. This communicative intentionality makes it evident that peer to peer support was not common during the course, as the feedback was directed towards the evaluation of the course.

The strategic nature of the interventions in Module 2 (Reading) was evident only in this main skill-based thread. This fact finds a plausible explanation in the lack of additional activities proposed for working on this competence, which is not the case in the modules that do offer this additional language practice. Strategic comments here replaced those relating to learning experience or reflection. Most of the core modules maintained 'English Background' as a recurrent category in which it can be perceived that the foreign language learner has a need to express their previous experiences with the study or practice of each competence. Whereas in the introductory module these experiences alternated with purely personal information, in the main skill-based threads there was a combination with reflective or strategic interventions. The comments on technical issues in the "Writing" thread were an exception to the above, which can be explained by design issues. The use of an external writing practice tool created ad-hoc for the course led to some incidences which were reflected in the relevance of this category in this specific thread.

The proposal by Agonács et al. (2020) to stimulate self-reflection on learning as a tool to develop self-determination was incorporated due to its connection to how learning is acquired in LMOOCs (Agonács et al., 2020; Beaven et al., 2014). This decision led to the creation of the "Share your learning experiences" sub-threads, and, according to the results, it can be stated that it had the expected effect. The learner-centred approach postulates that learning is a personal experience, and the learner is an active agent in this process (Waard, 2016). Metacognitive reflection on learning is a tool that becomes necessary in environments where participants are responsible for their own learning (Agonács et al., 2020). It is striking that the creation of these sub-threads made visible the categories "Learning Process" and "Self-evaluation", which together with the recurrent "Reflection" showed a clear link to the objectives followed on these threads. The exception to these results can be observed in the "Speaking" sub-thread where "Strategy" and "Intention" were the most representative categories. Once again, the design of the activities was clearly reflected in the forum contributions. Although the course offered an external tool for speaking practice, this was placed in the "Listening" module, and was presented as an additional activity to work both skills together. Intentionality and strategy, therefore, superseded the reflection or learning experience expected in the speech acts in these sub-threads.

The structure proposed for the discussion forums in this LMOOC can be

considered adequate in terms of accessibility, ease of navigation and creation of suitable spaces to develop the necessary skills to learn in LMOOC. The study has attempted to address the needs of the whole course population who do not normally have a high level of engagement with the forums. The basis of organisation and labelling has been clear, simple, and targeted to facilitate communication and information seeking. Inadequate labelling can juxtapose topics, creating access difficulties (Sun et al., 2016), so the design based on categories and subcategories with subject threads allows for a more intuitive distribution (Castrillo, 2015). In this sense, the design adopts a strategy where the threads created have very defined purposes and combine the possibility of social interaction with aspects related to the curriculum, which according to Panagioditis (2019) is evidence of an efficient design. This layout has allowed the user to retrieve the information needed from peers and facilitators' interventions with relative ease. Also, the user finds specific self-reflection spaces in which active participants develop their self-determination skills, and passive ones can learn to develop them through observation (Agonács et al., 2020; Chiu & Hew, 2018).

The results, however, permitted to observe some discrepancies affecting threads and sub-threads that need to be addressed. The lack of correspondence of certain speech acts with their theoretical module(s) needs of a perfect alienation of the topics in forums with the objectives and resources of the modules to avoid confusion among participants, especially passive ones who visit the resources to satisfy very specific needs by minimising the consultation time and cognitive effort employed (Chiu & Hew, 2018; White & Le Cornu, 2011). Forums are dynamic tools (Liu et al., 2022) and this characteristic allows for organic intervention in them. At this point, facilitation in forums should be able to guide the direction of dialogues and become into another resource to be aligned with the specific objectives addressed in each section. Likewise, it should be expected that facilitation will be able to redirect interactions with the same objective.

## *Meaningful learning in LMOOC forums: Design and beyond*

The proposed structure had the capacity to stimulate basic and higher order capabilities in almost equal parts, which is significant from an overall perspective. In this case, however, only active participants who, in addition, stayed in the course on a permanent basis, could benefit from this format. This does not correspond to reality (Liu et al., 2016; Martín-Monje et al., 2017; Onah et al., 2014), nor is it inclusive, as it is not applicable to the most representative population of LMOOCs. A detailed analysis of the concurrence of these capacities in each thread showed that the desirable balance between the different mental capacities is not achieved in practically any thread or sub-thread, except for the "Share your learning experiences" sub-threads where the distances between the two frequencies are shortened. It is understandable, therefore, that it is in these threads that the users can achieve the most significant learning, in accordance with Garrison (1992) and Gorsky and Carspi's theories.

Gorsky and Carspi's "Theoretical Framework of Distance Education" (2005)

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explains that learning acquisition is achieved by the interrelation of social and subject matter dialogues. Closest to the context of this study, Garrison (1992) states that, in forums, basic and higher order mental skills can be potentially developed, and their combination results in meaningful learning. It is deduced, therefore, that passive and active forum users can benefit from threads where a coherent balance of the stimulation of both capacities is achieved. A large majority of threads, however, did not reach the expected balance which does not indicate a fruitful use of these tools for the intended purpose. Facilitators should be conscious of these benefits and be the ones guiding the development of both capacities in a balanced way. Nonetheless, it is important to remember that forums provide opportunities for foreign language production and reception (Faiz & Lin, 2016; Meskill & Anthony, 2008), so simply accessing these tools can bring benefits to the language learner.

## Limitations & conclusions

This study has aimed to monitor the quality of the design of LMOOC forums in terms of accessibility, ease of navigation, learning assessment, and support for the development of strategies that foster self-determination, a theory that explains the characteristics and skills associated with the acquisition of learning in LMOOCs. To this end, two analyses of the content of the contributions in the forums were carried out using two instruments that permitted to answer to the objectives of the research.

