



Principles of teacher professional development and digital lexicographical skills for designing in-service training modules

Principios de desarrollo profesional docente y habilidades lexicográficas digitales para el diseño de módulos de formación continua

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Abstract

English as a foreign language teachers often use free access online bilingual dictionaries (FAOBD) to plan their lessons but rarely utilize these dictionaries as didactic resources. This paper outlines the design process, and theoretical foundations involved in designing an in-service teacher module, a byproduct of a multiple case study research, aimed at equipping tertiary EFL educators with the necessary conceptual and procedural knowledge to use these digital lexicographical tools. Data collected from a questionnaire, a semi-structured interview, and an online course evaluation form, applied to a sample of four teachers from a Colombian university, revealed scant teacher training and institutional support, limited motivation to use FAOBDs among teachers and students, and a high incidence of look-up errors. These results underscored the need for the training module. Addressing users' perspectives, teacher training needs, and leadership support is fundamental to optimizing FAOBD use through enhanced lexicographical skills development.

Keywords: Dictionary skills; English as a foreign language; Language teaching; Online bilingual dictionaries; Teacher training

Resumen

Los profesores de inglés como lengua extranjera suelen utilizar diccionarios bilingües en línea de libre acceso (DBLLA) para planificar sus lecciones, pero rara vez utilizan estos diccionarios como recursos didácticos. Este artículo describe el proceso de diseño y los fundamentos teóricos involucrados en el diseño de un módulo para docentes en servicio, un subproducto de una investigación de estudio de casos múltiples, cuyo objetivo es equipar a los educadores terciarios de inglés como lengua extranjera con el conocimiento conceptual y procedimental necesario para utilizar estas herramientas lexicográficas digitales. Los datos recabados de un cuestionario, entrevistas semiestructuradas y un formulario de evaluación de cursos en línea, aplicados a una muestra de cuatro docentes de una universidad colombiana, revelaron escasa capacitación docente y apoyo institucional, limitada motivación para utilizar los DBLLA entre docentes y estudiantes, y una alta incidencia de errores de búsqueda. Estos resultados subrayaron la necesidad del módulo. Abordar las perspectivas de los usuarios, las necesidades de capacitación de los docentes y el apoyo al liderazgo es fundamental para optimizar el uso de los DBLLA mediante un mejor desarrollo de habilidades lexicográficas.

Palabras clave: Diccionarios bilingües en línea; Enseñanza de idiomas; Formación docente; Habilidades de consulta de diccionario; Inglés como lengua extranjera

INTRODUCTION

Research highlights the growing necessity to adopt Information and Communication Technologies (ICT) in English as a Foreign Language (EFL) classroom to enhance teaching practices (Dedja, 2015; Haswani, 2014; Muslem & Juliana, 2018). The rapid advancements in technology have prompted English as a foreign language (EFL) teachers to adopt various ICT-mediated methods, like Mobile Learning (M-learning), to provide flexible, ubiquitous language learning experiences through portable devices (Hwang et al., 2008). One of these devices, the smartphone, allows face-to-face or distant foreign language learning situations (Khodabandeh et al., 2017). As the acquisition and the use of mobile phones among the student population have escalated, so has the use of a variety of apps in EFL classes. However, the unplanned and unmanaged use of these technologies underscores the need for targeted in-service teacher training to ensure effective ICT integration and language skills development.

Two digital tools gaining popularity among EFL students due to increased smartphone use are online translators and, to a lesser extent, free access online bilingual dictionaries (FAOBD). Despite positive feedback from university teachers on the use and benefits of FAOBD in teaching as a foreign language (TEFL) environment, there remains significant reluctance to integrate these tools into lessons (Buitrago, 2018). This resistance is often attributed to teachers' lack of confidence with technology and concerns about losing control and respect in the classroom. The core issue, however, is a deficiency in theoretical and methodological knowledge needed for the systematic and effective use of FAOBD as teaching aids. Additionally, while bilingual dictionaries' relevance in foreign language learning is well-documented, the specific characteristics and potential of the FAOBD as emerging digital didactic tools require further investigation.

