ESP Teachers' Digitalized Pedagogical Literacy:

Reviewing the Algerian Context

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Abstract

With the indispensible necessity of accommodating with technological innovations especially in the field of education, Algerian university teachers are required to show digital literacy readiness in order to assure successful performance. This study utilizes secondary data to critically and systematically review research related to the Algerian English for specific purposes (ESP) teachers' digitalized professional development. Hence, this study seeks to inquire about strategies, practices, and expectations that can safely lead ESP Algerian practitioners toward high quality digitalized pedagogical literacy (DPL). Results of this study show that parameters evaluating ESP Algerian teachers' (DPL) are not yet well defined. In addition, though this type of literacy in the Algerian context is superficially researched, it is considered as a focal aspect of teachers' overall professional development. Future reviews may continue to trace new practices in the field of the Algerian ESP teachers' digitalized pedagogical literacy development.

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1. *Introduction*

In this era of digitalized education, teachers' professional development is no longer limited to learning about course content, teaching methods, feedback strategies, and, assessment techniques, but it should cover digitalized literacy that is a prerequisite of the current type of online teaching and the future metaverse world.

ESP teachers are no exception; they are urged, on their part, to extend their special training to cover developing technical capacity through advancing their information and communication technology skills (ICT). In fact, the new online mode of teaching via different kinds of means and platforms (Moodle, Google classroom, Zoom, and more recent metaverse platforms such as IMMERSE) critically demands ESP teachers to acquire advanced technical skills to effectively engage their students in the process of learning.

Following this line of thought, this study aims at shedding light on the Algerian ESP teachers' digitalized pedagogical literacy development. This study is a localized systematic review of the Algerian research covering ESP teachers, professional development and digitalized pedagogical literacy. So, a content analysis of these aspects is conducted on a corpus of 15 research studies in order to answer the following pertinent questions: 1) To what extent is the DPL of the Algerian ESP teachers subjected to inquiry?

2) Is DPL an essential construct in the Algerian ESP teachers' professional development?

3) What strategies, practices, and expectations ESP Algerian practitioners adopt to professionally develop their DPL?

This study hypothetically assumes that: first, DPL of the Algerian ESP teachers is not given its due credit within the body of literature of the ESP field; second, DPL is a critical element shaping the ESP teachers' professional development; third, Algerian ESP teachers, like their counterparts in other countries, positively embrace a systematic plan for developing their DPL.

2. *Review of Literature*

2.1 *The Status of ESP Teaching in Algeria*

Teaching English in the Algerian universities as a subject in different degree programs makes ESP well established. Starting from the bachelor degree (BA) and going to master (MA) and PhD degrees, students are required to take an ESP course. This fact leads to inquire about how it is taught and learnt and what pedagogical challenges are faced and what expectations and future plans of innovation are to be implemented.

In her quest to establish a field of Algerian ESP pedagogy Dr.Ouafa Ouarniki organized a myriad of scientific

events to enrich discussion on the importance of raising awareness about ESP pedagogical research. A very good example is the international conference " ESP Teaching Today: Current Practices, Challenges, and Perspectives" (2022) which is turned later to a collective book gathering 18 research studies. Following her steps, a good body of research studies tackled the issue of ESP teaching in the Algerian universities. Issues related to ESP teachers including their professional training, challenges of teaching and assessments are largely tackled.

Boudersa (2018), in her turn, insisted on the idea that Algerian ESP teachers are not ESP specialists. This means that they are trained to teach general English and they have no knowledge of the content of the subjects taught. Indeed, the issue of who should teach ESP courses in Algeria, general English teachers or specific subject teachers mastering the English language, is still a controversial issue under investigation.