The limitations of the study should be mentioned. One important limitation is that the study has focused on a qualitative interpretation to respond to the research objectives, which can be considered a first step in the evaluation of the design of the forum structure. However, this analysis could be complemented and improved by the participants' evaluation of the elements studied. In LMOOC research, participation is a key element, so it would be desirable to introduce this variable in future related studies. Another limitation is represented by the size of the sample which corresponds to the usual low interaction pattern in LMOOCs. This fact is not extraordinary in this context, so although a larger corpus would have enriched the results, it has not limited the possibility to perform a realistic analysis of forum contributions. This reality provides evidence that can serve as a guide for agents involved in the design and implementation of LMOOCs who value considering efficient designs for all participants.

The inclusive perspective that this study has acquired allows us to take a step forward in LMOOC research by considering the so-called subpopulations that are usually neglected in research. Although their study remains complex in other aspects, the results have permitted to examine whether trainers, designers and researchers are considering layouts that accept the heterogeneity of the population and their way of interacting with the resources of an LMOOC. This first step becomes essential to ensure that designs are efficient and meet the particular needs of different profiles. Once these foundations are laid, further progress can be made with respect to pending challenges, such as

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promoting the practice of the language and ensuring that this is understood by participants as a key to success for their language education.

The creation of common analytical frameworks strengthens LMOOC research, and the monitoring of design quality should be considered as an area contributing to this end. Suggestions in the design proposed in this study may be replicated due to their simplicity and concreteness. The design proposal is based on four pillars: 1) granting socialisation spaces that enable dialogue on aspects that are not content-related; 2) including content-related dialogue spaces (threads) that discriminate among the different language skills and which are aligned with the resources included in the corresponding thematic modules; 3) specific spaces that allow for self-reflection in order to train users' self-determination skills; 4) having facilitators aware of participants' needs and capable to intervene to redirect the discussions when appropriate.

## Acknowledgments

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# 5.  CONCLUSIONS

The main objective of the present research was to provide a plural perspective on the state of the art in LMOOCs. It can be affirmed that the entire development of this thesis dissertation has followed solid justifications and has adopted consistent methodological criteria accordingly. The initial publication played an essential role in the development of the rest of the pieces included in this thesis, since it identified research trends in the latest LMOOC literature in terms of interest issues and methodologies. These primary insights were reinforced by the succession of publications that similarly supported methodological decisions, feeding back into each other, as discussed in previous sections.

Precisely, one of the main strenghts of this piece of research is the relevance and cohesion among the specific objectives, which have smoothly transitioned from theoretical assumptions to application. The latter's common core has presented educational realities in LMOOCs from innovative and meaningful perspectives in line with the needs detected. On the one hand, the relevance of the research has been dually ascertained: 1) through the PhD thesis supervisor's approval of the decisions and steps taken; and 2) through the publication of the research in high-impact scholarly collections in applied linguistics and CALL, as will be detailed further on.

On the other hand, the cohesion has built a story line throughout the work which, as a result, has permitted to meet the initial expectations on the provision of a comprehensive perspective on LMOOCs and confirm the hyphothesis raised, which set out the expected results to be practical and replicable. The works presented contribute to the identification of new variables to consider affecting language learning in LMOOCs, such as the need of creating inclusive learning spaces and to regularly monitor their

quality. It can be affirmed that the global perspective objectivised has been achieved by covering theoretical, experimental, and exploratory aspects in an unified manner. Thus, this global perspective permits to strenghten: 1) the assumption of common theoretical frameworks in the field and 2) the possibility of the conformation of analytical ones as well. In the next paragraphs each of the research objectives are revisited and the relevant conclusions are detailed.

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**Objective 1 (O$_1$):** To describe the state of the art of LMOOC research with attention to the most discussed topics in the literature by a systematic review of the scholarly publications from 2019 to 2021.

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**Conclusion (O$_1$):** The main conclusion from **Publication I** is the acknowledgement of LMOOC research as a consolidated subfield of CALL. The most recent publications explored offered more theoretical reflections, which differ from former phases where the evidence on LMOOC was anecdotical. This conclusion is supported by the exploration of the most discussed topics that were aimed to identify progress indicators leading to significant advances in research.

Recent research has focused on the conceptualisation of LMOOCs, paying attention to participants' needs -considering social language learning theory as a backbone- and how this should result in enhanced instructional designs. The systematic literature review also revealed the increasing use of mixed methodologies in LMOOC research. This has meant the continuation of a promising trend already identified in the first systematic review in LMOOC, which in turn should serve to design more

sophisticated methodologies that optimise data collection and analysis.

Tha main purspose of systematic reviews is to synthesise the published literature on a particular topic to provide accurate support for researchers and practitioners working on the same field. The main conclusions of this systematic review, therefore, served as inspiration for the author in the further development of this thesis dissertation. The implications for general LMOOC research adopted the form of insightful suggestions to be followed. Hence, the need of conceptualisation and theoretical assumptions were naturally conducive to further explore participation, interaction, and instructional design in LMOOCs by combining quantiative and qualitative techniques.

**Objective 2 (O$_2$):** To develop customised functionalities in an LMOOC to foster social language learning according to the affordances of this theory for language learning.

**Objective 3 (O$_3$).** To assess the impact of the educational intervention based on the social learning theory in terms of fostering interaction and improving the learning experience.

**Conclusion (O$_2$ & O$_3$):** The objectives and conclusions of this section are related to **Publication II.** This piece of research paid attention to how social language learning could be fostered in a LMOOC by the implementation of extra functionalities based on social media use and the reinforcement of teacher presence in the discussion forums **(O$_2$).** The assessment of the impact of the educational intervention **(O$_3$)** showed that

steps were being taken in the right direction by offering functionalities such as an additional communication space for interaction and wider access to linguistic resources, which have the capacity to enhance social learning in online contexts and encouraging students to become more active.