This research aims to explore the structure, functionalities, and use requirements of free access online bilingual dictionaries (FAOBD) to enhance their integration into EFL instructional design. One key objective was to identify factors facilitate and hinder this integration and to develop targeted administrative, pedagogical, and didactic proposals. A significant barrier identified was the lack of teacher training, which necessitated the creation of a professional development program. Although there was agreement on the need for didactic lexicographical training, the specific content and kind of expected training were unclear. This gap guided the development of three data-gathering instruments to collect input on the desired training content and format.

The research highlighted the need for a short, engaging, self-paced training module to help teachers explore and effectively use FAOBD functions. This module aims to increase FAOBD usage in TEFL settings and address common look-up errors identified in the data analysis. This paper outlines the design process of the training module, including its theoretical background, research design, and data-gathering methods. It then discusses findings related to module design and contributions from various ICT integration models. Finally, the paper presents the module's administrative, lexicographical, and didactic considerations, its overall structure, and its implications for FAOBD integration in the curriculum.

LITERATURE REVIEW

ICT in TEFL

Technological advances have significantly impacted education, including Teaching English as Foreign Language (TEFL). Thus, TEFL must adapt to these changes and meet the needs of both educators and students (Dedja, 2015). Research highlights the relevance of ICT in TEFL (Chen, 2012; Kern, 2006; Kopinska, 2013; Levy & Hubbard, 2005; Tri & Nguyen, 2014) as aids that promote collaborative, meaningful, and respectful learning, cater to diverse learning styles., provide access to authentic and updated materials and transform the traditional teaching roles (Golonka et al., 2014). ICT integration in TEFL is crucial to enhance linguistic and intercultural skills and teaching practices through digital resources (Dedja, 2015).

Emerging trends like Mobile Learning (M-Learning) and Mobile Assisted Language Learning (MALL) leverage new ICT tools, such as online bilingual dictionaries, to support language learning (Jin & Deifell, 2013). FAOBD can be particularly useful in EFL if teachers are trained to integrate them effectively (Buitrago, 2018).

Despite the widespread use of smartphones among students (Crompton & Burke, 2018), teachers often hesitate to use these devices in teaching due to inadequate training and lack of policy support to implement M-learning (Gure, 2016). Smartphones, with their portability and various functions to access, record, produce and disseminate content, are pivotal M-learning devices (GATE, 2013). Their portability and accessibility facilitate their use from any public or private place with an internet connection. These mobile devices offer opportunities for continuous, interactive, experiential, innovative, ubiquitous and targeted learning experiences and linguistic development (Cui & Wang, 2008; Klimova, 2019).

A lack of institutional and teacher clarity regarding the purposes and scope of M-learning can diminish its effectiveness. Successful M-learning strategies necessitate adapting content and resources to help students view mobile devices and digital resources as valuable learning assets. Proper M-learning implementation may grant the continuity of innovative teaching initiatives and, enhanced learning outcomes (Guevara, 2016).

The implementation of M-learning in TEFL contexts brought about the emergence of Mobile Assisted Language Learning (MALL) and of various stand-alone and coursebook-related apps designed for language learning (Hockly, 2013). MALL utilizes smartphones and other portable devices to provide access to extensive learning resources, promoting self-paced and individualized learning (Klimova, 2019; Yaman & Ekmekci, 2017). To optimize M-learning implementation, it is essential to tailor digital materials to specific learning tasks and to explore strategies such as collaborative learning, game-based learning, simulation, and content dissemination. Additionally, shifting teacher attitudes toward the use of portable devices is fundamental (Cui & Wang, 2008; Guevara, 2016; Hockly, 2013).

Institutions must also develop policies and guidelines to support the integration of various M-learning strategies and devices. In summary, both institutional and educator perspectives and their readiness to pedagogically incorporate M-learning significantly impact student's learning outcomes.