2.2 ESP Teachers' Professional Development

Because of the hard mission of ESP practitioners who should not only teach language skills and competencies but also integrate and align content to specific students' needs, it is of paramount importance that they keep their teaching and assessment methods and strategies updated. Since official training on how to

teach ESP has never been reported to take place in the Algerian context, it is often recommended by researchers that ESP practitioners would better attend workshops, study days, and conferences in order to better communicate their problems and discuss possible solutions. Accordingly, it is safe to say that autonomous professional development is required for ESP practitioners in the absence of special training programs. Reading research studies on ESP teaching in Algeria raises awareness of teachers on the critical need of updating their pedagogical practices regarding their ESP courses for various and different target populations. This does agree with Ziani (2016) who said "…combination of knowledge and practice are essential in the construction of professional competence (Ziani, 2016, p.62). Henceforth, Knowledge of the changing peculiarities of an ESP class requires an urgent need for constant improvement of both professional knowledge and English knowledge.

2.3 Pedagogical Literacy Development

Having sound pedagogical content knowledge is a prerequisite to understand the specific needs of students and the ESP course context. That is, in order to improve their performance and the one of their students, ESP practitioners need to constantly account for all elements of the teaching process. It is made clear by kocoglu (2021) that to make any informed

educational decision, teachers need to have a certain level of pedagogical literacy. He defined the latter as

> …the knowledge of learning and teaching time, practice, strategy, ways or methods in the learning environments where formal education takes place, as well as information containing information about the learning, teaching and evaluation purposes of the students participating in the learning environment." (kocoglu, 2021, p.74)

This definition covers the "what" and the "how" to develop a teaching competency that guarantees high quality teaching. In this vein, ESP teachers who look for developing their pedagogical literacy should make sure that the pedagogical context in which they work is actively engaging. This entails advanced knowledge of: learning -teaching models, instructional strategies, teaching methods and techniques, quantification and consideration, teacher-student relationship, and classroom management (kocoglu, 2021, p. 75). It is, indeed, the development of one's pedagogical literacy that permits for meaningful learning to take place especially in specialized contexts of English language teaching.

2.4 ICT Tools Implementation in the ESP Context

Information and communication technology (henceforth ICT) tools are well established in the field of language teaching and learning. Technology becomes a cornerstone of any innovation that may take place in education and especially language teaching (Kessler & Hubbard, 2017). Much research praised the fact that teaching and learning are no longer confined to the walls of the classroom and a sage on the stage. The introduction of ICT in language learning in general and ESP in particular proves to improve learning achievements and increase learning outcomes (Živković, 2016)

Moreover, because students become "digital natives" and do most of their tasks virtually, the implementation of ICTs in ESP teaching creates more motivating and appealing learning environments. Butler-Pascoe (2009) put forward fourteen advantages of incorporating technology in the teaching of ESP among of which are: it "Supplies authentic audiences, including outside experts in specific fields." and it "Provides interaction and communicative activities representative of specific professional or academic environments." (Pascoe, 2009, p.3). Thus, ICT instruments facilitate the task of ESP practitioners who are supposed to design the syllabus, develop materials (or select among the existing ones), and create motivating learning contexts, etc.

In the critical period of the pandemic the role of technology is even more acknowledged and full online learning took place in all countries for the first time, and Algeria is no exception. Even in the post pandemic era, online learning keeps to exist alongside onsite teaching which makes the teaching of ESP blended.

Indeed, the advancement of technology that can be seen nowadays reaching the world of the metaverse pushes teachers to update pedagogical knowledge and practices and adhere to the requirements of technology-based teaching.

2.5 Digitalized Pedagogical Literacy of ESP Teachers

As it is mentioned above, ESP teachers are inclined to use technological teaching facilities, but the effectiveness of their implementation depends mostly on the teachers' digitalized literacy and digitalized pedagogy. The former is defined by Gilster (1997) as the "ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers" (Gilster, 1997, p. 1). That is, in order to assimilate information in a digital environment, teachers need to develop technical skill. The latter, digitalized pedagogy goes beyond mere knowledge of using technologies to becoming fully aware of when to use technology and to serve what learning objectives. That is, digitalized pedagogical

literacy is about adopting a critical perspective in approaching technology in the context of teaching-learning environments (Eshet, 2012).

