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POSTGRADUATE DISSERTATION

**INVESTIGATING ESP TEACHERS' PERCEPTIONS OF
USING WIKIS TO TEACH WRITING IN UPPER
SECONDARY VOCATIONAL SCHOOLS**

PAPADAKI ANNA

Dr. KARAGIANNI EVANGELIA

PATRAS, MAY, 2023

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INVESTIGATING ESP TEACHERS' PERCEPTIONS OF USING WIKIS TO TEACH WRITING IN UPPER SECONDARY VOCATIONAL SCHOOLS

ANNA PAPADAKI

Supervising Committee

Supervisor:

Dr. Evangelia Karagianni

Hellenic Open University

Co-Supervisor:

Dr. Kosmas Vlachos

Hellenic Open University

Patras, May, 2023

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Abstract

The role of Web 2.0 tools is becoming prominent. Most studies focus on students' attitudes towards the tools. This study, acknowledging the importance of integrating Web 2.0 tools in ESP teaching, the role of teachers in the implementation of innovations, and the significance of Vocational Education attempts to investigate ESP teachers' attitudes towards Wikis in Upper Secondary Vocational schools in Greece, identify the perceived effectiveness of Wikis and assess the role of various factors on their use. Its sample consists of fifty ESP practitioners ($n=50$) during the school-years 2021-23. It adopts a quantitative paradigm and uses SPSS (version 24) and Content Analysis to treat its data. The study reveals teachers' positive attitudes towards collaborative writing and the integration of ICT tools but neutral attitudes towards the perceived effectiveness of Wikis. It shows restricted usage of the tool but reveals teachers' willingness to use the tool in the future. The main obstacles to its use are time restrictions, lack of training, and lack of equipment. The findings show positive correlation between the use of Wikis and the year of the study, teachers' education, their attitudes towards collaborative tasks, and the perceptions of Wikis. The relatively small sample and its consistency restricts the generalizability of the findings. Teachers' positive attitudes need to be sustained and the practical constraints be addressed.

Keywords: Web 2.0 tools, Wikis, Vocational Schools (EPAL), English for Specific Purposes, Collaborative writing

Η διερεύνηση των στάσεων των καθηγητών Αγγλικών για Ειδικούς Σκοπούς σχετικά με τη χρήση Wikis στη διδασκαλία του γραπτού λόγου στα Επαγγελματικά Λύκεια

Περίληψη

Ο ρόλος των εργαλείων Ιστού 2.0 γίνεται όλο και πιο εμφανής. Οι περισσότερες έρευνες εστιάζουν στις στάσεις των μαθητών απέναντι στα εργαλεία αυτά. Αναγνωρίζοντας τη σημασία της εισαγωγής ψηφιακών εργαλείων στη διδασκαλία των Αγγλικών για Ειδικούς Σκοπούς, τη σημασία της Επαγγελματικής Εκπαίδευσης στην Ελλάδα και το ρόλο που παίζουν οι στάσεις των καθηγητών στη(ν) (μη) εφαρμογή καινοτομιών στην εκπαίδευση, η παρούσα μελέτη θέτει ως στόχο της να διερευνήσει τις στάσεις των καθηγητών Αγγλικών για Ειδικούς Σκοπούς απέναντι στη χρήση των Wikis στα Επαγγελματικά Λύκεια στην Ελλάδα. Αναζητά να εξακριβώσει σε πιο βαθμό οι καθηγητές αντιλαμβάνονται τα εργαλεία αυτά ως αποτελεσματικά στη διδασκαλία του γραπτού λόγου και να εκτιμήσει το ρόλο που διαδραματίζουν ποικίλοι παράγοντες στη χρήση των Wikis. Στην έρευνα αυτή συμμετείχαν 50 καθηγητές αγγλικών για Ειδικούς Σκοπούς κατά τη διάρκεια των σχολικών ετών 2021-23. Το ερευνητικό εργαλείο που χρησιμοποιήθηκε ήταν ένα ηλεκτρονικό ερωτηματολόγιο. Τα δεδομένα που συγκεντρώθηκαν αναλύθηκαν με τη χρήση του στατιστικού προγράμματος SPSS (έκδοση 24) καθώς και με ανάλυση περιεχομένου (Content Analysis). Από τα αποτελέσματα διαφαίνεται ότι οι στάσεις των καθηγητών είναι θετικές απέναντι στη συνεργατική γραφή και την ενσωμάτωση εκπαιδευτικών τεχνολογιών. Η συχνότητα χρήσης όμως των Wikis δεν είναι υψηλή. Η πλειοψηφία των συμμετεχόντων είναι ουδέτεροι αναφορικά με το εάν η χρήση της συγκεκριμένης τεχνολογίας συμβάλει στη βελτίωση του γραπτού λόγου. Ο περιορισμένος χρόνος, η έλλειψη εκπαίδευσης, και εξοπλισμού αναφέρθηκαν ως τα κυριότερα εμπόδια για τη μη διευρυμένη χρήση τους. Όμως η ανάλυση περιεχομένου έδειξε ότι οι περισσότεροι συμμετέχοντες είναι πρόθυμοι να χρησιμοποιήσουν το εργαλείο στο μέλλον. Η στατιστική ανάλυση έδειξε ότι υπάρχει συσχετισμός μεταξύ της χρήσης των Wikis και

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επτά παραγόντων- του έτους διεξαγωγής της έρευνας, της εκπαίδευσης των καθηγητών, των στάσεων τους απέναντι στις συνεργατικές εργασίες, της άποψης τους για την ίδια την τεχνολογία των Wikis, και της διδακτικής τους εμπειρίας. Η παρούσα μελέτη χρησιμοποίησε ένα σχετικά μικρό δείγμα αποτελούμενο από μόνο γυναίκες εκπαιδευτικούς το οποίο περιορίζει τη γενίκευση των αποτελεσμάτων της. Τα ευρήματα της έχουν παιδαγωγικές προεκτάσεις. Η θετική στάση των καθηγητών πρέπει να διατηρηθεί και τα όποια εμπόδια να προσπεραστούν άμεσα.