This work provided practical and theoretical contributions to the field as expected after the application of the methodology employed (Design-based Research). First, social media use was specially recommended for LMOOC due to the multimodal and interactive features these tools include, and based on participants' behaviour towards their use. Additionally, at a more theoretical level, social language learning could be refined in this specific learning context by informing the community about the potential, challenges, and recommended use of these specific communication tools. This is reflected in the suggestions to be considered from this experience, such as the presentation of more exhaustive information to students of the pedagogical implications on the use of social media for language learning.

**Objective 4 (O$_4$):** To ascertain the dominant learners' profile(s) in LMOOCs considering the behavioural patterns reported in the literature.

**Conclusion (O$_4$):** Objective and conclusion 4 are abstracted from **Publication III**. The study of participants' behaviour in LMOOCs permitted to ascertain the most common profile combination (Anderson et al., 2014; Kizilcec et al., 2013) represented by the labels "disengaging" and "viewers". This overview implies that language learners

in LMOOCs do not have special interest or motivation in completing the courses by fulfilling the requirements defined for this purposes such as tasks submission and participation. Instead, success should be measured in terms of accessing to meaningful content which allows to meet personal learning goals or having the opportunity to practice the target language.

However, these same participants are active and select the materials to be consulted before stopping the activity in the course. Practically, this findings mean that participants are taking advatadge of the courses in non-traditional manners, so it can be deduced that the research focus should be modified from completion rates to participants' experience in terms of usefulness and satisfaction on individual learning paths. It should also permit to dissasociate the success-completion relationship which imply these elements to be dependent on each other.

It is evident that this approach perpetuates the focus on active participants while overlooking the fact that most of them act in precisely the opposite way. The implications of this work stem from this required change of perspective. Thereby, it suggests to propose innovative methods that permit to focus on individual learning interests and resources exploitiation, which need to become the indicator to determine language learning success. For the specific interest of this thesis dissertation, it should be noted that the focus on passive participants in LMOOCs was determinant to proceed with the last piece of research included in this work.

**Objective 5 (O₅):** To propose an efficient methodological design to monitor the quality in the design of LMOOC forums.

**Objective 6 (O₆):** To observe whether the pragmatic nature of the forums contributions in a LMOOC were coherent with the structured threads.

**Conclusion (O₅ & O₆):** The fifth objective **(O₅),** addressed in **Publication IV,** proposed the design of a replicable analytical framework to assess the quality of forums as an essential resource in LMOOCs. To this aim, the methodological procedures were developed following theoretical frameworks on content analysis in discussion forums, LMOOC forums contributions to the quality of learning, the impact of forums on meaningful language learning, and participants' behaviour activity and interpretation in LMOOC forums. Besides, the proposal for an efficient monitoring also needed to devote special attention to the development of self-determination learning skills.

The main conclusion in regards to **O₅** is attached to the call to action for real progress to be soon noticed. This may be achieved by the construction of common analytical frameworks in the field that permit to standardise relevant variables and their analysis. Solid proof of this is reflected in the analytical framework put forward in the correspondent publication, which proved to be pertinent due to the grounded evidence from the results obtained supporting it. The creation of analytical frameworks in LMOOC research just strenghtens the field and the monitoring of design quality, among others, should be considered as an area contributing to this end.

Once the framework was established, analyses of the content of the forum contributions were carried out to determine the efectiveness of the structure of these spaces in the course. The main conclusion reached was to keep the structures in LMOOC forums simple, intuitive and goal-oriented as a key to success. Besides, heterogeneity in the engagement with the activities in these spaces should be considered, as well as the learning needs identified in LMOOC participants.

Another relevant conclusion is the need of inclusive perspectives in LMOOC research. It is necessary to configure and apply efficient instructional designs in LMOOCs considering the latest trends in research, such as the review of design features (Chong et al., 2022) but also related experiences reported, which need to be a base to look at on the desing of learning spaces. This criteria precisely allowed to propose a suitable design for the consideration of researchers, instructors, and designers in this study. This practice should guide future instructional designs in LMOOCs.

A final consideration emerges from the methodological procedures employed, specially in **Publication II** and **IV**, which strictly followed recommendations on the use of mixed methods in LMOOC research. Critical voices have noted that research on foreign language education in online formats has usually overused unsophisticated methods and non-reliable measuring tools (Zhang & Aryadoust, 2022; Raffaghelli et al., 2015), which may prevent from making significant advances in the field. This piece of research has aimed to overcome this conception by the application of statistical techniques in combination with qualitative ones which have permitted to solidly underpin the conclusions reached. Certainly, it can be considered a sound way forward for researchers in the discipline.

The limitations of this piece of research should be acknowledged. The main constraints are related to the very nature of LMOOCs as a technology-related learning modality and an educational object. The former conditions the capacity of ensuring deeply-rooted standard frameworks, due to the rapid and constant evolution of learning technologies and their application: "short term gain, long term pain", as it is popularly said. This is especially evident in Publication II, where the selection of specific social networks considered their relevance during the time of the educational intervention, but may not longer be innovative or socially accepted soon.

The educational nature of LMOOCs is also a relevant and limiting factor to consider, and more specifically, the variability of educational contexts. This inconstancy prevents the same strategy from having the same effect under similar conditions. This is exacerbated by the massive participation in these courses, and motivational issues related to language learning. Whereas these facts may hinder the replicability of results, it also reinforces the idea of subtly abstracting the main lessons learnt to develop a range of strategies to be applied for succesful language learning in this format.

Another limitation identified is related to the lack of generalisability of most of the works presented, which do not permit to infer broad implications from the results obtained. This is evident in Publications II, III, and IV, whose methodological affordances are limited mostly by sampling issues. Data collection in Publications II and IV is derived from the study of the edition of a single LMOOC, while Publication III clearly states this fact by the methodological approach adopted. This should necessarily be addressed in future research by the application of techniques able to overcome this condition. However, the author's intentions were not strictly aligned with generasibility issues,

since the practical implications of the results aimed to provide a glimpse of new ways to address successful language learning in MOOCs.