Bouguebs (2022) claims that ESP practitioners' profiles should incorporate digital literacy skills in order to keep up-to date with the constant and quick progress of technology. She argues that

> This adopted new profile will enable the ESP practitioner fulfills the multiple of roles attributed to him in an ESP setting where fitting the communicative needs of a category of learners who are digitally more knowledgeable will be easily achieved .(Bouguebs, 2022, pp.122-123)

ESP teachers should consider technology-based pedagogy and their ICT skills should support their instructional procedures in order to arrive at significant and deliberate learning.

3. Methodology

This study is a systematic review of the literature on the ESP Algerian teachers' digitalized pedagogical literacy. A systematic review is defined by CRD Report (2001) as:

> A review of the evidence on a clearly formulated question that uses systematic and explicit

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methods to identify, select and critically appraise relevant primary research, and to extract and analyze data from the studies that are included in the review (p.1)

And Feak & Swales (2009) consider "Systematic reviews are undertaken to clarify the state of existing research and the implications that should be drawn from this." (Feak & Swales, 2009, p. 3). Thus, the systematic review conducted in this study permits for: 1) demonstrating the current state of research on the topic of this study; and 2) answering the review question(s) from a body of evidence rather than studies in isolation (Nordenbo, 2009)

The aim of this localized systematic review is to find how much research has tackled ESP teachers' professional development regarding their knowledge and skills of technology integration in the teaching and learning process. In addition, it seeks to identify the overall approach ESP Algerian practitioners adopt to professionally develop their DPL. This entails identifying strategies, practices, and expectations reported in the literature regarding ESP teachers' DPL development. Therefore, it is aimed to shed light on a critical and up-to-date area of research that is ESP Algerian teachers' DPL.

The systematic review presented in this study is localized. That is, it covers only research studies that are conducted in the Algerian context concerning ESP practitioners' digitalized literacy development. The results of this study are mainly meant to uncover the status quo of the different pedagogical practices that help ESP Algerian teachers develop their knowledge and skills of technology use in their teaching.

3.1 Resources and Search Strategy

The main electronic databases that are used in this systematic review are ASJP (the Algerian scientific journals platform) and Google Scholar. The key words and phrases that guide searches included: digital literacy and ESP, digital literacy framework for ESP, digital literacy Algerian university, digital competencies and ESP practitioners, digital skills of ESP teachers, information and communication technology (ICT) and ESP, pedagogical literacy and ESP, and professional development and ESP teachers' digital literacy. These key terms helps collect all the studies that can help answer the three questions addressed in this review study.

3.2 Criteria of Inclusion and Exclusion

It is worth mentioning that only the studies that tackled ICT integration and digital literacy of Algerian ESP teachers and which are conducted on the Algerian context are selected for this systematic review. Since the number of the studies found is few, their time frame is not limited by a number of years. Equally

noteworthy, research on ESP Algerian teachers' DPL is recent that is why most of the studies appear in the post pandemic era.

Therefore, the total number of the research studies that can help answer the three research questions asked in this paper is 15. Though the more the number of the studies the better the quality of the review, it is worth to highlight that ESP Algerian teachers are under researched let alone their DPL.

The 15 research studies include research papers, chapters in a collective book, and dissertations. They all meet the criteria set for the analysis in this study.

3.3 Data Analysis Procedures

Generating knowledge about ESP Algerian Teachers' DPL from multiple studies selected to fit the objectives of this research and to be reviewed are analyzed following the systematic review norms of analysis. So, after identifying the relevant studies according to inclusion and exclusion criteria, the next step is to synthesize (extract and categorize) the data. After this results will be interpreted to reach answers and conclusion for this study.

4. Results

4. 1 Categorization of the Data

The fifteen research studies selected for this systematic review are classified according to the following criteria: 1) ICT implementation in ESP contexts; 2) online teaching in the ESP contexts; 3) teaching ESP through platforms; and 4) digital literacy and professional development of ESP Algerian teachers.

Through these four categories it is aimed to analyze data and find about how much ESP teachers' DPL is emphasized, developed, and considered as a critical component of ESP teachers' professional development.

5. Analysis of the Data

In this part, studies are going to be analyzed according to the categories that they fit. The analysis covers all instances in which the ESP teacher factor is discussed.

