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## Research Paper

# Online Methodologies and Open Resources for LSP Teacher Education and Professional Development

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## Abstract

This study focuses on online teaching methodologies within the field of languages for specific purposes (LSP) and attempts to identify suitable tools that can be implemented in an online course for LSP teacher education and professional development. Firstly, it defines terms that are relevant to online teaching/learning and discusses the main types of online learning according to their delivery mode. Then, it explores the current provision of online training programmes for preservice and in-service LSP teachers within the European Higher Education Area with a view to gaining a further understanding of the learning gaps and institutional requirements that would need to be covered in a future online course. The next section poses the research questions, explains the methodology that has been applied, and describes the instruments that have been developed. The main results and findings are presented in the third section, and the conclusions that follow suggest the existence of robust online learning methodologies and activities for implementation in online courses aimed at LSP teacher education and training.

**Keywords:** Erasmus+ Projects; LSP Teacher; Moodle; Online Learning; Teaching Methodologies.

## 1. Introduction

The teacher education and professional development of teachers within the field of languages for specific purposes (LSP) is a topic that has been scarcely investigated despite its demanding nature (Basturkmen, 2014) and the increasing demand for these LSP teachers worldwide (Ding & Campion, 2016). Current literature, however, attests that the education and training of LSP teachers is a matter of concern that is worth investigating (Bocanegra-Valle & Basturkmen, 2019; Papadima-Sophocleous, Kakoulli Constantinou, & Nicole Giannikas, 2019; Sowa, 2023; Supunya, 2023), mainly because LSP teachers have specific knowledge and training needs that differ from general language teaching and are not usually covered in language teacher education programmes (Bocanegra-Valle & Perea-Barberá, 2023; Kelly et al., 2004; López-Zurita & Vázquez-Amador, 2023; Tano, 2021). Preparing LSP teachers for the profession is a rather underexplored area and, as the extant literature attests, courses for LSP teachers are largely absent from language teachers' education programmes both within the European Higher Education Area (EHEA; John et al., 2023; Kakoulli Constantinou & Papadima-Sophocleous, 2019) and outside (Kirkgöz & Griffiths, 2023; Xu, Chan, & Yilin, 2020).

This study attempts to raise awareness of the need for courses that aim at providing education and training for language teachers in specific contexts (namely, LSP teachers) and presents an overview of an international project that is currently underway in the field of LSP teacher education and training. LSP Teacher Education Online Course for Professional Development (or LSP-TEOC.Pro) is an Erasmus+ KA203 project whose main objective is to provide student teachers and teachers of LSP with a multilingual online course that will allow them to acquire the competencies needed for a successful implementation of teaching languages in a specific context. This Erasmus+ project builds on the success of the preceding TRAILS project<sup>1</sup> which, in consultation with LSP practitioners across Europe, created a curriculum for LSP teachers and delivered a course in February 2021 (Chateaufreynaud & John, 2023). The LSP-TEOC.Pro project aims



to broaden this curriculum by offering an online course (named LSP-TEOC.Pro course after the project title) that will be multilingual and freely accessible and will target future and early career teachers.

The sections that follow aim to explain the steps taken and the research conducted as a part of the project in an effort to identify what online learning methodologies, activities and tools could be most suitable for the course purposes and most efficiently implemented via educational open resources such as Moodle. In the first section, available digital technologies for online teaching and learning are reviewed and the reasons for an asynchronous course to be eventually designed are explained. Following this, current online LSP courses are briefly examined to discuss the most relevant features of the online course that needs to be designed. The next sections explore those prominent online learning methodologies and technological tools that can be employed to address the education and training needs of LSP teachers and report the methodology and the instruments that have been developed with a view to identifying those online activities and tools that can engage course participants and lead to greater learning achievement.

### 1.1. Digital Technologies for Online Teaching/Learning

There seems to be a consensus in current literature that the use of information and communication technologies (ICTs) for teaching and learning is among the main characteristics of educational systems in the 21st century. Today, online teaching, digital learning, e-learning, Web-based learning, computer-assisted learning, computer-based training, technology-based teaching, distance learning, or virtual learning are widely and increasingly used as interchangeable terms (Sangrà, Vlachopoulos, & Cabrera, 2012; Tsai & Machado, 2002). Likewise, collocating with online, digital, virtual, and the like, the terms learning, teaching, or training may also be interchanged to specify the means of accessing knowledge and the educational practices of ICTs at the intersection of education, teaching, and learning (Friesen, 2009).

There exists a plethora of definitions for the terms above (e.g., Dung, Thang, & Trang, 2023; Jolliffe, Ritter, & Stevens, 2001; QAA, 2020; Sangrà et al., 2012; Stephenson, 2001; Sutton & Basiel, 2014; Tsai & Machado, 2002). Some of them focus on the use of technology for learning; others on the accessibility of resources, or on the results of achievements; another group of definitions relates technology to contexts of communication, interaction, and collaboration (Sangrà et al., 2012).<sup>2</sup> Today, online learning or e-learning encompasses three forms (Ogbonna, Ibezim, & Obi, 2019): Firstly, it is a means of communication because students and teachers can use digital technologies to share resources, coordinate work processes and communicate effectively; secondly, it is used to link theoretical and practical sessions by simulating real-world environments and real-life practices; lastly, it is a general resource involving Internet-based resources and learning management systems used as e-learning platforms. In this study, online teaching and online learning will be used as umbrella terms to refer to teaching and learning with the full assistance of electronic means like the Internet, any learning management system, and related software and media services (intranets, social media, etc.) with the aim of enhancing the learning experience.

One of the benefits of online learning is to afford distance learning and offer flexible solutions for students who cannot attend classes in conventional classrooms. This has been reported to be “especially advantageous for students with hectic schedules or who live in remote areas” (Dung et al., 2023, p. 6). Online courses can be delivered synchronously or asynchronously or they can be used for blended learning:<sup>3</sup>

In synchronous online learning, the teacher delivers the classes mostly through the use of video conferencing (or live chat or instant messaging, according to the literature). The interaction that takes place is similar to teaching a class but facing students behind a computer screen. There is no doubt that the COVID-19 pandemic and the proliferation of videoconferencing providers such as Zoom, Google Meet, or Microsoft Teams have helped teachers all over the world to upgrade their ICTs-related skills for synchronous everyday teaching.