Online bilingual dictionaries

Online dictionaries, cyberdictionaries, web dictionaries, digital dictionaries, E-dictionaries, or internet-based dictionaries (Chiu & Liu, 2013; Mohamad et al., 2017; Pasfield-Neofitou, 2009; Schmied, 2009) are dictionaries that can be accessed, downloaded and consulted through the Internet (Schmied, 2009) by typing a word to obtain its definition or another type of information (Chiu & Liu, 2013). Pasfield-Neofitou (2009) notes that their translation function is often perceived by the students as an easy-to use and time-reducing tool for tasks such as reading, drafting and blogging. FAOBDS offer additional features compared to printed and electronic dictionaries, such as the ability to copy and paste information.

The rapid transition from print to digital dictionaries has been driven by technological advances over the past few decades (Lew, 2015; Lew & Galas, 2008). This shift has led to the digitalization of renowned printed dictionaries like *American Merriam-Webster's Collegiate Dictionaries*, *The American Heritage Dictionary of the English Language*, *Encarta World English Dictionary*, and *The Oxford*

English Dictionary (Yongwei, 2012). This dictionary digitalization has increased the offer of lexicographical resources. Yongwei (2012) categorizes into three types: clicks-and-mortar dictionaries (digital versions of printed dictionaries), one-stop dictionary sites or dictionary aggregators (which offer a variety of languages, subjects, thesaurus, glossaries, and search functions), like *Dictionary.com*, *TheFreeDictionary.com*, *MyDictionary.com*, and *WordReference.com*, and DIY dictionaries (editable, user-contributed entries) which seldom have an editorial team.

WordReference deserves special mention as is a recommended learning resource in the instructional design of the English courses taught by the participants. Mike Kellogg, the developer of *WordReference*'s, and Dr. Robert Lew, a scholar from Adam Mickiewicz University, further classified this FAOBD in email correspondence. Kellogg equated the terms "translation dictionary" and "bilingual dictionary" in describing his product, while Lew defined it as a digital lexical tool or online lexical database, classifying it as a bilingual dictionary when focusing on specific language-pairs.

The growing popularity of these free digital dictionaries among students as lexical reference tools, far surpasses that of print or traditional dictionaries. FAOBDs, in particular, offer extensive information and easy access. These advantages have motivated publishers to capitalize on the digital medium by launching their own online dictionaries (Burada & Sinu, 2009). Despite being a relatively new ICT, there is already considerable research on its characteristics, usage, strengths, and weaknesses (Burada & Sinu, 2009; Chiu & Liu, 2013; Chun, 2004; Jin & Deifell, 2013; Lew, 2015; Lukáč, 2011; Yongwei, 2012).

Online bilingual dictionary use issues and requirements

Effective online bilingual dictionary searches require the explicit teaching and acquisition of both linguistic and lexicographical skills that consider the users' perspectives and the demands of the digital medium (Egido & Meliss, 2017; Lew & Galas, 2008). Look-up errors when using FAOBDs are not always due to limited lexicographical information. Often, these errors stem from a lack of dictionary skills training, leading to the incorrect interpretation of the retrieved information (Egido & Meliss, 2017; Lew & Galas, 2008). Fan-ping Tseng (2009), who studied the look-up behavior of EFL high school students using *Yahoo!* online dictionary, identified specific types of errors:

- Incorrect selection of the grammatical function of the entry.

- Correct selection of the grammatical function of the input, but with incorrect definition or sense.
- Selection of multiple definitions, both correct and incorrect, due to uncertainty.
- Inability to find the appropriate definition due to unavailability in the dictionary.

To ensure that FAOBD users can effectively access and utilize their information and integrations, teachers require training on online lexicography didactics. This training should focus on developing the following dictionary reference skills to enhance the use of these lexical tools in the TEFL context (Egido & Meliss, 2017; Lew & Galas, 2008):

- Selecting the appropriate online bilingual dictionary based on the language learning situation
- Locating the searched word in the foreign language.
- Disambiguating words at the morphological, syntactic, semantic, syntagmatic-combinatorial, and pragmatic levels.
- Choosing and using the best equivalent, definition, and spelling in specific communicative situations in the target language
- Acquiring and interpreting grammatical and lexical information.
- Understanding dictionary conventions, features, and layout.