Λέξεις – Κλειδιά: Εργαλεία Ιστού 2.0, Wikis, Επαγγελματικά Λύκεια (ΕΠΑΛ), Αγγλικά για Ειδικούς Σκοπούς, Συνεργατική συγγραφή

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- **List of Abbreviations & Acronyms**

CALL:	Computer-Assisted Language Learning
CEFR:	Common European Framework of Reference for Languages
CMC:	Computer-Mediated Communication
EAP:	English for Academic Purposes
EBE:	English for Business and Economy
EOP:	English for Occupational Purposes
EPAL:	Vocational secondary schools
EFL:	English as a Foreign Language
EGP:	English for General Purposes
ELT:	English Language Teaching
ESAP:	English for Specific Academic Purposes
ESP:	English for Specific Purposes
ESS:	English for Social Sciences
EST:	English for Science and Technology
EVOP:	English for Vocational Purposes
ICT:	Information and Communication Technology
L1:	First Language
L2:	Second Language
OEEK:	Organization for Vocational Education and Training
TVET:	Technical and Vocational Education and Training
VE:	Vocational Education

Introduction

Over the last three decades or more, technology has become ubiquitous and its central role in communication and collaboration has been undisputed. The advent of technology did not leave education intact. The latter evolved to accommodate the new needs that arose in the digital era. The speed, however, at which technology is affecting society in the 21st century has been unprecedented to the extent that it has created two groups of citizens; the generation of “digital immigrants” and “the digital natives” (Prensky, 2001). As the terms suggest, the first are those who do not speak the native digital “language” of the “natives”. Given these circumstances, education adjusted to the new trends in society to bridge this generation gap, on the one hand, and eradicate any likelihood of marginalization or unemployment due to one being digital “illiterate”, on the other. As a consequence, soon a plan¹ was proposed to respond to the quick changes in society and promote *digital literacies* (European Commission, 2021) *Digital literacy* (i.e., the acquisition of “basic digital skills and competences from an early age”) (Bonjean, 2018) becomes one of the goals of education in the 21st century. The acquisition of digital skills can be further encouraged with the use of digital tools such as Web 2.0 tools. The term Web 2.0 refers to tools such as Blogs, Wikis, and Google docs, whose affordances are not reduced to merely connecting information, but they extend to communication and knowledge construction (Michael, 2009). Web 2.0 tools “provide the online literacies required for learning in the 21st century” (Guth & Helm, 2010, p.26).

One of the Web 2.0 tools featuring in education is the Wiki. Created in the mid-1990s, as a web-based tool (Leuf & Cunningham, 2001), it became popular in the 21st century with the advent of the social Web (Pegrum, 2011) as multiple interconnected pages

¹ Digital Education Action Plan 2021-27 [Digital Education Action Plan \(2021-2027\) | European Education Area \(europa.eu\)](#)

with loose structure allowing for easy collaboration and editing by multiple users (Leuf & Cunningham, 2001).

The educational value of Wikis has long been acknowledged in English as a Foreign Language (EFL) and has recently gained renewed interest (Alharbi, 2015; Hsu & Lo, 2018; Vahedipour & Rezvani, 2017). Yet, the use of such technologies causes certain challenges to those involved in the process of teaching/ learning. Teachers need to adapt their pedagogical practices to respond to new demands. However, one prerequisite for the successful implementation of technology is teachers' knowledge of the new tools and their confidence in using them. This will further affect their attitudes towards the (non-) implementation of the tools. Therefore, trying to identify teachers' competences and attitudes is one important dimension in educational research.

To this day, the research conducted in the field has left teachers' attitudes of English for Specific Purposes aside. A body of research has been predominantly concerned with the use of Wikis in collaborative writing tasks (Sze, 2008). Some of the findings show that they can facilitate feedback (Gharehbagh et al., 2019), prioritize attention to form (Nami & Marandi, 2014) and reduce anxiety levels (Iksan & Halim, 2018). Recently, however, there has been a number of studies focusing on the ESP context. Some of these studies focus on the use of Wikis in ESP. Taken together the results of these studies suggest improved ESP (EAP) writing and social skills, increased students' participation, collaboration, and motivation (Bradley et al., 2010; Sun & Qiu, 2014; Wang, 2014). While some others reveal positive teachers' attitudes towards the new technology (Albirini, 2006; Burksaitienė & Selevičienė, 2017; Gilakjani & Leong, 2012; Kia Heirati & Alashti, 2015; Sadaf et al., 2012; Shin & Son, 2007).

In Greek speaking countries studies whose focus is on ESP and the use of writing tools do not abound with some rare exceptions (Papadima-Sophocleous & Yerou, 2013). Although some studies investigated primary and secondary school teachers' perceptions of Wikis (Karkoulia, 2016; Tzotzou, 2018), the integration of computer-supported collaborative learning in the Greek compulsory education system

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(Jimoyiannis et al., 2013; Mexi & Vlachos, 2014), and private education (Kontogeorgi, 2014), the field of ESP in Greece remains poorly investigated. Only one study investigated the use of digital tools in ESP and a second one focused on students' attitudes towards the use of Wikis in English for Specific Academic Purposes (Dogoriti & Pange, 2012; Papadima-Sophocleous & Yerou, 2013). However valuable these contributions might have been, the ESP field in Greece needs to be further investigated with the emphasis on Vocational Education (VE) and Upper Secondary Vocational schools (henceforth EPAL). Although a study explored ESP practitioners' needs in the Organization for Vocational Education and Training in Greece (OEEK) (Chostelidou et al., 2009), so far, there has been no study, to the best of my knowledge, to examine ESP practitioners' attitudes towards the use of Wikis in ESP writing instruction, in the EPAL context.

This gap in research is what this thesis aspires to bridge and the reasons are pressing. Firstly, one of the major factors affecting the implementation of any innovation is "teacher's attitude towards the innovation, the understanding of the innovation, and the judgements of the feasibility and practicality of the innovation" (Karavas-Doukas, 1995, p.53). Secondly, Vocational Education (VE) has become an area of interest as that type of education which provides for the skills required in the labour market, and hence as a means to alleviate poverty (UNESCO, 2005, as cited in Hollander & Mar, 2009, p. 41). Lastly, Greece should make several changes in its education system to cope with the high levels of youth unemployment as it lags behind many other countries (Petkovic & Williamson, 2015). It should, therefore, "address [...] the inefficiencies that are inherent in an outdated, ineffective centralised education structure²" (OECD, 2021, p. 3).

Taking these factors into account, this study seeks to shed some light on EPAL by attempting to provide answers as to a) what ESP teachers' attitudes are towards using

2 [OECD Skills Outlook 2021: Learning for Life | en | OECD](#)
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collaborative writing and assess the application of ICT tools; b) what ESP teachers' attitudes towards Wikis are and c) what factors may influence their use.

To this end, this study follows a quantitative design by employing an online questionnaire and uses correlational statistics (SPSS version 24) and content analysis to treat the data.

As far as the structure of this thesis is concerned, it consists of five chapters. Chapter 1 introduces the context of EPAL, defines the term English for Specific Purposes (ESP) and ends with the use of ESP in EPAL. Chapter 2 begins with a presentation of the approaches to ESP writing and the history of computer-assisted language learning (CALL). It, then, presents a literature review focusing on Wikis and attempts a critical analysis of relevant studies regarding the benefits, the attitudes towards Wikis both in EFL and ESP contexts and the challenges they present. Chapter 3 discusses the research design. Chapter 4 presents the major findings of the study which address the three research questions. Chapter 5 discusses the findings, presents the implications and limitations of study and concludes with recommendations for future research.

CHAPTER 1: Vocational Education in Greece

1.1 Introduction

This chapter intends to define VE, clarify the term ESP, present relevant research in the Greek VE context, and describe the use of ESP in EPAL schools.