In asynchronous online learning, teaching materials, instructions, activities, and assessment tasks are readily accessible from a computer because they have been previously posted on a platform or learning management system, and learners work through them in their own time, whenever is convenient for them (self-paced learning), and using the tools available (e.g., audio files, URLs, quizzes, surveys). Other forms of asynchronous online teaching are those afforded by Web 2.0 tools (like wikis, blogs or social networking).

Blended (also, hybrid) learning includes both online interaction (either synchronous or asynchronous) and face-to-face elements.

For the purposes of the LSP-TEOC.Pro online course, the clear distinction between synchronous, asynchronous, or blended learning/teaching is of utmost importance. Our target LSP teacher training course will utilize the asynchronous type of instruction so that the course will be available for a period of time, participants can self-enrol and study the content in its entirety, or either enter the course at any stage and follow the learning routes as they wish and at their own pace. Also, students (here course participants that are preservice or in-service teachers) are expected to be self-directed while managing their own learning. They may also take the opportunity to value technologies in their current or future LSP courses, creating uses for them based on their own teaching experience (Bloch, 2013) as well as finding ways for efficient interaction and engagement in an asynchronous learning environment (Eraković & Topalov, 2021). Having these variables in mind, upon project completion the LSP-TEOC.Pro course will be available to the LSP community as an open educational resource implemented in the learning management system Moodle. Moodle (an acronym for Modular Object-Oriented Dynamic Learning Environment) is a free, open-source learning platform which can be customised and tailored to the learning needs of users. Particularly in the field of LSP it has proved to be a very valuable tool (e.g., Knežević, 2018; Martín-Monje & Talaván, 2014).

## 1.2. What Does LSP-TEOC.Pro Have to Offer?

During the first stage of development of the LSP-TEOC.Pro project, desktop research was conducted to find if there was any provision of online training programmes for preservice and/or in-service LSP teachers within the EHEA and, if positive, what its main features were. Following conclusions in Bocanegra-Valle, Bošnjak Terzić, and Kereković (2021), online courses for LSP teacher education and professional development in the EHEA are scant, and the existing offer is very limited not only in course numbers but also in course scope and foreign languages covered. After exploring 532 websites of accredited higher institutions in six countries (Croatia, Germany, Italy, Poland, Slovenia, and Spain) it was found that only 12 institutions (i.e., 2.25%) provided some sort of online LSP teacher training—11 in Spain and 1 in Poland. Bocanegra-Valle et al. (2021) also found that:

- Most of these courses were not part of a degree or a master programme regularly offered by universities, but they were mostly designed for profit.
- Their target participants were both novice and experienced LSP teachers.
- Because Spanish institutions prevailed in the dataset, Spanish for specific purposes was the target foreign language.
- Students could follow these courses both in synchronous and asynchronous ways. Nevertheless, asynchronous tools like the Moodle platform prevailed.
- Entry requirements were varied (the most frequently required degree was a degree in the Spanish language, or any university degree plus a Spanish B2 or C1 certificate).
- The average duration of the course was 40-75 student working hours.
- Certification at the end of the course was not clearly stated online. Just in four cases, ECTS were awarded.

In the wake of these findings, LSP-TEOC.Pro aims to provide future and early-career LSP teachers with a free, multilingual, online course that will allow them to acquire the competencies needed for a successful implementation of teaching languages in a specific context.<sup>4</sup> By the end of 2023 project partners expect to have developed and completed a course for preservice and in-service LSP teachers thanks to which they can develop their knowledge, skills and competences on a number of LSP themes like needs analysis, materials design, assessment, or disciplinary knowledge. Other important features of the course are the following:

- Multilingual: The course will be multilingual, which means that it will be available in nine languages: English, French, Spanish, German, Italian, Slovenian, Croatian, Polish, and Turkish. Participants will be able to follow the course in any of these languages.
- Intercultural: The course will take into account intercultural disparities that may affect any version of the course in one or other language. Partners aim to provide the course with different cultural

perspectives, and this will have an impact upon the course approach, the methodologies, and the activities.

- **Interdisciplinary:** In order to collect best-practice examples and texts for the activities in the course, diverse disciplines (like engineering, business, maritime studies, tourism, law, or medicine) will be taken into consideration from both an academic and a professional focus (i.e., languages for academic or professional purposes).
- **Recognized:** Lastly, digital badges will be included in this online course so that participants will be able to earn partial badges for individual learning modules as long as they complete a number of activities at different levels of progress. Also, a final badge will be earned by those participants that have successfully completed all the activities in all the modules. The implementation of digital badges is expected to lead to greater participant and learning engagement as well as more enhanced motivation.

## 2. This Study

### 2.1. Research Questions

This study seeks to answer the following research questions:

1. What online learning methodologies can be employed to address LSP teacher education and training?
2. What technological tools can be used so that preservice and in-service LSP teachers enjoy the course content and a high student dedication time is achieved?

### 2.2. Methodology

To respond to these research questions, a 9-stage methodology has been followed. Firstly, the existence and availability of online courses across the EHEA were examined (see again the discussion in section 1.2). Secondly, relevant literature pertaining to online learning methodologies, activities and technologies was reviewed in the light of significant examples for practice. Next, a set of learning methodologies, activities and technologies was selected on the basis of the online course requirements and the literature review. After this, a draft table containing such methodologies was developed for discussion and final selection in a later stage.

Simultaneously, a glossary of Moodle terms was compiled with the purpose of being used as a reference document for consultation. In this case, the target tools contained in the glossary were the tools in the Moodle course that were at that time available to all partners for piloting purposes. All the Moodle tools contained in the Glossary were reviewed by project teams in a pair-wise manner. In addition, a survey was administered among all partners with the aim of assessing, on the one hand, the actual use of Moodle in their everyday teaching of LSP courses, and, on the other, their familiarity and expertise with the Moodle tools under review.