Egido and Meliss (2017) emphasize that users must be able to identify both linguistic and extralinguistic information provided by FAOBDs in terms of form, content, and use to fully exploit these dictionaries' functionalities. Achieving this requires students to acquire the necessary skills and background knowledge as part of their lexicographical competence in the foreign language. These competencies should specifically address the difficulties students' face when searching, interpreting, and applying lexicographical information. To overcome these challenges when using FAOBD, Tseng (2009) and Egido and Meliss (2017) recommend the following didactic and lexicographical strategies:

- Teaching students how to select the appropriate meanings within a dictionary entry, particularly for polysemous words.

- Reinforcing knowledge of the functions of different parts of speech or grammatical elements in a sentence.
- Explaining how to remove the inflections and look up the original or canonical form in the dictionary.
- Teaching effective use of additional dictionaries features, such as sample sentences, collocations, and clarifications
- Instructing students on how to consider contextual information to choose the correct meaning of the word
- Educating teachers on these dictionaries' macro and microstructural design to identify potential issues and assist their students in solving them.

METHODOLOGY

Design and research question

This teacher training module was developed based on findings from a qualitative, educational research study (Peel, 2020) aimed at exploring the integration of FAOBD within TEFL in higher education. The study sought to answer the research question:

What technological, pedagogical, and didactic constructs are necessary for the effective integration of FAOBD into a TEFL higher education program?

A multiple case study approach (Yazan, 2015) was employed, utilizing three data-gathering instruments: an online survey via Survio.com (Survio, 2021), semi-structured interviews conducted on Microsoft Teams (Teams, 2021), and analyzed with Atlas.ti (ATLAS.ti, 2021), and an online course evaluation form.

Participants

The study sample, who previously provided an informed consent, included three EFL university professors (two females and a male) and a female professor with administrative duties, all from a private university in Colombia. Their ages ranged from 38 to 61, with each holding a B. A. in Modern Languages, a master's degree in education, and an average of 20 years of experience. The participants were selected through a non-probabilistic, convenience sampling method based on proximity, availability, and willingness to participate. Due to the Covid-19 pandemic,

these teachers transitioned from in-person to an online teaching, which led to increased use of digital resources in their classes.

RESULTS

The analytical strategy employed the Grounded Theory principles (Birks & Mills, 2011; Dunne, 2011) using Atlas.ti software (ATLAS.ti, 2021). Data was gathered and triangulated through an online course evaluation form, which incorporated insights from the university's EFL course instructional design, survey, and interviews. This triangulation highlighted the need for, and provided the framework for, an in-service teacher training module titled "Teaching Dictionary Skills through Online Bilingual Dictionaries". This module is available as an embeddable eXelearning package (Appendix 1) and a PDF file at the university repository (Appendix 2).

The results revealed that the absence of explicit institutional policies on the use of FAOBD led to a low inclination among teaching staff to take specific actions that would both encourage the use of FAOBD and discourage reliance on online translators. This absence of ICT-related institutional policies significantly influenced teachers' pedagogical decisions, often outweighing their positive perceptions of FAOBD. Consequently, FAOBD integration fluctuated between the substitute and adoption stages. This meant that FAOBD were often used as direct substitutes for print dictionaries, with little effort to exploit their additional features. While teachers could anticipate and address some usage issues, they rarely explained in depth their structure and capabilities. The absence of clear pedagogical goals led teachers to limit FAOBD use in the classroom, primarily to maintain control and authority.

Due to the lack of institutional policies, there was no in-service teacher training focused on effectively using FAOBD as didactic and lexical tools. The widespread use of mobile phones and the shift to online instruction highlighted the need for teacher professional development actions. The Covid-19 lockdown provided an opportunity to train the teachers on the didactic use of FAOBD as they engaged in intensive training on the technologies required for online teaching.

Results also revealed that teachers needed additional time and support to design language learning activities that encourage students, it was essential to allocate time and to provide time-saving strategies.