1.2 Technical and Vocational Education and Training

Technical and Vocational Education and Training (TVET) is defined as this type of education which aims at helping learners to acquire all the necessary knowledge and develop those skills which will enable them to enter the labour market. Although various terms have been used over the years to refer to this type of education (e.g., Vocational Education/ Technical Education/ Occupational Education), Technical and Vocational Education is suggested and describes general education which aims at preparing for occupational purposes, responding to the need for lifelong learning and active citizenship, and a means to alleviate poverty (UNESCO, 2005, as cited in Hollander & Mar, 2009).

1.3 Vocational Education in Greece

The European Centre for the Development of Vocational Training focuses on education and training programs to provide for the skills required in the world of work. However, regarding Greece, in the decades to come there will not be many “medium qualified” but only “highly qualified” employees (European Centre for the Development of Vocational Training, 2015). This fact makes great demands on TVET which has to adapt its programs.

Despite the fact that TVET is the only means to increase workers' employability, in Greece, it is still in a transitional phase (Ioannidou, 2014). In fact, it was not until 2013

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that the promotion of TVET through legislation was attempted. However, linking TVET with the labour market is impossible without taking into account skills such as the knowledge of the first foreign language. “More than half of EU employers require knowledge of foreign languages for their jobs” (European Centre for the Development of Vocational Training, 2015, p.5) and given that English is the international language (EIL), which can contribute to the educational, social, and economic life of the citizens, it is surprising that “only 42% of teens know well the first foreign language” (European Centre for the Development of Vocational Training, 2015, p.5). In an EFL context, such as that of Greece, EIL is “neither imperialistic, nor democratic, but rather functional and pragmatic and inherently linked to the country’s development” (Nicholson, 2015, p. 13).

In what follows, I will attempt to define English for Specific Purposes and present its status in EPAL.

1.4 ESP

This subsection aims at clarifying the term ESP by presenting different definitions and a short historical overview.

ESP has gradually become an integral part of EFL since the 1960s. To explain what ESP is, or better what it is not, the tree analogy is often used (Figure 1). The tree shows the relationship of ESP with English Language Teaching (ELT). The uppermost branches of the tree show the purposes for which ESP is used. For example, a learner can learn English for Academic Purposes (EAP), for Occupational/Vocational Purposes (EOP or EVOP). Other branches of ESP can be English for Science and Technology (EST) or English for Business and Economics (EBE), and English for Social Sciences (ESS) (the distinctions have to do with one’s specialism) (Hutchinson & Waters, 1987). However, the tree representation shows that every branch comes from the same trunk; general language teaching. Coming from the same tree and having the same roots, General

English (GE) and ESP are, therefore, two branches of ELT and communication and learning are their primary goals (Hutchinson & Waters, 1987).

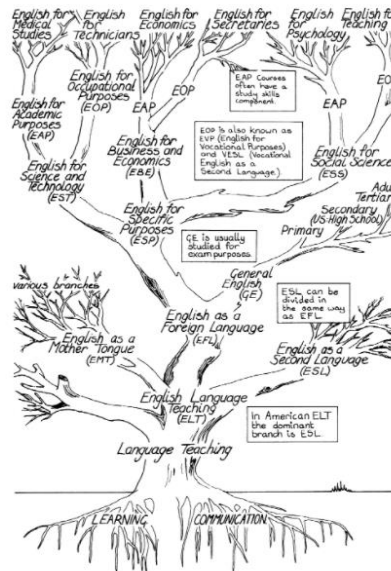


Figure 1 The Tree of ELT (Hatchinson & Waters 1987, p.17)

ESP and GE have several commonalities (Hutchinson & Waters, 1987) but ESP is better described as a process, rather than a product approach, including the specific situation, purpose, and needs of the learners (Hutchinson & Waters, 1987). “ESP is *not* (emphasis theirs) different in kind from any other form of language teaching, in that it should be based in the first instance on principles of effective and efficient learning” (Hutchinson & Waters, 1987, p. 18), although the content may differ. Yet the content of learning is not a specialized variety of English, but a specific *genre*, with its particular features, “typical” features but not exclusive to this particular *genre*. Therefore, some of these typical features need to be taught, since they are likely to be encountered in the target situation. They concern the grammar and the lexis. Yet, it does not mean that there is different grammar for Scientists and another for Hotel Staff (Hutchinson & Waters, 1987). It is the frequency of occurrence of a grammatical form or a lexical item that makes the difference between ESP and GE. Moreover, an imperative in ESP is to identify four factors: the profile of the learner, the reason the place and the time (Figure

2). Only by answering these questions will the ESP practitioner/ material developer/course designer be able to develop the appropriate content and devise the correct methodology to cater to learners' specific needs.

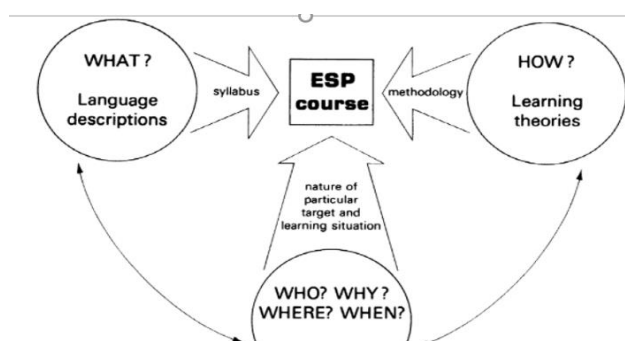


Figure 2 ESP course design (adapted from Hutchinson & Waters, 1987, p. 22)

The most important contribution to the field was that of Dudley-Evans (1997). Dudley-Evans (1997) suggested that in order to make a distinction between the two types of teaching, some basic characteristics need to be taken into account and be divided into two categories: the absolute and the variable characteristics. Following the absolute characteristics, ESP is defined as the process which meets specific needs, uses tasks of different disciplines, and focuses on the appropriate register, discourse and genre (Dudley-Evans, 1997). Following the variable characteristics, ESP is designed for specific disciplines, utilizes a different methodology from that of general English, if required, and usually addresses adults or secondary school students, who have some basic knowledge of the language system and some content knowledge.

To sum up, GE and ESP share several characteristics in theory. Yet, in practice, they have more differences (Hutchinson & Waters; 1987) as in ESP all decisions about the *what* and the *how* is the result of students' reasons for learning and the result of needs analysis.