The elaboration of this thesis dissertation can be considered the starting point of the authors' research career and reinforces her commitment to keep high-quality research on LMOOCs as an essential foreign language educational option. The author's future research aims to keep working on conceptual aspects and their practical applications. There are two avenues of research on which the author has already started to work. The first one focuses on broadening the definition of LMOOCs by exploring different language learning modalities and their systematisation, and the second one looks into enhancing participants' language practice using innovative language exchange tools. Both new avenues of research have become possible thanks to the collaboration with national and international colleagues, and by creating a network of LMOOC researchers, which is crucial in a new scholarly field such as this one. It is hoped that the following years this path of discovery and research will expand and consolidate, this PhD thesis is only the initiation.

# 6. ABSTRACT

This doctoral dissertation looks into LMOOC research from a plural perspective. This aim entails the study of diverse relevant aspects such as learning theories, participation and instructional design affecting the progress in this consolidated sub-discipline in CALL. The novelty of this work lies on the unified approach expected by encountering significant connections across topics which, thus far, were explored in isolation.

To this aim, the work presents a collection of published papers that can be anlaysed as a whole, due to their thematic unity, although the objectives differ from one another. A systematic review on LMOOC research is first conducted to ascertain trend topics and methodologies in the field. This represents a solid background to design the subsequent studies, and fills relevant research gaps such as experimentation with social learning theory in LMOOCs, LMOOC participants' traits, and the monitoring of the quality of resources in an LMOOC.

The research methodologies used are also diverse and specifically adapted to meet the objectives pursued. This can be ascertained by the mixed-methodological approach adopted, though it must be noted that the nature of the studies is mainly qualitative in its general approach. Such is the case with the systematic review, the bibliographic review, or the analysis of the content conducted. Nonetheless, qualitative and quantitive elements are smoothly combined by the use of statistic techniques along with qualitative ones such as observation, interpretation, and synthesis.

The results have two main implications at the theoretical and practical level. The first implication is that social learning in LMOOCs is confirmed as an outstanding learning theory which needs to be refined in this educational context. Derived from this fact, the

practical approach calls for experimentation by the application of innovative approches that overcome LMOOC platforms limitations. Also at the practical level, behavioural patterns in participants permit to observe mostly passive online attitudes that should lead to more inclusive designs capable to meet specific language learners' needs. It is imperative that this reality is considered by designers and monitored by researchers as a quality element in the instructional designs, as well as to consider social language learning postulates to this effect.

The main conclusion is that the transversal study of all these different relevant aspects in LMOOCs (the state of the art in LMOOC research, the funtionalities which foster social language learning, the dominant learners' profiles, the quality assurance in the design of LMOOC forums) has permitted to present a clear interrelation across topics of interest in this discipline. Issues addresed such as how foreign language is learnt in this context, how participants behave online, and how these realities need to be reflected in suitable language learning spaces are relevantly connected, and, as a consequence, practical and replicable solutions can be proposed. Moreover, it is advised to build common analytical frameworks in the field such as the monitoring of the desing elements of the courses presented.

While the conformation of common theoretical and methodological frameworks in LMOOC research is confirmed as a reality, more efforts are needed to keep building common analytical ones. The creation of these should permit to systematically consider factors that the evidence has shown to be important when studying LMOOCs and consolidate relevant variables affecting effective language learning in this format.

Experience has demonstrated that these actions lead to progress and, therefore, only by the establishment of common grounds this advance could be replicated in the future.

# 7. OTHER CONTRIBUTIONS RELEVANT FOR THIS RESEARCH

This section aims to provide the professional context which has supported the author's journey into Academia. What follows is a description of other relevant contributions in the field of Applied Linguistics, and more specifically in CALL and Open Education in the years conducent to the completion of this doctoral thesis. The presentation of additional academic activities, such as participation in conferences or research projects, responds to the need to reflect complementary work accomplished in by the author in this academic context. These additional dissemination practices support and contextualise the thesis dissertation.

It should be noted that the development of this work has been supported by three significant milestones that have brought value to this endeavour. The first one was the prize awarded to the Best Final Master's Thesis on the Sustainable Development Goals (UNED, 2022). Quality Education is one of the 17 Sustainable Development Goals and LMOOCs and MOOCs in general have had an enormous impact in the democratisation of Education across countries. The development of this master's thesis initiated the author into LMOOC research and made her aware of the relevance of open education to meet the challenges what we face as a society.

The second key event was the pre-doctoral fellowship that the author obtained, which was completed in 2021-22 and provided her a valuable insight into tertiary education, as well as the opportunity to focus solely on her research and be paid for it. Finally, the author was awarded a research grant to collaborate with a foreign institution, which allowed her to further advance her research with an international expert colleague.

What follows is a list of the conferences attended and relevant research projects in which the author has participated during this time, all of them releted to the topic of research in this PhD thesis.

## *Conferences*

- Díez-Arcón, P. (2023). "Social Learning in LMOOCs: assessing the impact of an innovative design". March 27-29th, 2023, Madrid (Spain*). XIV Seminario Internacional de Investigación de Estudios Filológicos*. Escuela Internacional de Doctorado (UNED).

- Díez-Arcón, P. (2023). "Artificial Intelligence (AI) opportunities in Open Education: General overview and business stakeholders' perspectives". March 21st, 2023. *From OER to OAI: What's Next Now We All Play with ChatGPT?*. ENCORE+ Network Event: OER Technology (European Network for Catalysing Open Resources in Education).

- Farrow, R., Schmidbauer, F., Díez-Arcón, P., Bulathwela, S., & Granly, J. (2023). "Your place in the Open Ecosystem". February 16th, 2023, Lillehammer (Norway). Lillehammer Lifelong Learning ICDE Conference 2023.

- Díez-Arcón, P. (2022). "MOOC para el aprendizaje de lenguas extranjeras: una perspectica plural". November 28th, 2022, Lisboa (Portugal). *MOOC:*

*research, design, and implementation*. PhD Technology Enhanced Learning and Societal Challenges.