Teachers expected FAOBD training through concise, engaging modules that combined theory with practice. They anticipated to learn how to design activities and resources that would enhance their students' use of FAOBD, their look-up skills and the accuracy of word interpretation and selection. To achieve those goals, the students, who were often reluctant to use these online dictionaries on their own, needed to understand the macro and microstructure of the FAOBD, as well as the different grammatical functions of the words. The teachers believed that these actions would reduce look-up errors, decrease frustration and improve the quality of both oral and written learning outcomes. These considerations shaped the design of the teacher training module.

MODULE DESIGN PROCESS

Theoretical and didactic considerations

The analysis identified several administrative, pedagogical, and didactic factors and training needs related to FAOBD curriculum integration. To address those needs, the training module was designed with consideration of the technology staff development policy outlined in Anderson and Dexter's School Technology Index (2000). Recognizing the importance of leadership in adopting new ICT practices (Yuen et al., 2003), two administrative staff members were informed of the research findings and training needs via email, with suggested incentives to encourage teachers to be trained.

The module, based on the Technological Pedagogical Content Knowledge (TPACK) framework (Koehler & Mishra, 2009), was designed to enhance teachers' didactic-technological knowledge for using FAOBD in TEFL contexts. It also aimed to integrate of dictionary-related teaching strategies with existent English course content, aligning with the university language center's methodologies like B-learning, Task-Based Learning, and the Communicative Approach. The focus on utilizing *WordReference*.

Teachers' participation in the initial training phase was crucial for main two reasons: their motivation ensured the training's sustainability and evolution, and their feedback was valuable for refining the module's instructional design to better meet the English course requirements. To boost their involvement, the module encouraged the addition of teachers' suggested activities and resources during a subsequent co-creation phase.

Chilean ICT integration model

The Chilean ICT curriculum integration provided key insights for structuring the module components. This model, which considers ICT users' profiles, expectations, and needs, outlines the ICT use stages students go through in using technology for learning. It offers clear guidance on how teachers and students can use ICT for more complex academic purposes (Parra & Pincheira, 2011). Alongside Egido and Meliss' (2017) lexicographical recommendations, this model shaped this module to address the needs of teachers and students in understanding FAOBD features and avoiding common look-up errors.

The module, created using the eXelearning tool (eXelearning, n.d.), includes:

- Definitions of online bilingual dictionaries; distinguishing them from translators and glossaries.
- Explanations of FAOBD structure and information types.
- Criteria for selecting the most suitable FAOBD for specific tasks.
- Arguments against using online translators in foreign language learning.
- Strategies and ready-made resources for teaching students to use FAOBD effectively and autonomously.
- Collaboratively exercises for teachers to design didactic activities involving FAOBD
- Engaging self-assessment activities
- A PowerPoint presentation tailored to WordReference functions and integrations.

The eXelearning authoring tool was chosen for its versatility in creating and incorporating various resources, such as navigation trees, text, images, sounds, videos, and animations (eXelearning, 2021).

Aligned with the Chilean model objectives, the module complements the language center curriculum by offering a framework for understanding and using FAOBDs. It provides teachers with the background knowledge, didactic strategies, and resources needed to start working with their students. A key goal of the module is to encourage the leadership to offer ongoing teacher training, enabling the staff

to systematically and efficiently incorporate FAOBs into their classes, thereby enhancing their curriculum integration, saving time, and improving students' learning outcomes.

Chilean model dimensions

When designing the module, several standards (S) and dimensions from the Chilean ICT model for teacher training were considered (Parra & Pincheira, 2011):

Pedagogical area dimension

S1: *Understanding the implications and potential of ICT use in education.* Teachers are introduced to various lexical ICT tools, with a focus on the specific uses and benefits of FAOBs.

S2: *Designing ICT-based learning environments.* The module outlines steps and strategies for teaching students to find, interpret and select the most appropriate word meanings based on grammatical functions and the context.