1.5 ESP in EPAL

In EPAL³ in Greece, English is taught for general purposes and as a subject of several specialties. Teachers, the majority of whom are GE teachers (permanent staff or not) assigned the task of teaching ESP (Chostelidou et al., 2009) are expected to develop in many cases their own material based on students' cognitive and linguistic needs. Add to this the fact that the non-permanent GE (ΠΕ 06) teachers⁴ are every year assigned different posts ranging from kindergarten to EPAL assignments and one understands the additional difficulties their endeavour involves to suddenly be prepared on the spot for EPS classes. They organize their course on the basis of what is provided for them in the Analytical Curriculums⁵ and supplement the coursebooks. The syllabus is specified by the Ministry of Education and a list of books of various Publishing Houses is recommended.⁶

Regarding EPAL, there is a dearth of studies on ESP. Given this gap and the few studies in TVET the study conducted by Chostelidou et al. (2009) gives us an invaluable insight into the Greek ESP teachers' needs. The findings of the study suggest that all ESP practitioners (n=76) from Northern Greece were GE teachers who lacked formal ESP qualifications and had no pre-service ESP training. Less than a half (36%) had completed a Master's program by that time. These teachers reported the need to transform themselves from EFL to ESP teachers, which, in the absence of subject-specific content knowledge, and training in ESP, made them feel insecure about selecting, organizing, and teaching ESP material. At the same time, other difficulties concerned learners' motivation. They had no real interest in the subject probably, due to the heterogeneity of the classes. A serious problem resulting from the fact that ESP classes are formed based on content specificity rather than the fluency of the students

³ Overview | Eurydice (europa.eu)

⁴ ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ & ΘΡΗΣΚΕΥΜΑΤΩΝ - Αναπληρωτές - Οδηγίες (minedu.gov.gr)

⁵ See Operation of Professional Lyceums EPAL. ΑΓΓΛΙΚΑ ΕΠΑΛ (Οδηγίες Διδασκαλίας - Ύλη) - edu.klimaka.gr

⁶ ΑΓΓΛΙΚΑ ΕΠΑΛ (Οδηγίες Διδασκαλίας - Ύλη) - edu.klimaka.gr
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(Chostelidou et al., 2009). This alone makes great demands on ESP teachers, who need to have special class management skills, create material to accommodate different needs, and be aware of different methodologies, all of which are reported as future priorities of any training program (Chostelidou et al., 2009). The ESP teachers reported that ESP methodology should be different from that of the general English classes. They also required guidance in developing ESP material, although only a few required that new technologies should be the focus of future training (Chostelidou et al., 2009). Other needs included training in designing activities (53,42 %) and teaching productive skills (52,78 %). Their difficulties regarded students' lack of motivation, interest in certain tasks (Chostelidou et al., 2009).

1.6 Conclusion

The first chapter attempted to set the stage for the research conducted in this study. It presented the reasons why TVET has been the focus of attention in Europe over the last years and explained why EPAL schools became the center of interest of this study. It defined what ESP is and described the status of ESP in EPAL along with relevant research. The next chapter will discuss how writing skills are developed and what the use of ICT tools is in this direction.

CHAPTER 2: Writing Skills in ESP

2.1 Introduction

This chapter presents the approaches to ESP writing. It then discusses collaborative writing and the use of ICT tools. It ends with a presentation of research on Wikis in writing classrooms, the advantage and the challenges to their use and the attitudes towards them.

2.2 Writing in ESP

Writing in ESP entails knowledge of *discourse*⁷ and *genre*. Such knowledge is significant in ESP writing as there are certain norms (expectations and conventions) that the members of a discourse community, of which a writer aspires to be a member, expect to see in a written text. These conventions concern the “structure, the language, and the rhetoric of the particular genre” (Dudley-Evans et al., 1998, p. 115). Concerning writing skills in ESP, the ESP instructor should shift their students' attention to rhetorical patterns of text organization within their specialist area of use. For example, they should enable their students to produce subject-specific texts using appropriate lexis and follow a specific textual pattern, specific rhetoric structure. Nowadays the use of word processors, requires multiple skills including ICT skills. Therefore, the ESP writing instructor's responsibilities increase.

In the following subsections, I will present the three different approaches to ESP writing the product-oriented, the process-oriented and the social constructionist approach.

⁷ The term *discourse* refers to the study of texts “at a level above that of the sentence (Dudley-Evans et al., 1998, p. 87)

2.2.1 The Product-oriented Approach in ESP

The product-oriented approach corresponds to the first stage of ESP in the 1960s. It was a product-based approach with the focus being on the level of a sentence and the grammar/ lexis of a particular discipline (Anthony, 2011).

In the product-oriented approach the focus is on the *what*; the end-product and the particular features of the text which differentiate it from other genres (Dudley-Evans et al., 1998). The process entails three phases: presentation and analysis of a model text, and production of a similar one (Dudley-Evans et al., 1998). Although this approach was in the beginning more of an automatic one or simply a copy of the model with slight changes, it seems to have earned credibility.

2.2.2 The Process-oriented Approach

As ESP passed into the second stage of its development, the main focus of ESP writing shifted. Primarily influenced by rhetorical and discourse analysis, the process-approach shifts its focus from the micro level (sentence level) to the macro level (paragraphs and complete texts), from an over-concern about accuracy to text structure by examining how different disciplines had an effect on register (Anthony, 2011). This approach consists of three stages: the thinking stage, a process stage, and a conclusion (Dudley-Evans et al., 1998). The first stage can be divided in the following steps: generate, select, group and order ideas.

The process includes a first and several subsequent drafts, since multiple reviews and revisions are made throughout the writing process (Robinson, 1991, as cited in Dudley-Evans et al., 1998). In writing classes, editing and reviewing can be done by peers in group work. The primary goal of this approach was to shift ESP students' attention from the sentence-level to paragraph/ text structure (Dudley-Evans et al., 1998). This approach had great appeal as ESP has been defined as an approach to learning/ rather than a product.

2.2.3 The Social Constructionist Approach

The social-constructionist approach within the Socio-Cultural Theory (SCT) realm views writing as a social act and places the writer in the context of writing. The context is of great significance since it is this which allows or forbids the writer from expressing themselves (Dudley-Evans et al., 1998).

In ESP a balanced approach, which combines the positive elements of all the approaches and places the learner into the context seems to better accommodate the needs of the ESP writing class (Dudley-Evans et al., 1998). Yet, despite this acknowledgment, the massive use of computers and the development of corpus linguistics after the 1990s led again to more product-based approaches (Anthony, 2011).

However, social constructivist approaches to L2 language and literacy⁸ development have gathered momentum over the last decades and writing has been viewed again as a social act. Influenced by the work of Vygotsky (1978), these approaches to literacy consider social interaction as the sine qua non of learning. In this view, learning is co-constructed and language is central to this construction (Barton, 2007). With the assistance of more capable peers, less capable ones pass through 'the Zone of proximal development' (ZPD (i.e., from what less competent peers are able to do with and without the assistance of more knowledgeable ones) (Vygotsky, 1980). This help perceived as *scaffolding* (Bruner, 2006) is mediated by language; *collaborative dialogue* and *linguaging*⁹. Through collaborative dialogue, learners are granted the opportunity to focus on both meaning and form while jointly constructing texts or artifacts (Swain & Lapkin, 1995).