- Díez-Arcón, P. & Mesa-López, L. (2022). "Communicative competence in foreign language in the workplace. Transversal learning at university level". June 30th and July 1st, 2022. V Congreso Internacional Nebrija en Lingüística Aplicada a la Enseñanza de Lenguas. *Applied Linguistics to Language Teaching: Towards Plurilingualism*. Universidad de Nebrija.

- Díez-Arcón, P. & Castrillo, M.D. (2022). "Exploring participants' contributions in Language MOOC discussion forums: a mixed study". May 27th and 28th, 2022. *Positive Impacts of Language Technology*. TISLID (Technological Innovation for Specialised Linguistic Domains) 22.

- Díez-Arcón, P. & Martín-Monje, E. (2021). "G-Rubric: The use of Open Technologies to provide Personalised feedback in Language for Specific Purposes". July 5th and 6th, 2021. EDULEARN (13th annual International Conference on Education and New Learning Technologies).

- Díez-Arcón, P., Martín-Monje, E., & Otero-Mayer, A. (2021). "Dinamización de los foros universitarios en lengua extranjera a través de la figura del e-Leading Student", July 19-17th. *II Congreso Internacional de Innovación y Tendencias Educativas*. INNTED 2021.

- Díez-Arcón, P. (2021). "Perfiles del participante en MOOC de lenguas extranjeras: un análisis bibliográfico". April 9th and 10th, 2021. *MOOCs, language learning and mobility: design, integration, reuse*. MOOC2MOVE International.

### *Research projects*

- 2022-Now: ENCORE + (European Network for Catalysing Open Resources in Education). ICDE – International Council for Open and Distance Education, Co-funded by the Erasmus+ Programme of the European Union

- 2022-Now: AGORA (Technological and methodological innovation for language teaching and the generation of synergies in rural areas - *Innovación tecnológica y metodológica para la enseñanza de lenguas y generación de sinergias en el ámbito rural*). Ministry of Science, Innovation and Universities in Spain

- 2022-Now: Interculturality, coperation and languge learning in multilingual contexts: practice and didactics of oral interacion in massive digital environments - *Interculturalidad, cooperacion y aprendizaje de lenguas en contextos multilingües: práctica y didáctica de la interacción oral en entornos digitales masivos*. Teaching Innovation project (UNED), GLOBE (Innovative Didactic Group for Languages in Open Blended Environments). Vice-Rectorate for Digitalisation and Innovation (UNED)

- 2020-2022: GAUBI (Gamification and ubiquitous learning in primary education. Development of a map of competences and teaching, student and parental resources – *Gamificación y aprendizaje ubicuo en educación primaria. Elaboración de un mapa de competencias y recursos docentes, discentes y parentales*). European Regional Development Fund (FEDER) and the Ministry of Science, Innovation and Universities in Spain

- 2019-2021 (Phase I & II). Data-Driven Learning for the improvement of written competence in English: pilot experience in MOOC, Bachelor's and Master's degree courses – *Data-Driven Learning (DDL) para la mejora de la competencia escrita en inglés: experiencia piloto en MOOC, grado y máster*. Teaching Innovation project (UNED), GLOBE (Innovative Didactic Group for Languages in Open Blended Environments). Vice-Rectorate for Digitalisation and Innovation (UNED)

- 2019-2020: E-SLP (European Short Learning Programmes for Continuous Professional Development and Lifelong Learning). European Commission & Erasmus + programme of the European Union

# 8. QUALITY INDICATORS OF THE PUBLICATIONS

The collection of publications included in this thesis dissertation have been published in three journals to comply with UNED's regulation (see Appendix 1) for thesis dissertations by published works, namely: *Bellaterra Journal of Teaching & Learning Language & Literature*, *Innovation in Language Learning and Teaching*, and *The JALT CALL Journal.* Additionally, one book chapter has been included: *English as a Foreign Language in a New-Found Post-Pandemic World* from the IGI Global Editorial.

As presented in section 2.1. of the regulatory framework: "Type and number of publications", this thesis dissertation meets the requirements for the first option offered which requests to include a minimum of three papers in journals with impact indexes in the first and second quartiles of specialised journals in the field related to the PhD Programme where the thesis is registered. It also needs to be referenced in the latest list published by the Journal Citation Reports (SCI and/or SSCI) and SCOPUS (see Table 1).

**Table 1.**

*Impact indexes of the journals in which the papers of this thesis have been published*

| Journal | Year | JCR | SJR |
|---|---|---|---|
| Bellaterra Journal of Teaching & Learning Language & Literature | 2021 | --- | Q2 |
| Innovation in Language Learning and Teaching | 2022 | Q1 | Q1 |
| JALT CALL Journal | 2023 | --- | Q1 |

**Publication I:**

AUTHOR(S): Díez-Arcón, P. & Martín-Monje, E.

TITLE: The coming of age of LMOOC research. A systematic review (2019-21)

PUBLICATION DATE: June 2022

JOURNAL: Innovation in Language Learning and Teaching

ISNN: 1750-1229

ISSN-e: 1750-1237

DOI: https://doi.org/10.1080/17501229.2022.2082446

*Innovation in Language Learning and Teaching* is a leading international journal dedicated to research in all aspects of innovation in language learning and teaching. It publishes research articles, innovative practice articles, review articles, and book reviews. It draws on a range of disciplines that share a focus on exploring new approaches to language learning and teaching largely from a learner-centered perspective.

*Innovation in Language Learning and Teaching* is aimed at anyone interested in research into the development or practical application of new methodologies in language teaching and learning. Its aims are to publish on the theoretical and methodological bases of innovative approaches to language teaching; to explore learner-centered pedagogies; and to encourage the dissemination and exchange of policy and practice related to innovation in language learning pedagogies in different learning contexts.