5.1 ICT Implementation in ESP Contexts

Under this category, seven research studies are selected for analysis. This number indicates that half of the reviewed papers dealt with the issue of ICT integration in the teaching of ESP in the Algerian context. Once more, the inductive approach used aims to find about ESP teachers' practices, strategies, and expectations of the use of ICT for different students' needs. The studies are chronologically organized starting from the ancient to most recent one.

The first study is a " Magister" dissertation and which is entitled " An exploration of the main difficulties, Challenges and requirements of the ESP Teaching situation in Algeria: The case of ESP teachers at Aboubekr Belkaid University, Tlemcen". It was conducted by Nawal Mebitil (2011). In this dissertation the ICT issue is also highlighted and it is found that in this university:

Most of the language teachers are not familiar with the use of ICT; this may result in their ignorance of these tools which in fact may help them better perform their courses (p. 76)

In the year this study is carried, ICT is newly introduced in the Algerian university. Hence, it is quite acceptable that teachers may show some resistance to replace their traditional methods of teaching by technology-led approaches.

The second study is carried by Faiza Haddam Bouabdallah (2015). Her research study is entitled "Integrating Technology in the ESP Classroom in the Department of Biology- Tlemcen University (Algeria). One of her findings concerning teachers is that they lack familiarity and competency to use technology in their English for biology classes. She emphasized the fact that teachers have received no training on how to use technology in their teaching. She recommended that ESP teachers have to make use of modern technologies in class

…to motivate the learners in acquiring a language in a specific context" (Bouabdallah, 2015, p.83)

In the same year (2015), a third study was conducted by Soraya Halfaoui Ghomari on "Bridging the communicative competence gap of the English language in the workplace through an ICT-ESP based approach of teaching in Algeria". In her turn, she come to conclude that there was a certain resistance from the part of teachers to use technology in their teaching practices and she suggested that "ICT successful integration in a teaching/learning context requires the implementation of strategic organization that is not possible unless supported by a suitable change process at psychological and pedagogical levels" (Ghomari, 2015, p.761). In a certain way, she insisted on strategically engaging ESP teachers to reflect on the benefits of ICT teaching approach especially in developing students' communicative skills

The fourth study is a doctorate thesis and it is entitled " Integrating New ICT Tools to Improve ESP Courses in the Algerian Universities: Testing Skype for Distance Online Learning" it is carried in 2018 by Amina Kerkeb. What is good about this study is that it covers many Algerian universities and this gives a broader image of ICT use in different contexts. Her hypothesis about the low readiness of ESP teachers' to adopt ICT in their teaching

was confirmed and she declared that students more than their teacher are ready to use ICT. In addition, she found that in spite of the fact that both teachers and students have positive attitude toward technology-based education "…it seems that the teachers' competency gap will lead to a delay in adopting that new technology/online-based teaching" (Kerkeb , 2018, p.178). So, "teachers would be reluctant or would hesitate in adopting such a new technology in teaching, as they need to acquire some competency" (Ibid, p.178). In her interview with ESP teachers, she reported no actual use of ICT tools she has proposed for them. This means that, for some reasons, teachers choose to stick to the traditional way of teaching that was described as based on teaching reading field-specific texts and grammar.

The fifth study is about "Designing an English for Specific Purposes Course for First Year Biology Students: Integrating Information Communication Technologies in the Classroom." And it is conducted by Bouderba Djamila and Yahiaoui Habib (2020). This study is conducted at Mascara University and the quest was to find the effectiveness of ICT tools in teaching ESP for biology students. The results show that " …teachers counted on the traditional methods of teaching instead of integrating ICTs in their classes" (Bouderba & Yahiaoui, 2020, p. 524). So up to this year, researchers still find that

ICT is not yet integrated in the teaching of ESP in Algeria.

The sixth study is about "The Challenges Of Teaching English For Economics" and it was conducted by Siham Sartorio and Fatiha Hamitouche (2021). Though the title indicates that the focus is not ICT, reading the paper shows that the focal point raised is ESP teachers' reluctance to use ICTs in their teaching which makes learning less effective. Students' learning experiences were not enriched by engaging and active tasks a fact which was attributed to the lack of ICT teaching aids.