S3: *Creating didactic materials with ICT to improve job performance.* The module offers teaching strategies and resources designed to inspire teachers to create and adapt materials that suit their teaching style and their students' learning needs.

S7: *Supporting learning through virtual environments.* The module emphasizes the guided use of lexical tools to teach grammatical and lexical concepts, promoting their natural and sustained integration into TEFL practices to foster student autonomy.

Technical aspects dimension

S10: *Managing basic ICT concepts and functions.* The module provides instructions on the core functions of FAOBs and how to utilize them to in creating didactic activities.

School management dimension

S13: *Using technology for administrative and teaching tasks.* The module highlights how FAOBs support teaching management tasks, such as report writing, internal and external communications, and preparing class activities and materials.

Professional development dimension

S15: Reflexively incorporating technologies into teaching practices. This module encourages teachers to integrate FAOBD more frequently and with greater pedagogical intent. It includes an application activity that prompts teachers to design innovative didactic strategies for using these lexical tools, boosting their confidence and ownership of the activities and resources.

S16: Using ICT collaboratively to exchange reflections, experiences, and resources that enhance teaching practices. The module promotes collaborating and exchanging ideas among peers regarding the creative use of FAOBD's. The email informing the leadership of the research findings recommended creating a digital repository of activities and resources teachers could access from anywhere.

Colombian Ministry of Education model

The module design was also informed by the Colombian Ministry of Education's model for teacher professional development (Ministerio de Educación Nacional, 2013), which emphasizes the creation of enriched learning environments through ICT. This model encourages institutions to develop training programs tailored to teachers' specific needs for integrating ICT into the curriculum. The professional development principles of this model guided the development of a teacher training module that is:

Relevant. The module addresses the specific training needs of teachers and students regarding FAOBD use, as identified by research findings. While focused on professional development for teachers, it also includes activities and resources for classroom use. The module aligns with the Task-Based communicative approach used in the university's language center, enhancing students' learning through FAOBD use. Since it is grounded in three different models, it is adaptable for use by various TEFL institutions and educators.

Practical. Results revealed teachers primarily used FAOBD as reference tools in lesson planning. The module encourages teachers to explore and utilize FAOBDs as educational resources. Its teaching strategies and materials can be adapted to meet the diverse needs of teachers and students needs at each level or task, with a focus on the practical use of FAOBDs in lesson planning.

Situated. The module is tailored to the needs of addresses the language center teachers' needs, course instructional design, and methodology but it is also adaptable for a broader range of TEFL educators. It supports teachers in

transforming their pedagogical practices and improving students' learning outcomes through effective FAOBD use. Additionally, it aims to reduce the time need for teaching and guiding FAOBD use while helping students verify meanings.

Collaborative. The final application activity and the proposed repository of activities and resources foster collaborative learning, collective creation, and peer exchange.

Inspiring. The module seeks to inspire teachers to reflect on their foreign language teaching paradigms and their students' perspectives, encouraging them to find innovative and creative ways to use FOABDs in the classroom. These didactic innovations can enhance both teaching practices and student learning outcomes.

In addition to its core principles, the teacher training module incorporates the following ICT literacy competencies outlined in the Colombian Ministry of Education (MEN) model:

Technological. The module equips teachers with the skills to select and use the best-suiting FAOBD for each task and level. To describes the macro and micro-structure of FAOBD's and provides practical strategies for their use in a TEFL context.

Pedagogical. Teachers are trained in the situated, intentional, meaningful, and effective use of FAOBDs to enhance both teaching and learning in TEFL. The module discusses the advantages and limitations of FAOBDs and their impact on pedagogical decisions and student learning outcomes.

Research oriented. The module serves as a starting point for ongoing professional development, encouraging teachers the use of FAOBDs in creating enriched TEFL learning environments. It promotes the transformation, production, and dissemination of knowledge to support FAOBD integration in TEFL contexts, contributing to students' linguistic progress.

Management. The module also aims to train teachers in the use of FAOBDs across various pedagogical and management practices.