The scope of the journal is intentionally broad as it aims to provide an interdisciplinary platform for all those interested in innovative pedagogies and methodologies. Papers may draw from fields as diverse as educational psychology, artificial intelligence, neurolinguistics, human-machine interaction, educational technologies, philosophy and second language acquisition.

*Innovation in Language Learning and Teaching* belongs to the field of Philology and Education, within the academic field of language and literature didactics, education in general and linguistics. It is indexed in Scopus, Social Sciences Citation Index, Education Abstracts, EBSCO Education Source, Educational Research Abstracts (ERA), ERIC (Educational Resources Information Center), Linguistics & Language Behavior Abstracts, and in MLA (Modern Language Association Database). It presents metrics in SJR, SCImago Journal & Country Rank, and Scopus Sources.

It has a relevant impact at international level, as shown by its indexation in **Journal Citation Reports (JCR)**, with an impact factor of **2,241** in 2021 (last year for which metrics were provided). It ranks **45th out of a total of 195** journals, which is equivalent to the **first quartile (Q1)** within the Linguistics category.

The **Scimago Journal & Country Rank (SJR)** provides an impact factor of **0,832** in 2021 (last year for which data is provided), placing it in the **first quartile (Q1)** in the Education and Linguistics and Language areas, ranking **252 out of 1,382**, and **91 out of 1,104** journals, respectively.

**Publication II:**

AUTHOR(s): Díez-Arcón, P. & Martín-Monje, E.

TITLE: Fostering Social Language Learning in Massive Open Online Courses: The Role of

Discussion Forums and Social Media. In M. El-Henawy and M. Suárez (Eds.),

English as a Foreign Language in a New-Found Post-Pandemic World.

PUBLICATION DATE: 2022

BOOK CHAPTER: pp. 271-291

ISBN: 9781668442050

E-ISBN: 9781668442074

EDITORIAL: IGI GLOBAL

DOI: https://doi.org/10.4018/978-1-6684-4205-0.ch013

IGI GLOBAL works in collaboration with expert researchers and practitioners
from leading institutions including Massachusetts Institute of Technology (MIT), Harvard
University, Stanford University, Cambridge University, Oxford University, Tsinghua
University and Australian National University. It publishes quality peer-reviewed content
in reference books, highly indexed open access journals and a wide selection of e-
Collections.

IGI GLOBAL is a proven and trusted source for publishing and disseminating
cutting-edge resources that drive innovations and inspire positive social change. It has
presence in three major international and national editorial evaluation databases such
as Scholarly Publishers Indicators (SPI). In 2022, with an ICEE of 34, the publisher ranked

6th (out of a total of 384 publishers analysed) in the Education area, which corresponds to the first quartile (Q1).

**Publication III.**

AUTHOR(S): Díez-Arcón, P.

TITLE: Perfiles del participante en LMOOC: análisis bibliográfico y estudio de caso

PUBLICATION DATE: 2021

JOURNAL: Bellaterra Journal of Teaching & Learning Language & Literature, 14(4), e979

ISNN: 2013-6196

DOI: https://doi.org/10.5565/rev/jtl3.979

Published quarterly, the aim of the Universitat Autónoma de Barcelona's *Bellaterra Journal of Teaching & Learning Language & Literature* is to publish outstanding research. The journal is interested in empirical research and literature reviews within the range of research in language and literature teaching methods. It publishes articles by internationally renowned authors in these research areas.

The journal is part of the academic field of Language and Literature Didactics. It is indexed in Scopus, DIALNET, DOAJ, Linguistics & Language Behavior Abstracts and MLA (Modern Language Association Database). It is also evaluated in LATINDEX, Catalogue v2.0 (2018 -), Directory of Open Access Journals, ERIHPlus, LATINDEX. Catalogue v1.0 (2002 – 2017) and REDIB (Red Iberoamericana de Innovación y conocimiento científico).

*Bellaterra Journal of Teaching & Learning Language & Literature* has an important international impact, as shown by its indexing in the international tool **Scimago Journal & Country Rank (SJR)**, which evaluates this journal with an impact

factor of **0, 134** for the year 2021 (the last year for which metric data is available), placing

it in the **second quartile (Q2)** for the Arts and Humanities area, occupying position **265**

**out of 949 journals**


**Publication IV**

AUTHOR(S): Díez-Arcón, P.

TITLE: The significance of instructional design: analysis of content in Language MOOC

forums

PUBLICATION DATE: April 2023

JOURNAL: The JALT CALL Journal, 19(1), 1-25

ISNN: 1832-4215

DOI: https://doi.org/10.29140/jaltcall.v19n1.773


*The JALT CALL Journal* is an international refereed journal published in the Japan

Association for Computer Assisted Language Teaching Special Interest Group (JALT CALL

SIG). The Journal is committed to excellence in research in all areas within the field of

Computer Assisted Language Learning (CALL), while offering teaching ideas and

suggestions from teachers' personal experiences.

The journal falls within the field of Computer Science and Philology (Linguistics)

and is indexed in Scopus, EBSCO Education Source, ERIC (Education Resources

Information Center), and MLA (Modern Language Association Database). It has a

significant international impact as shown in **Scimago Journal & Country Rank (SJR)**,

which evaluates this journal with an impact factor of **0,346** for 2021 (last year for which

data is provided), placing it favourably in the **first quartile (Q1)** in the Linguistics and

Language area, in a position **257 out of a total of 1,104**.