The seventh research paper is published by Benyoub Malika and Benmoussat Smail (2022) and it is about" The Use of ITC in Teaching ESP in the Department of Economy, University of Saida". In this study, ESP teachers were considered as advocates of the traditional method, and this led to present many ESP teaching difficulties at the level of the Economy Department. Issues of course design, material development, and actual teaching practices were identified as traditionally treated and no sign of technological innovation was reported.

The above seven reviewed studies show that ICT is not part of ESP teaching in Algeria and that ESP teachers' technological skills and competencies are not developed because of the simple

reason of their reluctance to experiment with technology in their ESP classes.

5.2 Online Teaching in the ESP Context

Under this category four studies are classified. The first study is entitled" Using Video Conferences for ESP Postgraduate Students: An Example of Distance Learning at the University of Tlemcen/ Algeria" and it is carried out by Abdelkader Bensafa (2014). In his study, he reported a successful case study where ESP postgraduate students benefited from an a series of online conferences presented by foreign experts. Though he acknowledged the technical challenges encountered during each video conference, he concluded, that this mode of teaching "…represents a revolution in the domain of higher education which is characterized by its sustainability and flexibility" (Bensafa, 2014, p. 93).

The second study is carried out by Salma Aleb and Zohra Labed (2021) and it is entitled "The Effect of Implementing the Blended Teaching Approach in ESP Courses on Students' Achievement and Attitudes". This study is an educational experiment that was carried out at the computer science department at Mostaganem University. The aim of this experimental study is to test the effectiveness of a blended teaching approach on ESP students' outcomes. Results revealed that blended learning approach contributes significantly in developing students' learning and communicative skills. The researchers emphasized the combination of both traditional and computerized teaching approaches. The third study is a book chapter carried by Houda Fadel (2022) and it is about "ESP Teachers' Perspectives towards Teaching ESP through the Flipped Classroom Approach". A sample of 100 ESP Algerian teachers shows positive attitudes towards teaching ESP through flipped classroom method. In addition, teachers acknowledged the various benefits of this teaching method for their ESP classes especially that much of the class time is devoted to increase learners' materials understanding, give feedback, allow for interaction and communication, and made learning more learner-centered. Hence, teachers' should familiarize themselves and experiment with this method in their ESP classes. Again, teachers are not reported using the flipped method and just their theoretical perspectives are investigated.

The fourth study under this category is presented by Soumia Boudinar (2023). Her study is entitled " The Reality of Integrating Blended Learning in ESP classroom – Seeking for Efficiency A Case Study of Master 2 Computer Sciences Students at Farhat Abbas University, Setif 1" though this study is carried in a different university, the results seem similar to the study of Aleb & Labed

(2021); both of them tackled the effectiveness of Blended learning in the ESP context. According to her:

> It can be inferred that the implementation of blended learning in ESP class with Computer Sciences students received a positive perceptions in several parts, namely the flexibility, practicality and efficiency of the ESP course, independent learning, materials availability, motivation and saving time in the learning process (Boudinar, 2023, p.475)

So, she recommended that teachers should be equipped with the necessary knowledge and skills to ensure better implementation of blended learning.

5.3 Teaching ESP through Platforms

Regarding teaching ESP through different platforms, no study is reported to focus its endeavor on this particular issue. However, Mebetil (2011), in her case study, calls for the creation of an ESP Network so as to deliver ESP courses through virtual platforms:

> The proposed idea for Moodle is not only for language teachers alongside their learners but it can also join language teachers from different universities nation-wide which may help ESP teachers better

exchange their ideas, experiences and courses, too.(Mebetil, 2011, p.145)

5.4 Digital Literacy and Professional Development of ESP Algerian Teacher

Under this category the following studies are identified:

The first study is conducted again by Nawal Mebitil (2014) on "Teaching EST in Algeria: Training or Retraining Language Teachers?" The concern of this study is to highlight ESP teachers' preparedness to teach students of physics. The main issues identified are "Algerian ESP practitioners lack expertise in their teaching field and have no enough preparation as they did not undergo an adequate training for the field" (Mebitil, 2014, p. 2385). Thus, it was recommended that ESP in this department should be retrained to meet their students' needs and cope with technological updates in this field. Hence, teachers' digital literacy should be promoted.