With all the resulting information, a course content overview was developed containing modules, topics, learning outcomes, and estimated student dedication time. Next, a final table of online teaching methodologies was created for further use in subsequent project stages (i.e., intellectual outputs). This table, initially inspired by some of the activities in the free course *Take Your Teaching Online* (Open University, n.d.), was deemed to be essential to move forward and develop the self-directed multilingual LSP-TEOC.Pro course. Lastly, an online survey was filled in by all the researchers involved. This survey dealt with LSP teachers' actual use of Moodle for their everyday teaching, and data was collected for analysis and discussion.

### 2.3. Instruments

The examination of results from the preceding work that had been conducted (see again section 1.2) and the review of relevant literature led to the development of five instruments:

Instrument 1 - The course content overview (see Table 1), which lists modules, main topics, distribution, learning outcomes, and student dedication time (SDT).

Instrument 2 - A table of online teaching methodologies (see Figure 1), which contains the course content overview, the desired learning methodologies, the relevant activities, the potential technologies and the Moodle activities and resources that have been found relevant for the target multilingual self-directed course (see also Instrument 5 below).

Instrument 3 - A useful glossary of Moodle terms (see Figure 2). It contains a glossary of 22 Moodle tools (resources and activities) that can be helpful when developing the course content.

Instrument 4 - A general survey on the use of Moodle and its tools that was administered via Google Forms (see Survey 1 in Appendix A). The results from this survey use of Moodle were crucial for the identification of the technology-related challenges to be addressed when developing materials and activities for the course.

Instrument 5 - A specific survey on Moodle tools (including resources and activities) for online learning methodologies, also administered via Google Forms (see Survey 2 in Appendix B). The results from this survey review of Moodle tools were used as part of the content presented in the table of online teaching methodologies (see Instrument 2 above).

### 3. Results

Following discussions within the project consortium, it was agreed that (i) the course length (that is, student dedication time or SDT) should ideally be 40-60 hr, and (ii) each unit should ideally contain the following elements: theoretical input, examples, instructions, practice, and assessment/feedback. Bearing in mind that course participants would complete as many units or modules as they wished and in the order that they wished, a tentative order of modules/units for participants together with tentative SDT for each module were recommended. As shown in Table 1, the course consists of eight modules on a variety of LSP-related topics to be completed in 48 hr:

Table 1. *Overview of Course Content and SDT*

Content Modules	SDT
Module 0 Introduction to LSP	2 hours
Module 1 Needs Analysis	6 hours
Module 2 LSP Course and Syllabus Design	6 hours
Module 3 LSP Communities, Genres, and Corpora	10 hours
Module 4 LSP Teaching Skills	6 hours
Module 5 LSP Materials Evaluation and Design	6 hours
Module 6 Task-/Project-/Problem-Based LSP Teaching/Learning	6 hours
Module 7 LSP Assessment	6 hours
Course Duration	48 hours

Each module consists of three parts, and each part comprises a number of tasks as follows:

Section 1 provides participants with an insight into the theoretical concepts underlying each topic (content module). It consists of an input section (with video lessons), an LSP teacher insight activity (in which experienced LSP teachers from different European countries reflect and share their experience on the target topic), and activities for self-assessment.

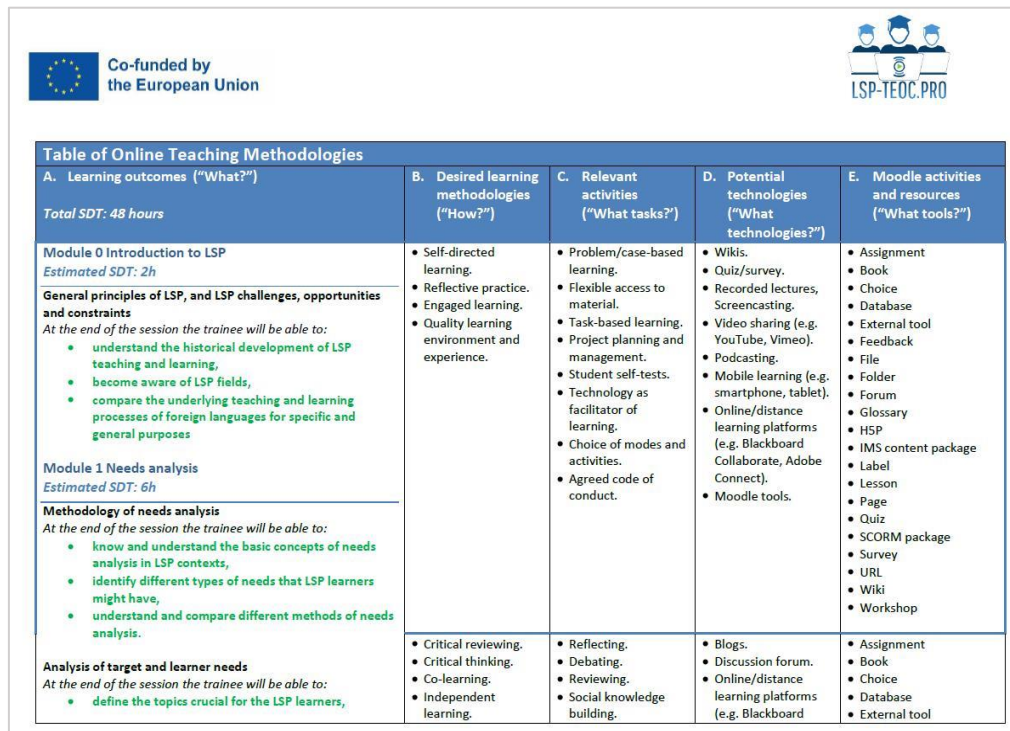
Section 2 provides practice on the topic and takes participants through the content adopting the roles of LSP learners and preservice LSP teachers. Here, they have to complete a number of receptive, production and cognition tasks.