⁸ The concept of literacy includes reading and writing (Barton, 2017).

⁹ Linguaging is use of language to make meaning and create knowledge (Swain & Watanabe, 2012).

Collaboration while creating a written text is advantageous for the writing product itself but, most importantly, to the learners¹⁰, who share knowledge and practice their critical thinking skills (Scardamalia & Bereiter, 1986).

Nowadays, Web 2.0 tools offer more chances for collaboration, thus promoting writing as a social act. In what follows, we will see the various phases of CALL and research on Web 2.0 tools.

2.3 The History of CALL

CALL has a long history in ESL classrooms (Warschauer & Healey, 1998) starting in the 60s with *behaviouristic* CALL, and later with *communicative*, and *integrative* CALL (Warschauer & Healey, 1998). The aim of technology during the first stage (use of computers for drills) was to help students acquire foreign language skills (Guth & Helm, 2012). However, *communicative* CALL (focus on language as a medium of communication) emerged in the late 1970s and early 1980s when the behaviourist theory and the audio-lingual approach started to lose ground and the cognitive approach to language gathered momentum (Warschauer & Healey, 1998). *Communicative* CALL was not without its critics either as socio-cognitive approaches to language learning, task-based, and project-based methodologies flourished (Warschauer & Healey, 1998). *Integrative* CALL, was a way to engage students in more authentic situations where technology would be fully integrated (Warschauer & Healey, 1998).

In the 21st century, the implementation of new technologies in ESL falls into one of these three paradigms, but the advent of the social web has favoured the integration of real tasks. New technologies, nowadays, aim at helping learners acquire *new literacies* (Lankshear & Knobel, 2008) *multiliteracies* (Cope & Kalantzis, 2009), *electronic literacies* (Warschauer, 1998) along with language skills.

¹⁰ The creation of small writing groups, who share the same interests, reflects *small cultures* namely, "[...] small social groupings [...] where there is cohesive behaviour" (Holliday, 1999, p.237).
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2.4 Collaborative Writing and the Use of Web 2.0 Tools

The merits of collaborative writing are acknowledged for the most part. However, ESL teachers have, for long, been unwilling to embed new technologies in collaborative writing instruction as an easy way out, or, even, as a waste of time (Hyland, 2021). Consequently, for a long time there had been a dearth of research on the potential benefits of technology on the development of L2 writing skills (Braine, 1997). Despite the absence of abundant literature, the existing body of research shows several positive findings.

Regarding writing and the use of technology, research shows that they offer a lot of benefits. Writing becomes easier when it is computer-assisted (Warschauer & Healey, 1998), various learning styles are better accommodated for (Huang & Chuang, 2016) and writing performance is enhanced with the use of technology as a recent meta-analysis shows (Seyyedrezaei et al., 2022).

Web 2.0 tools, unlike web 1.0 *read-only tools*, enable the user to both collaborate and generate content (O'Reilly, 2007), thus assisting collaborative writing. As social writing platforms, they facilitate “participatory publishing [...] sharing, collaboration and feedback, interactivity and evaluation” (Michael, 2009, p.22). The focus on dynamic interactions, scaffolding (Li & Kim, 2016), and flexibility (Guth & Helm, 2010) has been the focus of recent research with positive findings in favour of the tools.

The writers are more careful when considering their readership (Kuteeva, 2011) and participate equally (Beauvois, 1992). This is in line with previous findings, which show that when students write for a real audience using writing tools, they make more careful lexical choices and more contributions (Beauvois, 1992; Kelm, 1992; Kern, 1995). Research shows that online collaboration allows learners to focus on a variety of skills (Lund, 2008). In fact, both collaborative learning and students' second language (L2) reading proficiency is fostered with the use of Web 2.0 tools as well as their exploratory learning skills (Bikowski & Vithanage, 2016).

Another benefit is closely related to students' familiarization with the tools. The ubiquity of technology, in everyday life, implies learners' familiarization with new technologies which, in turn, results in a certain degree of confidence (Smith, 2004). For example, Web 2.0 tools offer learners the opportunity to be exposed to multimodal texts¹¹ (Hyland, 2015) such as Blogs, Web pages which have already been part of students' lives.

A further advantage is associated with 21st century skills. Web 2.0 tools “provide the online literacies required for learning in the 21st century [and help learners] acquire non-linguistic competences” (Guth & Helm, 2010, p.26). They are likely to achieve a high level of autonomy, individual responsibility, and increase their capability in a wide variety of digital literacies (Guth & Helm, 2010). O'Dowd (2010) points out that foreign language (FL) learners need to use technology not merely to learn from it but also to combine language with e-skills or new literacies to be able to work and collaborate in new contexts.

2.5 Wikis

Among Web 2.0 tools, prominent position hold Wikis. Created by Cunningham (1995), they were referred to as “What You See Is What You Get” (WYSIWYG) tool for internet-based use (Leuf & Cunningham, 2001) and their name derives from the Hawain word for *quick* “*wiki wiki*” (Godwin-Jones, 2003, p.15).

However, it had not been until the advent of the social Web, in the 21st century, that Wikis became popular (Pegrum, 2011). Wikis are broadly defined as easy-to-use pages with a loose structure (Leuf & Cunningham, 2001), “linked in multiple ways to each other and to Internet resources” (Godwin-Jones, 2003, p. 15). In this open-editing environment, anyone can edit any page by simply “clicking on the edit this page button” (Godwin-Jones, 2003, p. 15). The most noticeable example of an open-editing and

¹¹ Texts that combine more than one mode of communication.
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review structure, and, by extension, a social writing platform is Wikipedia¹² the online encyclopaedia, whose users can edit its entries, thus contributing to its content (Alexander, 2006).

Wikis make collaborative writing a lot easier. It is, in fact, more feasible to start a Wiki text entry at any time than it is to meet fellow students and instructors face-to-face and start writing a text or a book (Alexander, 2006). Additionally, they allow for synchronous, text-based, dynamic interaction (Li & Zhu, 2013).

As shown in the previous sections, text-based computer-mediated communication (CMC) offers chances for dynamic interaction¹³ and learning (Li & Zhu, 2013), since it gives writers and readers the opportunity to focus on meaning as well as on form through noticing¹⁴ errors, proposing changes, or eliciting answers. Wikis create these opportunities and their effects on writing skills have been found to be positive (Gharehbagh et al., 2019).

2.5.1 Wikis in EFL

Although the use of Wikis has long been adopted by L2 instructors, there is a dearth of empirical evidence regarding L2 writing. However, the current body of research points to the potential effects of Wikis. A perusal of the existing literature shows that the focal point of research has been the use of Wiki-based collaborative writing and the role of tasks, students' and teachers' attitudes, the writing process itself, the product of the writing process, and the interaction patterns which emerge during Wiki-based projects.