The module's self-paced design aligns with the complexity levels proposed by the MEN model allowing teachers to progress at their own pace across different proficiency and depth levels. In other words, it recognizes the independent achievement of each competency and specific stages of development within those competencies. Of the three levels of complexity outlined in the model, the module specifically targets *exploration* and *integration*.

At the exploration level, teachers need to gradually familiarize themselves with the educational use of FAOBDS. While participants were already using them as reference tools, it is fundamental to guide them in exploring and reflecting on the basic and advanced functionalities of these dictionaries as TEFL teaching materials. This exploration should lead to more frequent use of FAOBDS more frequently and better guidance for students in addressing their specific look-up needs and challenges.

At the integration level, once teachers and students are comfortable with the didactic use of FAOBDS, these tools can be effectively incorporated into courses instructional design. However, to ensure FAOBDS are used intentionally and systematically, increased institutional support is necessary.

CONCLUSION

This research highlights the growing importance of integrating technology, such as FAOBD, into TEFL contexts and underscores the need for effective in-service teacher training in lexicographical skills. Leadership support is crucial to ensure teachers can effectively use these digital dictionaries, and other digital lexical tools, in their classes. This support should include both training and incentives, such as dedicated time for professional development. A key contribution of this study is the integration of lexicographical, foreign language teaching, and professional development principles to design a teacher training module.

The module developed to help teachers understand the structure and didactic potential FAOBDS is a direct response to the identified administrative, pedagogical, and didactic needs for integrating these tools into TEFL contexts. This module represents the initial phase of a broader teacher training process aimed at progressing to the innovation level, the third and highest complexity level in the MEN model.

Achieving innovative curricular integration requires a deeper, more applied, and sustained teacher training program. This in-service training should empower teachers to use FAOBDS in increasingly innovative, meaningful, and effective ways. Proper training will help prevent and reduce students' look-up errors related to meaning interpretation and word choice. Assessing the complexity levels reached in each competence is crucial for refining this initial training strategy. Teacher feedback after completing the module can lead to improvements in its instructional design and the development of more extensive, adaptable, and advanced training programs, benefiting teachers across various TEFL institutions.