Section 3 provides participants with an opportunity to adopt the role of an in-service LSP teacher and apply the competencies acquired in the previous two sections. Participants are required to add content to the design of a lesson plan and complete a teacher cognition task together with a final assessment activity.

The course overview was included in the table of online teaching methodologies (see Figure 1). This table contains the course content, learning outcomes, SDT, methodologies, activities, technologies and Moodle tools that have been found to be potentially useful and practical for the asynchronous self-directed multilingual course.

Column A lists the modules and main topics to be addressed in the course, together with the expected learning outcomes that trainees (i.e., participants) are expected to achieve at the end of the training session. The learning outcomes are introduced with the phrase: "At the end of the session, the trainee will be able to ...," followed by a varying number

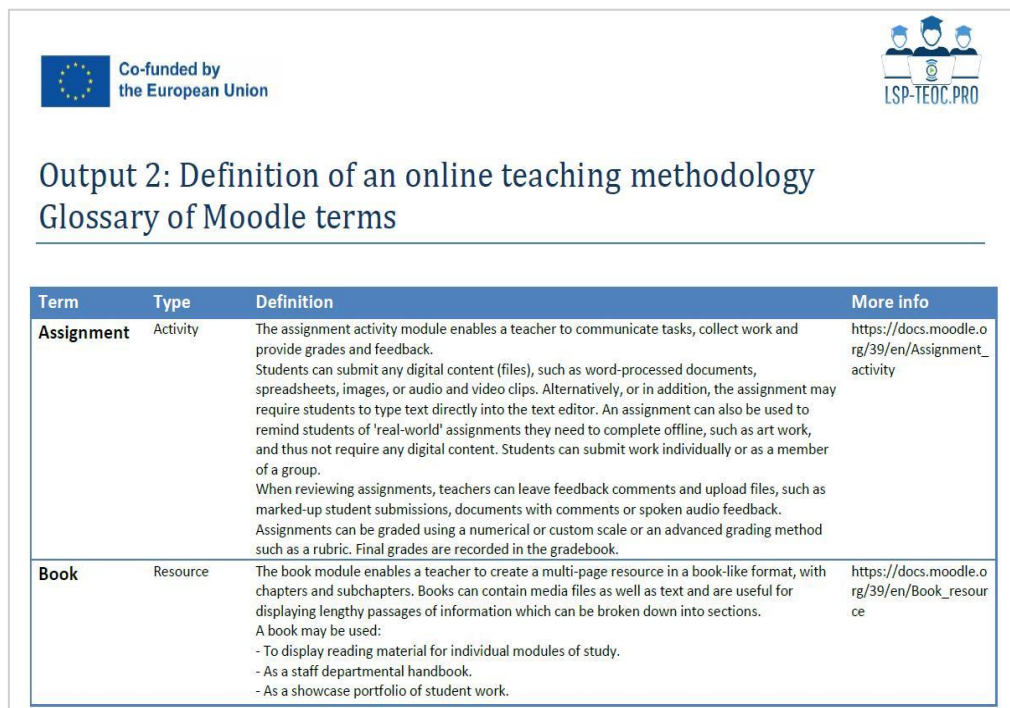
of outcomes depending on the target module. Columns B to E are inventories of teaching/learning methodologies (B), activities (C), potential technologies (D) and Moodle tools (E) from which the relevant ones will be selected for the participants to achieve the learning outcomes (A) defined for each module and topic. Column E lists those Moodle activities and resources (i.e., Moodle tools) that were found to be useful and practical for the learning methodologies (B) according to the results from Surveys 1 and 2 (see Appendix A and Appendix B). As explained above, this table was inspired by some of the activities available in *Take Your Teaching Online* (Open University, n.d.):



The table is titled "Table of Online Teaching Methodologies" and is co-funded by the European Union. It is organized into five columns: A. Learning outcomes ("What?"), B. Desired learning methodologies ("How?"), C. Relevant activities ("What tasks?"), D. Potential technologies ("What technologies?"), and E. Moodle activities and resources ("What tools?"). The table is divided into three sections based on modules: Module 0 (Introduction to LSP), Module 1 (Needs analysis), and Analysis of target and learner needs. Each section lists specific learning outcomes, methodologies, activities, technologies, and Moodle tools.