¹² Wikipedia (http://en.wikipedia.org/wiki/Main_Page)

¹³ The role of interaction has been emphasized and extensively researched by Long (1998) in his Interaction Hypothesis, the premises of which lie heavily on social constructivism. Interaction is necessary for effective learning through which opportunities for increased corrective feedback, increased input, and comprehensible output are created (Long et al., 1998).

¹⁴ Noticing is the “necessary and sufficient condition for converting input to intake” (Schmidt, 1990, p.129)

Given the impact of Socio-Cultural Theory, it is no surprise that task-based instruction as a learner-centred pedagogy in tandem with socio-constructivist approaches¹⁵ (Ellis, 1991) became popular in the 21st century. Under the influence of such theories of language, the task¹⁶ was highly held in collaborative writing. In Wiki-based collaborative writing, tasks became an integral part of the process and Wikis were shown to correlate well with “tasks which require cooperation”(Guo & Stevens, 2011, p.235). Therefore, a first line of research focuses on the use of Wikis in task-based approaches and explores the effects of Web 2.0 tools on both the writing process and the product itself (Alharbi, 2015; Chao & Lo, 2011; Elola & Oskoz, 2010; Hsu & Lo, 2018; Kessler & Bikowski, 2010; Kost, 2011; Mak & Coniam, 2008; Nami & Marandi, 2014; Woo et al., 2011). Taken together the findings of these studies suggest that when properly embedded, Wiki-based instruction with the use of authentic, multi-dimensional tasks have positive effects on writing skills, since corrective feedback given by peers along with the fact that there is a real audience to address, urge Wiki users to pool their linguistic resources, offer corrective feedback, pay attention to both form and meaning (although not always equally so) and eventually create a product of high quality.

A second line of research focuses on learners' attitudes about the potential effect of Wikis in collaborative writing (Chao & Lom 2009; Elola Oskoz, 2010; Kost, 2011; Lee, 2010; Lee & Wang, 2013; Lund, 2008; Mak & Coniam, 2008; Woo et al., 2011). The most remarkable findings suggest that students' experience with the tool was engaging and pleasant (Kost, 2011; Wang, 2014). There was real interest and high motivation levels when writing for a real audience (Alharbi, 2015; Lee, 2010) and low levels of anxiety (Iksan & Halim, 2018).

¹⁵ The socio-constructivist approaches place great emphasis on the “dialogic processes such as ‘scaffolding’ (Ellis, 2000, p. 193).

¹⁶ Activities whose i) primary focus is on meaning; ii) there is some kind of gap; iii) learners are required to use their own linguistic resources to achieve communicative outcome (Ellis, 1991).

With regards to ESP teachers' attitudes, research reveals consistently positive attitudes but restricted usage and almost always the same major hindrances both in Greece (Karkoulia, 2016; Tsourapa, 2018;) and in other countries (Albirini, 2006; Burkšaitienė & Selevičienė, 2017; Kia Heirati & Alashti, 2015; Sabzian & Gilakjani, 2013; Sadaf et al., 2012; Shin & Son, 2007).

For example, Karkoulia (2016) sought to investigate the attitudes of EFL teachers (n=135) using questionnaires as her methodological tool. The researcher found an overall positive attitude towards web 2.0 tools. Yet, the findings suggest that Web 2.0 tools are not frequently used partly due to time restrictions and equipment limitations and partly due to the absence of teachers' training.

The same conclusions were drawn from another study among Greek EFL teachers (n=121) (Tsourapa, 2018). This quantitative study reported teachers' positive attitudes towards the use of educational technology and the same obstacles to their use.

2.5.2 Wikis in ESP

A different line of research comes from the field of ESP. Although technologies in EFL have been widely researched, the same is not true about ESP. In a recent literature review, Dashtestani and Stojkovic (2016) do not observe the same abundance of empirical research. The authors found only 55 research studies, of which only a small number focuses on Wikis (Dashtestani & Stojkovic, 2016). Those studies show improved ESP (EAP) writing and social skills, increased students' participation, collaboration, and motivation (Bradley et al., 2010; Sun & Qiu, 2014; Wang, 2014).

Another study (Bubas & Kovačić, 2008) used questionnaires to investigate students' attitudes after a Wiki page had been introduced in university ESP courses for Web-oriented learning activities. The researchers concluded that the use of Wikis was greeted with enthusiasm as it brought "the classroom into the real world that the students inhabit" (Bubas & Kovačić, 2008, p. 9).

Using a different method, Sun and Qui's (2014) case study involved an experimental design with a control and experimental group. Using a pre- and a post-test, the researchers concluded that the experimental group outperformed the control group in terms of academic writing skills after the intervention (Sun & Qiu, 2014).

In a similar context, Wang (2015) used two instruments (tests and questionnaires) to explore the efficacy of Wikis in a Business English class. The findings showed that students held positive experience after the application of the tool and had increased interest in language. Wikis helped foster the much-required, work-related collaboration skills (Wang, 2015).

These positive findings are corroborated by other studies. Dashtestani and Stojkovic, (2016) observed that Wikis fostered students' positive attitudes and enhanced their computer literacy while enhancing academic skills. Using questionnaires and interviews, the researchers concluded that participants' attitudes were positive regarding the acquisition of academic vocabulary, the development of reading comprehension and writing skills.

Two other studies were conducted in the field of ESP (Hadjiconstantinou & Yerou, 2010; Papadima-Sophocleous & Yerou, 2013). Papadima-Sophocleous-Yerou (2013) collected qualitative data through a mixed method approach (questionnaires and reflective journals) and sought to explore students' attitudes. The findings showed positive attitudes towards Wikis and an increase in computer literacy along with social and academic skills.

In a previous study with a large number of participants (n=304) again using a questionnaire as its research tool, Hadjiconstantinou and Yerou (2010) reported students' self-fulfilment, pride, and a sense of belonging to an online community. The researchers reported that Wikis, as hyper-linked sets of web pages, offer the opportunity to link various sources of information and create reports, presentations, and graphic design, all of which facilitate the creation of a digital portfolio and foster digital literacy.

Besides, the course content was created collaboratively which, in turn, proved to be particularly essential in the absence of a specific ESAP textbook (Hadjiconstantinou & Yerou, 2010).

In a follow-up small-scale study, Papadima-Sophocleous and Yerou (2013) implemented a one-semester Wiki-based task. The 33 participants reported that Wikis enabled them to interpret data using appropriate language and build their digital portfolios.