The second study is conducted by Ziani Melouka (2016). In her research she tackled the issue of " Teacher Professional Development: A Challenging Perspective in ESP Settings". Unfortunately, this study revealed that "…teachers of English in the department of sociology were not trained to teaching ESP and lack the competencies in designing courses for sociology students" (Ziani, 2016, p. 58). She

strongly recommended that ESP teachers should receive ongoing training from the part of professionals in the field of ESP.

The third study is carried by Radia Bouguebs (2022). Her study is entitled " Digital Literacy Importance in ESP Teacher Education: Perceptions, Engagements and Reality". Though this study theoretically talked digital literacy of Algerian ESP teachers, no specific ways and strategies were analyzed to help gather the pieces of the Algerian ESP teachers' DPL development procedure. Even though, it interestingly emphasized that the professional profile of ESP Algerian teachers cannot be improved without considering "digital literacy training programs in teacher education" (Bouguebs, 2022, p. 120). More importantly, she conclude her study by emphasizing that

> Digital literacy has become an indispensable if not an obligation in teacher education especially due to the pandemic aftermath, so incorporating it in any teacher training program is a necessity (Bouguebs, 2022, p.130)

6. Data Discussion

The present research study is carried out with aim to find about ESP Algerian teachers' DPL development through systematically reviewing 15 relevant research studies. The above inductive analysis of these studies helped answer the research questions addressed in this research.

The first question is about how much literature investigated ESP Algerian teachers' DPL. Both the number of the total reviewed studies and the ones classified under the fifth category show paucity of research on this important issue. This leads us to confirm the first assumption that little research investigated how ESP Algerian teachers develop and improve their technology skills and experiences.

The second question raised in this study was about considering DPL by ESP Algerian teachers' as an essential component in their professional development. Studies which investigated teachers' attitudes and perspectives on the use of all types of technological tools (blended learning, flipped classroom, online learning, ITCs, and platforms) accounted for the critical importance of advancing their knowledge, skills, and experiences of those means for better results. Hence, DPL is indispensible for ESP teachers' professional development.

The third and last question asks for more concrete measures taken to develop ESP Algerian teachers' DPL. Unfortunately, no study was reported to illustrate through real cases how DPL should be enhanced though certain activities and strategies. This might be interpreted by the fact that

ESP teachers receive no trainings on how to use technology in their teaching practices. This may give some suggestions for further research investigating ways ESP teachers follow to develop their knowledge and skills of how to effectively use technology in their teaching, especially that the whole world is moving toward the more innovative generation of technology that is the metaverse.

7. Conclusion

Systematically reviewing research on especially the ESP Algerian teachers' digitalized pedagogical literacy carried out in the present study tries to cover a gap in the literature which concerns mainly the Algerian ESP scenario. In fact, it is both methodologically and practically significant. Localized reviews as the one presented in this study helps researchers identify gaps in the literature and it helps them to carrying investigating DPL area of research from other perspectives. In addition, it describes the current state of DPL in Algeria which presents recommendation to stakeholders to take practical measure to improve teachers' digital literacy. Organizing scientific events like conferences and study days on the topic of DPL may raise teachers' awareness on the critical importance of keeping up-to date with technological advancement especially in the field of education. More importantly,

professional development trainings like the ones that the new university teachers are required to take at the beginning of their teaching career are strongly requested to include DPL in their agendas. Self- professional development on developing one's DPL is another aim that this study strives for.

However, this study is not without limitations that need to be addressed in the future research. First, fifteen research studies are not enough to carry a systematic review; though it was justified by the paucity of research on the topic of this study. Second, as a systematic review should be done by two researchers to avoid any subjective or biased interpretations. Thus, the researcher kindly requests for another systematic review of these research studies, and others, investigating the Algerian ESP digitalized pedagogical literacy development.

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