A. Learning outcomes ("What?")	B. Desired learning methodologies ("How?")	C. Relevant activities ("What tasks?")	D. Potential technologies ("What technologies?")	E. Moodle activities and resources ("What tools?")
<p><b>Module 0 Introduction to LSP</b> Estimated SDT: 2h</p> <p><b>General principles of LSP, and LSP challenges, opportunities and constraints</b> At the end of the session the trainee will be able to:</p> <ul style="list-style-type: none"> <li>understand the historical development of LSP teaching and learning,</li> <li>become aware of LSP fields,</li> <li>compare the underlying teaching and learning processes of foreign languages for specific and general purposes</li> </ul> <p><b>Module 1 Needs analysis</b> Estimated SDT: 6h</p> <p><b>Methodology of needs analysis</b> At the end of the session the trainee will be able to:</p> <ul style="list-style-type: none"> <li>know and understand the basic concepts of needs analysis in LSP contexts,</li> <li>identify different types of needs that LSP learners might have,</li> <li>understand and compare different methods of needs analysis.</li> </ul> <p><b>Analysis of target and learner needs</b> At the end of the session the trainee will be able to:</p> <ul style="list-style-type: none"> <li>define the topics crucial for the LSP learners,</li> </ul>	<ul style="list-style-type: none"> <li>Self-directed learning.</li> <li>Reflective practice.</li> <li>Engaged learning.</li> <li>Quality learning environment and experience.</li> </ul>	<ul style="list-style-type: none"> <li>Problem/case-based learning.</li> <li>Flexible access to material.</li> <li>Task-based learning.</li> <li>Project planning and management.</li> <li>Student self-tests.</li> <li>Technology as facilitator of learning.</li> <li>Choice of modes and activities.</li> <li>Agreed code of conduct.</li> </ul>	<ul style="list-style-type: none"> <li>Wikis.</li> <li>Quiz/survey.</li> <li>Recorded lectures, Screencasting.</li> <li>Video sharing (e.g. YouTube, Vimeo).</li> <li>Podcasting.</li> <li>Mobile learning (e.g. smartphone, tablet).</li> <li>Online/distance learning platforms (e.g. Blackboard Collaborate, Adobe Connect).</li> <li>Moodle tools.</li> </ul>	<ul style="list-style-type: none"> <li>Assignment</li> <li>Book</li> <li>Choice</li> <li>Database</li> <li>External tool</li> <li>Feedback</li> <li>File</li> <li>Folder</li> <li>Forum</li> <li>Glossary</li> <li>H5P</li> <li>IMS content package</li> <li>Label</li> <li>Lesson</li> <li>Page</li> <li>Quiz</li> <li>SCORM package</li> <li>Survey</li> <li>URL</li> <li>Wiki</li> <li>Workshop</li> </ul>
<p><b>Analysis of target and learner needs</b> At the end of the session the trainee will be able to:</p> <ul style="list-style-type: none"> <li>define the topics crucial for the LSP learners,</li> </ul>	<ul style="list-style-type: none"> <li>Critical reviewing.</li> <li>Critical thinking.</li> <li>Co-learning.</li> <li>Independent learning.</li> </ul>	<ul style="list-style-type: none"> <li>Reflecting.</li> <li>Debating.</li> <li>Reviewing.</li> <li>Social knowledge building.</li> </ul>	<ul style="list-style-type: none"> <li>Blogs.</li> <li>Discussion forum.</li> <li>Online/distance learning platforms (e.g. Blackboard</li> </ul>	<ul style="list-style-type: none"> <li>Assignment</li> <li>Book</li> <li>Choice</li> <li>Database</li> <li>External tool</li> </ul>

Figure 1. Sample Page of Table of Online Teaching Methodologies



The table is titled "Output 2: Definition of an online teaching methodology Glossary of Moodle terms" and is co-funded by the European Union. It lists two Moodle terms: "Assignment" and "Book". Each term includes its type, a detailed definition, and a link to more information.

Term	Type	Definition	More info
Assignment	Activity	<p>The assignment activity module enables a teacher to communicate tasks, collect work and provide grades and feedback.</p> <p>Students can submit any digital content (files), such as word-processed documents, spreadsheets, images, or audio and video clips. Alternatively, or in addition, the assignment may require students to type text directly into the text editor. An assignment can also be used to remind students of 'real-world' assignments they need to complete offline, such as art work, and thus not require any digital content. Students can submit work individually or as a member of a group.</p> <p>When reviewing assignments, teachers can leave feedback comments and upload files, such as marked-up student submissions, documents with comments or spoken audio feedback.</p> <p>Assignments can be graded using a numerical or custom scale or an advanced grading method such as a rubric. Final grades are recorded in the gradebook.</p>	<a href="https://docs.moodle.org/39/en/Assignment_activity">https://docs.moodle.org/39/en/Assignment_activity</a>
Book	Resource	<p>The book module enables a teacher to create a multi-page resource in a book-like format, with chapters and subchapters. Books can contain media files as well as text and are useful for displaying lengthy passages of information which can be broken down into sections.</p> <p>A book may be used:</p> <ul style="list-style-type: none"> <li>- To display reading material for individual modules of study.</li> <li>- As a staff departmental handbook.</li> <li>- As a showcase portfolio of student work.</li> </ul>	<a href="https://docs.moodle.org/39/en/Book_resource">https://docs.moodle.org/39/en/Book_resource</a>

Figure 2. Sample Page of Glossary of Moodle Terms

Alongside this table of online teaching methodologies, a glossary of Moodle terms (see Figure 2) was compiled with the aim of providing all partners with a document that could offer: clear explanations of each Moodle activity and resource (i.e., Moodle tool); definition of each Moodle activity and resource; their usefulness and suitability for the LSP-TEOC.Pro course; their uses and affordances; and useful links for further reference. Twenty-two Moodle tools were annotated and explored in this glossary, in particular:

- a) Fifteen activities: assignment, chat, choice, database, external tool, feedback, forum, glossary, H5P, lesson, quiz, SCORM package, survey, wiki, and workshop
- b) Seven resources: resource, file, folder, IMS content package, label, page, and URL

Surveys 1 and 2 focused on the use of Moodle as the open-source learning management system selected for this asynchronous self-directed multilingual course. Besides helping to feed content into the table of online teaching methodologies (see Figure 1, column E), these surveys aimed at finding responses to the second research question: What technological tools can be used so that preservice and in-service LSP teachers enjoy the course content and a high student dedication time is achieved?