Unlike the studies examined so far, Kuteeva (2011) used a more elaborate study design although the study was small with a few participants (n=19). The study used a mixed method design to conclude that Wikis improved academic writing skills, both in terms of grammatical accuracy and structural cohesion and allowed the students to better perceive their audience's needs afterwards. The fact that grammatical accuracy was enhanced contrasts sharply with previous findings in the EFL research but may, in part, be attributed to age and fluency discrepancies among the participants in these studies. A different body of research shifts attention to instructors' attitudes. Considered together the findings of several studies (Albirini, 2006; Burkšaitienė & Selevičienė, 2017; Gilakjani & Leong, 2012; Kia Heirati & Alashti, 2015; Sadaf et al., 2012; Shin & Son, 2007) suggest that teachers' attitudes are equally positive towards CALL. For example, in Burkšaitienė and Selevičienė's (2017) small-scale study, the data were collected through questionnaires and analysed using descriptive and correlational statistics. The Lithuanian university and college ESP instructors (n=39) of that study viewed Wikis positively and considered themselves perfectly capable of using educational technologies. In another study the findings also suggest that pre-service teachers' positive attitudes and willingness to utilize Web 2.0 tools was associated with their perception of this technology (Sadaf et al., 2012).

In Greece, the relevant research focusing on EPAL (ESP) teachers' attitudes is non-existent. Yet, one researcher sought to find tertiary education ESP teachers' attitudes towards virtual learning environments (Dogoriti & Pange, 2012). Another researcher

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focused on the training needs and perceptions of ESP teachers at the Organisation for Vocational Education and Training (OEEK) (Chostelidou et al., 2009). In Dogoriti and Pange's (2012) study higher education ESP practitioners (n=97) participated in an online survey. Their responses to the questionnaire showed that the vast majority prefer the use of texts books and do not use ICT tools in their workflow. Although they hold positive attitudes towards the ICT tools, they are reluctant to use them in their classes. The factor of age was positively correlated with the use of ICT tools as well as the level of their studies.

To sum up, multiple seem to be the benefits of the use of Web 2.0 tools for all stakeholders and the end product. However, caution must be exercised when making generalizations about the potential effectiveness of educational tools and the positive attitudes of students and teachers. Firstly, because of the size of the sample in the vast majority of the studies and secondly due to the file drawer problem (Zaphiris et al., 2004, as cited in Papadima-Sophocleous & Yerou, 2013).

2.6 Challenges in the Use of Wikis

Some of the aforementioned studies presented several challenges concerning Wikis. Apart from the issues regarding agency and collaboration, which may be attributed to the collaborative work per se (Lund, 2008), some other drawbacks are associated with the learning-centred process and technical glitches.

Conole (2006) reported participants' dissatisfaction with the misuse of the Web 2.0 tools and instructors' inability to incorporate them (Conole, 2006, as cited in Deters et al., 2010) the students' discomfort with Wikis as part of a learner-centered methodology.

Lee (2010) made another observation regarding *agency*, which in the modernist idea of selves, reflects *self-autonomy* (Vitanova, 2010). The students collaborated effectively and were attentive to errors and lexis during the Wiki-mediated task. However, half of the participants were willing to alter ("*edit*") others' contributions due to lack of

confidence. This observation about editing others' work, namely, considerations about agency echoes that made by Lund (2008), although in that case they were the authors of the post who expressed their discomfort when someone else changed their contributions. This finding is in line with another study (Arnold et al., 2012) which showed lack of contribution on the part of a minority of learners. Kessler and Bikowski (2010) point out another problem related to *co-authoring* and the diminished sense of collaborative authorship, although *co-authoring* has been lately a widespread practice in modern discursive practices (Lunsford & Ede, 1991). They found that the unequal contribution to discourse when using Wikis in large groups may be partly due to the diminished sense of *authorship* as felt in groups of novice writers. In fact, if collaborative writing results from common mindedness it can be hindered when the participants do not hold the same views. These are usually participants who hold more author-centric perspectives of textual ownership; that is, novice writers (Hunter, 2011). In sum, the less experienced the writers are the more problems arise when using collaborative writing tools.

Kessler and Bikowski (2010) highlight a different issue which results from a general prioritizing of meaning over form. More specifically, the participants (n=40) in that study were not attentive to form, and consequently several grammatical errors went unnoticed (Kessler & Bikowski, 2010). Owing to that fact, Kessler and Bikowski (2010) state that teachers' contribution and scaffolding is essential throughout the writing process. Likewise, Elola and Oskoz's (2010) findings fail to fully support the supremacy of the technology in a Wiki-based collaborative writing task. Despite the opportunity to revise work, thus adopting a process-based approach to writing, no significant difference was observed in favour of Wikis. Similarly, Woo et al.'s (2013) study, showed that the nature of participants' (n=119) comments through Wiki-mediated tasks focused only on the content. Before generalising the results of these two studies, it needs to be noted that the lack of accuracy is not exclusively attributed to the

use of Wikis. In most studies presented so far, the participants were young ESL learners¹⁷.

The most common challenges of Wikis are associated with the technology itself. The use of the tool is associated with technical glitches. The lack of automated content and formatting was reported to make greater demands on students as they needed to structure and maintain everything manually (hierarchy, hyperlinks, headings, tables) the content (Bubas & Kovačić, 2008). The interface of the tool is also described as confusing. According to Kavaliauskienė and Anusienė (2010), despite the help offered by the Wiki team, the interface caused confusion. Elsewhere Wikis seemed to be “time-consuming” to create and maintain (Hadjiconstantinou & Yerou, 2010; Karkoulia, 2106; Tsourapa, 2018).

To sum up, although the majority of studies show positive results regarding students' and teachers' attitudes towards Wiki-based collaborative writing, some others reveal several technical challenges regarding the process and the final-product. From the literature review so far, it has become clear that few studies focus on ESP teachers' attitudes and seek to investigate correlations between the Wiki use and other factors. The contribution of this thesis to the field of ESP lies in the fact that it seeks to examine a possible correlation between Wiki use and two independent variables not investigated in the past: the year of the study and collaborative tasks. In fact, previous research

¹⁷ Young learners in the early stages of bilingualism have a strong dependency on their L1 when producing the L2 grammar (Cummins, 1979). Grammatical accuracy occurs much later. It is normal that several grammatical mistakes went unnoticed in Kessler and Bikowski's, (2010) study because of the students' over-dependency on L1 and L1 transfer. Preference for meaning over form, is also justified and it is not the result of the use of Web 2.0 tools. The IP model and what is called “Primacy of Content Words” (VanPatten & Williams, 2014, p117) shows a general preference for lexical items which occurs due to SL learners' limited processing capacity when in the first stages of learning (VanPatten & Williams, 2014).

recommends future investigation of the relationship of Wiki use and task use (Guo & Stevens, 2011). In other words, the first factor was decided upon the hypothesis that “If teachers have an understanding of the tool, (they are on the stage of Knowledge) (Rogers & Shoemaker, 1971), as time passes, they will advance to the stages of Decision making and Implementation , and therefore the use of the tool will increase with the time. The second factor (use of collaborative tasks) was decided based on the findings according to which Wiki use “correlates well with tasks” (Guo & Stevens, 2011, p.235). Therefore, if the correlation is positive, attitudes towards tasks will positively affect attitudes towards Wikis. However, as Wikis were reported to be “time-consuming” (Hadjiconstantinou & Yerou, 2010), they will be used less if more tasks are assigned. Other variables were decided based on previous research findings. As demonstrated in previous studies gender (Umar & Yusoff, 2014) teaching experience, and education attainment (Chostelidou et al., 2009) and age (Dogoriti & Pange, 2009) play their part in relation to ICT integration. Taking all these..... into account, this study set itself the goal of filling in the gap in knowledge by investigating ESP teachers’ attitudes towards the use of Wikis in ESP writing and examining possible correlation between Wiki use and a set of factors.