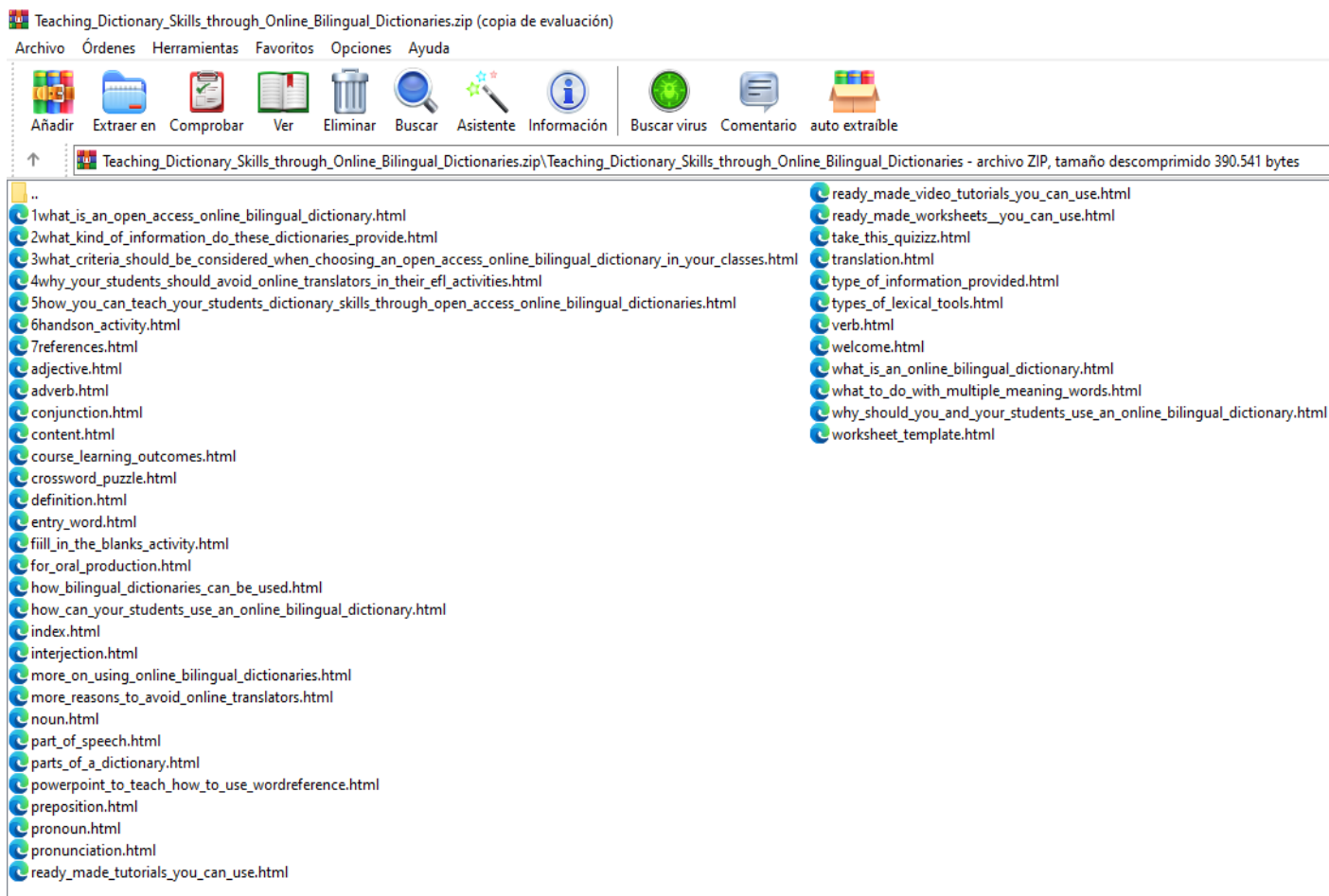
While this research provides valuable insights into FAOBD curricular integration and the necessary TEFL teacher professional development, it is important to note some limitations. The study involved a small sample of four participants from a single private institution, which may limit the generalizability of the findings to other TEFL settings. Future research should address the lexicographical training needs of teachers in elementary, middle, and high schools to design appropriate professional development programs that further FAOBD curriculum integration. A larger quantitative study, including public institutions, could help validate or challenge these findings and provide a more comprehensive understanding of FABODs as TEFL resources, particularly in lexicographical didactics and teacher training.

Additionally, the study focused on teacher perspectives regarding FAOBD use, look-up errors, and training needs. Future research should explore leadership and student perspectives to gain a more holistic understanding of FAOBD curriculum integration. This broader perspective could inform institution policies, enhance teacher development programs, and improve student language outcomes.

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APPENDIX 1. EXELEARNING MODULE EMBEDDABLE PACKAGE



APPENDIX 2. TEACHER TRAINING MODULE PDF LAYOUT

Teaching Dictionary Skills through Online Bilingual Dictionaries · 9



How students can use online bilingual dictionaries

Source: <https://bit.ly/3sMQUsI>

Based on the specific characteristics of each online bilingual dictionary, your students can use them to:

1. Improve their written and oral language skills.
2. Broaden their vocabulary.
3. Double-check how to spell a word.
4. Find the meaning of a word they don't know.
5. Find a synonym or an antonym to avoid repetition.
6. Check the pronunciation of new words.
7. See the conjugation of the verbs.

Advantages of using online bilingual dictionaries

Source: <https://bit.ly/3rG0QTq>

These are some of the advantages online bilingual dictionaries offer:

1. Time saving. Searches are faster because you can type the entries.
2. Space saving. No need to carry heavy and voluminous printed dictionaries. You can use your cell phone.
3. Variety of features. Online bilingual dictionaries usually offer instant updates, online forums, slang, and, in some cases, integrations with specialized dictionaries.
4. Current information. Words and phrases are constantly added and updated.
5. Language learning. Some of them offer explanations about specific ways to use the words according to their grammar function.

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