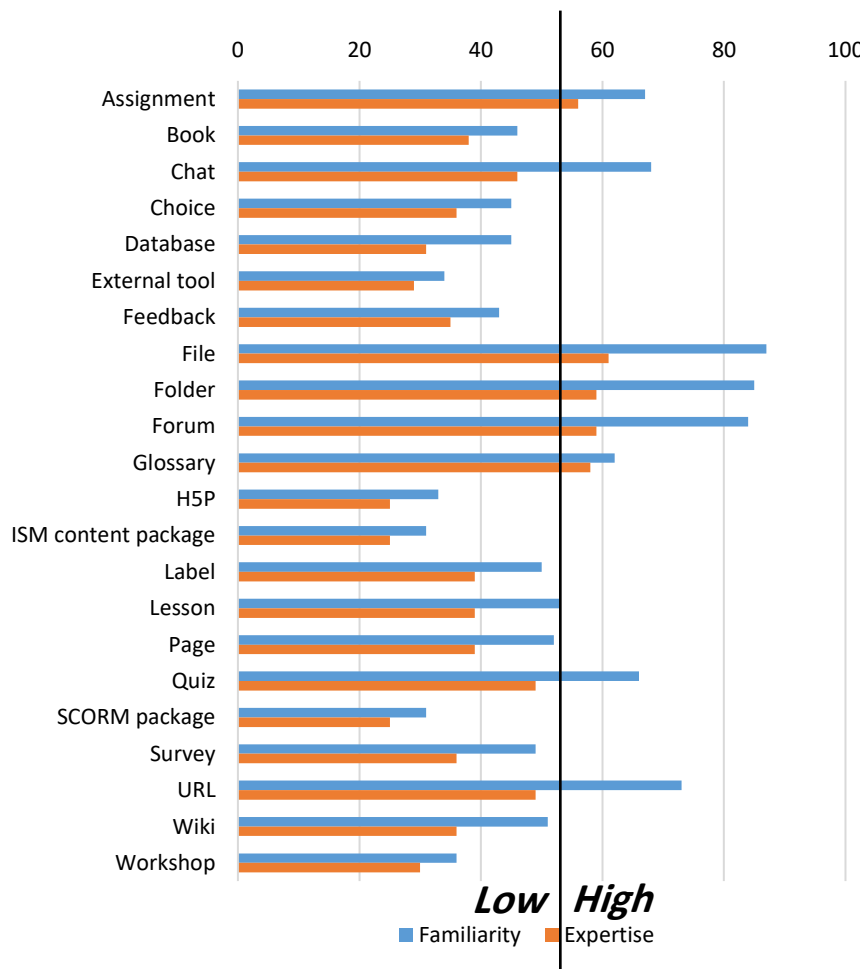


Figure 3. Level of Familiarity and Expertise With Moodle Tools

Survey 1 on the use of Moodle and its tools (see Appendix A) showed that the project partners never (17.4%), seldom (21.7%), sometimes (21.7%) or very often (39.1%) use Moodle in their everyday LSP teaching. More importantly, they evaluated themselves as somehow (not very) expert in the use of five out of twenty-two tools (i.e., assignment, file, folder, forum, and glossary). Also, they claimed to be “more familiar with” than “expert in” most Moodle tools. Figure 3 shows these results: the majority of replies fall within the first half of the graph, which means that the level of familiarity and expertise of the partners with these tools is generally low—the mean score was set at 55. These findings concur with previous studies in the field which found that most LSP teachers have a positive attitude towards the use of ICTs and are

willing to implement them into their teaching but they need to become more proficient in using these tools for actual classroom implementation (Dashtestani & Stojkovic, 2015; Dogoriti & Pange, 2012; Kakoulli Constantinou & Papadima-Sophocleous, 2021).

Regarding the effective integration of particular Moodle tools in the Moodle platform for the LSP-TEOC.Pro course (see Appendix B, Survey 2, Question 7), five tools were found to be inconvenient given the features of this particular course (i.e., assignment, chat, external tool, survey, and workshop). The remaining tools were found to be convenient or very convenient.

With reference to SDT (see Appendix B, Survey 2, Question 10), eight tools were found to clearly involve low dedication time from course participants (i.e., choice, forum, glossary, H5P, label, SCORM package, survey, and URL). Thirteen tools were rated in the medium dedication time range, more specifically: medium-low (chat and folder), medium-high (assignment, book, and page), or medium dedication time (database, external tool, feedback, file, quiz, SCORM package, URL, and wiki).

Lastly, six tools would involve high dedication time from participants, namely: forum, IMS content package, lesson, SCORM package, URL, and workshop. It stands out that some tools (like forum) were perceived as involving both high and low dedication time depending on the ways they were to be implemented in the self-directed course—that is, what type of activities such tools would be used for.

Questions 11 to 13 in survey 2 (see Appendix B) aimed to identify which Moodle tools provided students with enjoyable content-related activities, which Moodle tools would lead to an effective and amusing learning experience, and which of them would be practical tools for the LSP-TEOC.Pro course. Learner engagement is a relevant drive in the design and development of an online course because it enhances learner achievement, learner retention, and personal development (Eraković & Topalov, 2021; Oncu & Cakir, 2011). Tables 2 to 4 show the results for each case:

Table 2. *Tools That Provide Enjoyable Activities*

Q11. Would this tool provide the students with enjoyable content-related activities?	
Yes ( $n = 11$ )	Assignment, book, choice, database, H5P, IMS content package, label, quiz, SCORM package, URL, workshop
No ( $n = 3$ )	Feedback, survey, wiki
Not necessarily ( $n = 11$ )	Chat, external tool, file, folder, forum, glossary, lesson, page, SCORM package, URL, wiki

Table 3. *Tools That Lead to an Effective and Amusing Learning Experience*

Q12. Would this tool lead to an effective and amusing learning experience?	
Yes ( $n = 12$ )	Assignment, book, choice, feedback, folder, glossary, H5P, label, quiz, SCORM package, URL, workshop
No ( $n = 3$ )	Feedback, survey, wiki
Not necessarily ( $n = 10$ )	Chat, database, external tool, file, forum, IMS content package, lesson, SCORM package, URL, wiki

Table 4. *Tools That Are Practical for the Target Course*

Q13. How would you rate this tool regarding the multilingual scope of our LSP-TEOC.Pro course?	
Not at all practical ( $n = 4$ )	Chat, external tool, survey, workshop
Slightly practical ( $n = 4$ )	Assignment, glossary, IMS content package, SCORM package
Moderately practical ( $n = 9$ )	Book, forum, glossary, H5P, IMS content package, label, lesson, page, wiki
Very practical ( $n = 5$ )	Database, folder, quiz, SCORM package, wiki
Extremely practical ( $n = 4$ )	Choice, feedback, file, URL

An important finding from this data is that it is challenging to rate tools as absolutely practical or effective or enjoyable. Tools are not per se practical, effective, or enjoyable; it all depends on what teaching/learning goals are set, what we do with the tools, and how we implement them in the LSP-TEOC.Pro course—compare, for example, wiki in Tables 2-4, which has respectively been rated as nonprovider of enjoyable content (see Table 2), neither effective nor amusing (see Table 3), and moderately practical for the target course (see Table 4). The comments below for the tool assignment, given by project partners after the reviewing process required by Survey 2, illustrate this challenge:



Being a self-directed course, we are not sure to what extent teachers will be involved to give feedback. Thus, assignments are certainly crucial to any course, but in this case, other activities will be more appropriate.