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# 10. APPENDIX

## APPENDIX 1: Thesis by Published Papers regulation (UNED)



### Tesis por compendio de publicaciones

**"Documento aprobado por el Comité de Dirección de la EIDUNED, en su reunión de 16 de enero de 2017, y por la Comisión de Investigación y Doctorado de la UNED, con fecha 21 de febrero de 2017"**

SUMARIO
Exposición de Motivo
1. Ámbito de aplicación, concepto y estructura.
2. Compendio de publicaciones.
2.1. Clase y número de publicaciones.
2.2. Certificación de las publicaciones aceptadas.
3. Autoría y posición en el elenco de autores.
4. Tesis con Mención Internacional.
5. Tramitación y defensa de la tesis.
6. Reglas complementarias.
7. Aplicación normativa
8. Disposición Transitoria
9. Entrada en vigor

### Exposición de Motivos

El Reglamento Regulador de los Estudios de Doctorado y de las Escuelas de Doctorado de la Universidad Nacional de Educación a Distancia, establece en su artículo 28.3 que "Las Escuelas de Doctorado establecerán los requisitos para la elaboración, tramitación y defensa pública de las diferentes modalidades de tesis doctoral, incluida la modalidad de tesis por compendio de publicaciones".

La Escuela Internacional de Doctorado (EIDUNED) ha desarrollado esta previsión reglamentaria en el presente documento que integra la definición, naturaleza, y requisitos de la presentación y defensa de la tesis doctoral a través de publicaciones científicas relevantes que muestren fehacientemente la capacidad investigadora del doctorando o doctoranda y los resultados de su investigación.

Las tesis por compendio de publicaciones representan una opción específica para la elaboración y defensa pública de la tesis doctoral para la obtención del título de doctor o doctora. Su singularidad radica en que la tesis está integrada fundamentalmente por varios trabajos científicos, de los que el doctorando o doctoranda debe acreditar su autoría y que deben haber sido publicados o aceptados para su publicación, en el periodo de tiempo comprendido entre la fecha de su primera matricula en la EIDUNED y la de la autorización de defensa pública de la tesis doctoral.

La regulación de esta modalidad específica de presentación de la tesis por compendio de publicaciones viene a dar respuesta a una demanda razonada de estudiantes y de directores y directoras de tesis y se incardina también en las estrategias de difusión y transferencia científica de la EIDUNED. En consonancia con ello, ya se viene exigiendo para la defensa pública de las tesis en la modalidad de trabajo científico inédito o parcialmente inédito, la realización de una publicación científica previamente a la autorización de la defensa pública, como comprobación de la capacidad investigadora del doctorando o doctoranda.

Esta modalidad de elaboración y presentación de la tesis doctoral mantiene los estándares de exigencia científica aplicados en la EIDUNED a todos los estudiantes y respeta la igualdad entre ellos en la realización de sus estudios predoctorales.

## 1. Ámbito de aplicación, concepto y estructura

La tesis doctoral presentada por compendio de publicaciones estará constituida por un conjunto de trabajos publicados y/o aceptados, justificados por su unidad temática, de acuerdo a la siguiente estructura:

- Introducción en la que se justifique la unidad temática de la tesis.
- Hipótesis y objetivos a alcanzar, indicando en que publicación o publicaciones se abordan.
- Marco teórico en el que se inscribe el tema de la tesis y herramientas metodológicas o remisión a las publicaciones.
- Copia completa de las publicaciones, ya sean publicadas o aceptadas para publicación, donde conste el nombre y adscripción de la autoría y coautoría, en su caso, así como la referencia completa de la revista o editorial en la que los trabajos hayan sido publicados o aceptados para su publicación, en cuyo caso se aportará justificante de la aceptación de la revista o editorial. En todos estos casos siempre deberá constar de forma explícita la filiación del doctorando o doctoranda a la UNED.
- Conclusiones, indicando de qué publicación o publicaciones se desprenden.

- Resúmenes en español y en inglés o, en su defecto, en el idioma habitual para la comunicación científica en su campo de conocimiento científico, técnico o artístico
- Otras aportaciones científicas derivadas directamente de la tesis doctoral.
- Informe con el factor de impacto y cuartil del Journal Citation Reports (SCI y/o SSCI), SCOPUS, Sello de Calidad FECYT o de toda base de datos selectiva y con factor de impacto de referencia del área en el que se encuentran las publicaciones presentadas.
- Fuentes y/o Bibliografía.

La opción de realizar la tesis por compendio de publicaciones debe figurar en el Plan de Investigación de cada año académico.

## 2. Compendio de publicaciones
### 2.1. Clase y número de publicaciones

A los efectos previstos en el apartado anterior, el conjunto de publicaciones que se desprenden del objeto de la tesis doctoral deberá estar constituido por una de las siguientes opciones:

1ª. Un mínimo de 3 artículos (al menos, dos ya publicados y el tercero aceptado) en revistas de índices de impacto en los dos primeros cuartiles de la relación de revistas del ámbito de la especialidad del Programa en el que está inscrita dicha tesis y referenciadas en la última relación publicada por el Journal Citation Reports (SCI y/o SSCI) y de SCOPUS. Todos los artículos deben estar publicados con fecha posterior a la primera matrícula de tutela académica en la EIDUNED. El doctorando o doctoranda debe ser primer firmante o segundo, en este último caso, el primero debe ser el director o directora de la tesis.

2ª. Un mínimo de 4 artículos (al menos, tres ya publicados y el cuarto aceptado) en revistas de índices de impacto en cualquiera de los cuartiles de la relación de revistas del ámbito del Programa en el que está inscrita dicha tesis y referenciadas en la última relación publicada por el Journal Citation Reports (SCI y/o SSCI), SCOPUS y del Sello de Calidad FECYT, o bases de datos relacionadas por la Comisión Nacional Evaluadora de la Actividad Investigadora para los campos científicos correspondientes a las área de conocimiento del Programa de Doctorado y, en su caso, a las específicas líneas de investigación de los mismos. El doctorando o doctoranda debe ser primer firmante o segundo, en este último caso, el primero debe ser el director o directora de la tesis.

Todos los artículos deben estar publicados con fecha posterior a la primera matrícula de tutela académica en la EIDUNED.

3ª. Una monografía y, al menos, un artículo de las características expuestas en la opción 2ª o, como mínimo, tres capítulos de libro y un artículo de las característica expuestas en la opción 2ª, que se deriven directamente de la tesis doctoral. En capítulo de libro, el doctorando o doctoranda debe ser primer firmante o segundo, en este último caso, el primero debe ser el director o directora de la tesis.

Tanto la monografía como los capítulos de libro deben ser estar publicados en editoriales que figuren en la base de datos SPI (Scholarly Publishers Indicators), las citadas, para cada año, por la Comisión Nacional Evaluadora de la Actividad Investigadora u otra base de datos selectiva análoga, indicando el impacto de dicha editorial (se debe adjuntar copia/pantallazo), que debe encontrarse entre las de los dos primeros cuartiles en el listado de las correspondientes al área científica. Si no hubiera tal catálogo, deberían aportarse evidencias contrastadas sobre la posición de la editorial y la calidad de la misma. Se aportarán también otros indicadores de calidad contrastados: recensiones/reseñas críticas publicadas sobre ese libro, nº de citas recibidas, etc. La Comisión Académica del Programa de Doctorado correspondiente y los órganos de la EIDUNED podrán requerir al doctorando o doctoranda un informe o certificado que acredite estos aspectos.

Si se aporta una monografía ésta deberá estar publicada con fecha posterior a la primera matrícula de tutela académica en la EIDUNED; si se aportan tres capítulos de libro, dos de ellos, al menos, deben estar publicados y uno aceptado, bajo certificado de la editorial, con fecha posterior a la primera matrícula de tutela académica.

### 2.2. Certificación de las publicaciones aceptadas

Todas las publicaciones que se presenten aceptadas y en fase publicación, deberán estar avaladas por un certificado de la Revista o editorial en el que conste:

- Para artículos de Revista:
    - el título del trabajo;
    - el nombre del autor o autora y su filiación a la UNED; si hay varios autores, la posición del autor o autora en el elenco de ellos;
    - nombre de la revista, número y fecha de publicación o identificador DOI;
    - índices de calidad de la revista
- Para capítulo de libros colectivos:
    - el título de la obra y título del capítulo aportado;

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▪ el nombre del autor o antora y su filiación a la UNED.
▪ nombre de la editorial, número y fecha de publicación,
▪ índices de calidad de la editorial

El doctorando o doctoranda queda obligado/a a aportar a la EIDUNED y las comisiones académicas de los programas prueba fehaciente de la publicación efectiva de los trabajos que hubieran sido aportados en fase de aceptación y ello en el plazo de un año desde la fecha de defensa pública de la tesis doctoral. El incumplimiento de esta norma podrá dar lugar a la modificación del expediente administrativo del doctorando o doctoranda, conforme a las normas aplicables.

### 3. Autoría y posición en el elenco de autores

El doctorando o doctoranda deberá ser autor o autora única en las monografías; coautor o coautora, hasta un límite de tres autores, en los capítulos de libro, respetando la regla sobre posición de autores arriba indicada; coautor o coautora, hasta un límite de cinco autores, en los artículos de revista, respetando la regla sobre posición de autores arriba indicada.

### 4. Tesis con Mención Internacional

Si la tesis doctoral se presenta con mención internacional, al menos, uno de los artículos en revista o uno de los capítulos de libro, deberá estar editado en revistas y/o editoriales internacionales. Se excluye de esta norma la aportación de una monografía única.

### 5. Tramitación y defensa de la tesis

Para la presentación y para la autorización de su defensa se deberá aportar específicamente la siguiente documentación:

– Aceptación por escrito de las personas que ostenten la coautoría de los trabajos, si los hubiere, de la presentación de los mismos como parte de la tesis doctoral del doctorando o doctoranda.
– Renuncia de las personas que compartan la autoría de los trabajos y que no sean doctores a presentarlos como parte de otra u otras tesis doctorales.

### 6. Reglas complementarias de los Programas de Doctorado

Estas normas se cumplirán en la elaboración, tramitación y defensa de todas las tesis doctorales realizadas en el marco de la EIDUNED. Sin perjuicio de ellas, las Comisiones Académicas podrán establecer exigencias adicionales que serán

publicadas como "Anexos" y gozarán de la misma validez jurídica y obligatoriedad que esta norma general.

Cualquier cambio en estos criterios adicionales deberá respetar los derechos adquiridos por los estudiantes, estableciendo un periodo transitorio de finalización de las tesis ya iniciadas.

### 7. Aplicación normativa

La presente regulación es aplicable a todos los estudiantes de Doctorado matriculados en cualquiera de los Programas gestionados por la EIDUNED.

La elaboración, tramitación y defensa de tesis realizada mediante publicaciones es complementaria de las normas generales sobre tesis doctorales en la EIDUNED y no exime del cumplimiento del resto de la normativa general aplicable en todo aquello que no quede excepcionado por esta norma.

Aquellos estudiantes que provengan de planes extinguidos o en extinción, o hayan comenzado estudios de doctorado en otras universidades, podrán optar entre acogerse a las normas aprobadas por la CID y publicadas con fecha 29 de junio de 2015, o a la normas aprobadas por la EIDUNED, en el Comité de Dirección el 16 de enero de 2017, sin perjuicio del cumplimiento total del resto de requisitos exigidos por la EIDUNED.

### 8. Disposición Transitoria

Los estudiantes que hayan estado matriculados en la Escuela Internacional de Doctorado con anterioridad al curso 2016-2017, período en el que la EIDUNED no había aprobado normas para la presentación de la tesis por compendio de publicaciones, podrán optar entre acogerse a la regulación aprobada por la CID y publicada con fecha 29 de junio de 2015, o a la normas aprobadas por la EIDUNED, en el Comité de Dirección el 16 de enero de 2017, sin perjuicio del cumplimiento total del resto de requisitos exigidos por la EIDUNED.

### 9. Entrada en vigor

Esta norma entra en vigor el día siguiente al su aprobación por la Comisión de Investigación y Doctorado de la UNED, coincidente con su publicación en el espacio web de la EIDUNED.