Group assignments are also generally very useful, but, given the nature of the LSP-TEOC course, it would not be easy and practical for students to organize that themselves.

Comments above show concern about the ways tools impinge on the usefulness, suitability and efficiency of the asynchronous, self-directed, multilingual course. Similarly, teachers will require different skills depending on whether they are teaching online or face-to-face, and their role should be assessed. Also, activities will require different technological tools depending on what learning objectives need to be reached and how learning materials will be provided.

Lastly, and in view of the answers to questions 5 and 6 in the second survey (see Appendix B), a number of Moodle tools and activities were found apt to provide feedback and assessment. In particular, the methodologies (a) formative assessment could be attained by means of feedback, file, folder, quiz, SCORM package, survey, or workshop; and (b) assessing learning could be attained by means of assignment, choice, feedback, file, folder, quiz, SCORM package, survey, or workshop. Likewise, the activities, (a) give and receive feedback could be attained by means of assignment, chat, database, feedback, forum, glossary, quiz, or survey; and (b) immediate feedback about performance could be attained by means of assignment, chat, choice, feedback, folder, or quiz. This means that both assessment and feedback in the LSP-TEOC.Pro course can be covered by diverse tools—hopefully providing the course with greater variety and enjoyment.

#### 4. Discussion and Conclusion

This study has placed emphasis on (i) the review of methodologies and technological tools that have been found to be especially useful in the design of an online course for LSP teacher education and professional development; and (ii) the discussion of those elements that are deemed to be transferable to the online course. A set of guidelines on the structure of the online course (i.e., development of a course content framework) has also been provided. The use of technologies and Moodle tools for online teaching has been explored, with a particular focus on the facilitation of learning in an asynchronous, self-directed, self-paced, multilingual online environment. Five instruments have been designed: a course overview, an online learning methodologies table, a glossary of Moodle tools, and two surveys (on the use of Moodle and its tools). Among these, the course overview, the table, and the glossary are expected to be particularly useful in the next stages of the project when the course content is actually developed.

The main results have shown relevant findings with regard to the use of online learning methodologies in general, and the use of Moodle and its tools in particular. They have also supported the claim that online teaching incorporates “ecosystems of networked communities and varieties of learning resources” (Ogbonna et al., 2019, p. 3).

Project teams show different levels of expertise and familiarity with the use of Moodle—a generally low level prevails, affecting 18 out of 22 (81.8%) tools. The fact that LSP trainers in this project are not fully Moodle-competent reveals that project partners (current LSP teachers) need training and practice in varying degrees. It also supports the findings that (i) technology literacy is an essential part of LSP teachers’ knowledge (Supunya, 2023), (ii) LSP teachers are in general positively oriented towards ICTs-related training with education purposes (Dashtestani & Stojkovic, 2015; Dogoriti & Pange, 2012), and (iii) teachers’ training programs improve students’ learning processes (Kakoulli Constantinou & Papadima-Sophocleous, 2021; Khabibullina et al., 2019).

The wide range of online learning methodologies contained in the resulting table of online teaching methodologies shows that multiple and varied instructional methods can be integrated into an asynchronous self-directed multilingual course. Nevertheless, specific learning methodologies require specific technologies, activities and tools. This is particularly important if the course aims at meeting LSP teachers’ learning styles or the ways they can process information in learning situations (Ahmadi, 2015). By way of example, the learning methodology reflective practice can be attained through problem/case-based learning, task-based learning, or project planning and management, using technologies such as screencasting, wikis, podcasting, or recorded lectures, and specific Moodle tools like assignment, feedback, wiki, workshop, quiz, or survey. It is possible to identify particular tools that can or cannot be integrated in the Moodle platform of this LSP-TEOC.Pro course. Likewise, it is possible to identify specific Moodle tools that involve

high, medium or low student dedication time, those that can lead to an effective and enjoyable learning experience, and those that can be more efficient and practical regarding the multilingual scope of the target course.

Some practical tools (e.g., themes, EdPuzzle, Game, or Attestoodle) have been perceived to be missing in this course Moodle system. These, and probably others that the project partners have not been aware of, should be considered for addition to the system (new plug-ins) by the institution responsible for the learning management system implementation.

Regarding the specific task of providing students with feedback and assessment during the course, it has been found and agreed that not only feedback and quiz are assessment-related tools. Learning can be assessed and feedback can be provided by means of other Moodle tools like assignment, survey, or workshop. Assessment and feedback are relevant for the course in that they can be effective predictors of participants' engagement in the learning process (Asadi, Azizinezhad, & Fard, 2017).

Upon completion of this study, it has become clear that there is no one-for-all online methodology or technology, and that the "it-depends" variable prevails: which methodology and which tool need to be used will depend on the course content, SDT, expected learning outcomes, or teachers' expertise regarding ICTs. Therefore, the level of enjoyment, usefulness or dedication time will vary depending on course design and implementation. It has also become clear that further discussion of course content is needed—particularly if LSP teachers' participation, engagement and involvement need to be achieved. The asynchronous variable, multilingual target, and self-directed nature of the online course are three significant challenges that have an impact on learning methodologies, course content development, material design, feedback provision, and Moodle tool choice.

Defining "the one and only" online teaching methodology has not been possible, but this study has found practical pointers for LSP teacher education and training. Teachers across different countries in Europe have jointly reflected on the lack of LSP teacher education programs and courses across the EHEA and have found common knowledge- and training-related necessities that are worth covering in a potential LSP teacher education course. To this effect, LSP-TEOC.Pro can serve as a model for the development of similar courses outside Europe, enhancing the content to include other modules or more specific activities that are relevant to particular institutions, extending its scope to other specialized foreign languages, or tailoring the course to more specific teacher groups (e.g., student teachers). It has also been suggested that if LSP teachers aim at integrating digital skills into their teaching, they first need to become proficient in handling the diverse tools that are currently available to them (via Moodle or any other open resources they will be using in their everyday teaching). For this purpose, preservice and in-service LSP teachers are advised to develop their digital skills by focusing on digital linguistic, digital technical, digital multimedia, and telecommunication competencies (Biletska et al., 2021). Foreign language teachers need opportunities to advance their digital skills, and by becoming cognizant of courses such as the one presented in this study, they can hopefully gain awareness of the online methodologies and tools that are required for the digitalization of teacher education and the adoption of technology-based educational practices in the field of LSP.

## Notes

<sup>1</sup>TRAILS stands for LSP Teacher Training Summer School. It was an Erasmus+-funded project developed between October 2018 and March 2021 (Ref. 2018-1-FR01-KA203-048085). For more information, see the volume edited by Chateaufreynaud and John (2023).

<sup>2</sup>For a straightforward list of digital learning-related terms, refer to the glossary developed by The Quality Assurance Agency for Higher Education (see QAA, 2020, pp. 11-16).

<sup>3</sup>For a comprehensive literature review of the use of technology for the teaching of English for Specific Purposes (and therefore also applicable to LSP), see Dashtestani and Stojkovic (2015).

<sup>4</sup>More information about the project can be found at <<https://lsp-teoc-pro.de>>.

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## Conflict of Interest

The author declares that there is no conflict of interest.

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## Appendices

### Appendix A

#### Survey 1: Use of Moodle

Some project teams have assessed a number of Moodle tools and activities currently available on our LSP-TEOC.Pro Moodle course. We would like to hear all partners regarding their familiarity and expertise with these tools/activities before our training week.

1. Please, tick your LSP-TEOC.Pro organisation \*

Arcola	Jade
Bergamo	Poznan
Bordeaux	Ljubljana
Cadiz	Pforzheim
Cukurova	Zagreb

2. Do you use Moodle in your everyday teaching? \*

1 Never    2 Sometimes                      3 Usually                      4 Often                      5 Very often

3. How familiar are you with these Moodle tools and activities? Please, tick as appropriate \*

Not at all familiar - Slightly familiar - Somewhat familiar - Moderately familiar - Very familiar

Assignment	HSP
Book	ISM content package
Chat	Label
Choice	Lesson
Database	Page
External tool	Quiz
Feedback	SCORM package
File	Survey
Folder	URL
Forum	Wiki
Glossary	Workshop

4. How expert are you with these Moodle tools and activities? Please, tick as appropriate \*

Not at all expert - Slightly expert - Somewhat expert - Moderately expert - Very expert

[Same tools and activities as above to be rated]

5. Would you add any other Moodle tool or activity to those above? If so, please provide details, so that a request for new plug-ins can be submitted to the project coordinator.

### Appendix B

#### Survey 2: Review of Moodle tools

(Note: This survey was filled in by all project participating organizations according to a preplanned distribution of Moodle tools).

Consider your particular tool / resource to fill in this survey. Always bear in mind our LSP teacher online multilingual self-directed course for professional development (LSP-TEOC.Pro) and think of content and options for potential use. Remember that your tool needs to be examined in terms of applicability and usefulness.

1. Reviewer 1 / Participating organization:                      Date of Review 1:

Reviewer 2 / Participating organisation:                      Date of Review 2:

2. Tool package reference:                      Name of tool:

3. Are you already familiar with this tool? Have you used it in your teaching? Any comment on this tool as based on your experience?

4. This tool has been defined in the Moodle Glossary prepared by the UCA team. Is there anything else you would like to add to that definition? Please, explain so that your text can be added to the final Glossary of Moodle terms.

5. Regarding desired learning methodologies (Column B of the online methodologies table), this is a tool for ... (tick as appropriate; more than one option may be possible):

- |   |                                |
|---|--------------------------------|
| Self-directed learning                      | Independent learning           |
| Reflective practice                         | Synthesis of learning          |
| Engaged learning                            | Apply learning (at high level) |
| Quality learning environment and experience | Formative assessment           |
| Critical reviewing                          | Assessing learning             |
| Critical thinking                           | Other: Please explain ...      |
| Co-learning                                 |                                |

6. Regarding relevant activities (Column C of the methodologies table), this is a tool for ... (tick or highlight as appropriate; more than one option may be possible):

- |                                       |   |
|---------------------------------------|---|
| Problem/case-based learning           | Social knowledge building                 |
| Flexible access to material.          | Review of / commentary on online material |
| Task-based learning                   | Give and receive feedback                 |
| Project planning and management       | Experience 'authentic' practice           |
| Student self-tests                    | Project-based learning                    |
| Technology as facilitator of learning | Problem/case-based learning activities    |
| Choice of modes and activities        | Global simulation                         |
| Agreed code of conduct                | Self-assessment                           |
| Reflecting                            | Student self-tests                        |
| Debating                              | Immediate feedback about performance      |
| Reviewing                             | E-portfolio                               |
| Other: Please explain ...             |   |

7. Can this tool be integrated in the Moodle platform of our LSP-TEOC.Pro course?

8. If yes, how can this be achieved? What are the advantages? Please, provide one best practice example for potential use.

9. If not, please explain why this tool does not suit LSP-TEOC.Pro purposes. Provide an example if possible.

10. In your view, would this tool involve high, medium or low student dedication time?

11. Would this tool provide the students with enjoyable content-related activities?

12. Would this tool lead to an effective and amusing learning experience?

13. How would you rate this tool regarding the multilingual scope of our LSP-TEOC.Pro course?

Not at all practical - Slightly practical - Moderately practical - Very practical - Extremely practical

14. Can the resulting material integrated in this tool be prepared in a way that is efficiently adapted into a multilingual online platform? Or, on the contrary, can you identify any problems or caveats when it comes the time to use this tool for teaching in a language different from English?

15. Would you add any other tool to those available at our LSP-TEOC.Pro course? If so, please provide details so that a request for new plug-ins can be submitted to the project coordinator.

16. Any other comments?



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