2.7 Conclusion

This chapter offered a detailed presentation of the approaches to writing in ESP: the process-and product-oriented approach and the social constructionist one. It explained how collaborative writing finds its place within SCT and went on to trace the origins CALL. It, then, showed how writing as a social act or as a process-based approach is facilitated by CALL. The chapter offered an extensive literature review on Wikis in terms of their benefits, the perceptions of their users, and challenges, and concluded by pointing out some potential gaps in knowledge which it plans to bridge. The next chapter presents the research questions as they arose through the perusal of this literature review.

CHAPTER 3: Research Design

3.1 Introduction

This chapter seeks to present the research questions which propelled this study, and describe the methodological tools used to collect and analyse its data.

3.2 Research Questions

The general objective of this study is to identify ESP teachers' perceptions of the effectiveness of Wikis on collaborative writing skills and assess the role of various factors on the use of Wikis.

Its specific objectives are to:

1. Identify ESP teachers' attitudes towards using collaborative writing tasks and assess the application of ICT tools.
2. Identify ESP teachers' attitudes towards Wikis in ESP collaborative writing in ESP.
3. Define the factors that influence the use of Wikis

The research questions this study seeks to address are the following:

RQ1: What are ESP teachers' attitudes towards collaborative writing tasks in ESP writing and the integration of ICT tools?

RQ2: How do ESP teachers perceive a Wiki page as an educational tool for ESP writing instruction?

RQ3: Is there any correlation between the use of Wikis and factors such as gender, working experience, educational attainment, preferred methodology, year of the study?

3.3 Methodology

3.3.1 Research Tool

In order to investigate EPAL teachers' attitudes towards the use of Wikis in ESP writing practices, this small-scale study collected its data by means of an online questionnaire. The questionnaire (Appendix I) was inspired by recommendations for a situation analysis of those "teacher factors" that affect successful instruction (Richard, 2001 as cited in Dewi, 2021) and by other questionnaires (Burkšaitienė & Selevičienė, 2017; Chostelidou et al., 2009; Dörnyei, 2003; Umar & Yusoff, 2014).

The rationale behind this questionnaire stems from the belief that only by exploring the profile of teachers and by collecting data about their needs, styles, and preferences, will we be able to comprehend the factors behind the (non) implementation of innovations. In fact, "teachers are a key role in the successful implementation of curriculum changes" (Richards, 2001, p. 99).

The questionnaire consists of three sections. Section 1 "Personal Data" attempt to identify ESP teachers' profile and detect any possible correlation between demographic and other factors and the (non) implementation of Wikis, thus addressing the 1st research question (R.Q.1 *Is there any correlation between the use of Wikis and factors such as gender, working experience, educational attainment, preferred methodology, year of the study?*). Section 2 "Attitudes towards collaborative tasks and ICT tools" seeks to address the 2nd research question (RQ2: *Do ESP teachers use collaborative tasks and integrate Web 2.0 tools to develop students' collaborative writing skills?*). Section 3 "Attitudes towards the integration of Wikis in ESP writing" seeks to provide answers for the 3rd research question (RQ3: *How do ESP teachers perceive a wiki page as an educational tool to teach ESP writing?*).

The 17 items require a maximum of ten minutes to complete, as shown in a pilot test. It consists of questions of various styles (Likert scale, rating scale, multiple choice, closed-ended questions and one open-ended question) (Dörnyei, 2003). Internal

consistency was measured by Cronbach Alpha coefficient. Item analysis was feasible with the aid of the Reliability procedure of SPSS (version 24). As expected for L2 research, which seeks to investigate various factors at the same time, Cronbach Alpha was not be very high yet within an acceptable range (0.737) greater than 0.70. The questionnaire was electronically administered, and all prospective participants were informed about the purpose of the study and assured that their personal data would be treated with utmost confidentiality (Dörnyei, 2003).

3.4 Sample

The sample data collected from a subset of the larger population of ESP teachers in Greece cover the period between 2021 and 2023. The sample size of this study is fifty (n=50) ESP teachers and was random, representative of the larger population (Utts & Heckard, 2014). A probability sampling plan, where “everyone in the population has a specified probability to be selected for the sample” (Utts & Heckard, 2014, p. 156) was followed. The sample was contacted via social media and email. The questionnaire was posted on the English teachers' ΠΕ 06 and the M.Ed. Teaching English as an International Language group page on Facebook, to randomly selected EPAL schools email addresses, and to a random sample of 400 personal emails of English Language teachers. They were sent a reminder some weeks later. A second prodding was deemed necessary since surveys that “simply use those who respond voluntarily are surely to be biased in favor of those with strong opinions or with time on their hands” (Utts & Heckard, 2014, p.168).

3.5 Methods of Processing & Analyzing Data

During data examination and manipulation processes, there was no need to correct impossible data (Dörnyei, 2003) in closed-ended questions. There were no inaccuracies or mistakes on the part of the respondents, nor were there any contradictory data. No outliers or spurious data were found either and therefore no answers were eradicated

from the data (Dörnyei, 2003). There was no missing data; hence, no need to manipulate data before entering it into the system.

The study uses Social Sciences Statistical Package (SPSS version 24). Its spreadsheet program allows for entering, creating and editing data. For the correlation between various factors and the use of Wikis, this study uses Spearman's correlation for two reasons; it treats ordinal data such as ranks (e.g., levels of proficiency/competence) and Likert scale items (Frost, 2020).

Only the last item of the questionnaire was open-ended and required content analysis (Cohen, et al., 2017; Dörnyei, 2003). The codes in Table 1 were devised to summarize the data following pattern coding (Papadopoulou, 1999 as cited in Chostelidou et al, 2009) after a careful examination of each statement and after having highlighted common key words in several answers (Cohen et al., 2017).

Table 1. Theme and Codes in Context Analysis

THEME REASONS FOR USE	CODE
	MTV (MOTIVATION)
	USF (USEFULNESS)
	CLB (COLLABORATION)
	CLSMNG (BETTER CLASS MANAGEMENT)
	INF (SOURCE OF INFORMATION)
	USFR (USERFRIENDLY TOOL)

3.6 Conclusion

Chapter 3 presented a comprehensive description of the procedure this study followed to collect its data and the research tool it employed. It then explained how statistics and content analysis treated the data.

CHAPTER 4: Research Findings

4.1 Introduction

Chapter 4 presents in detail the findings of this study. It first provides information as to the profile of the respondents and then discusses how these findings address the three research questions.

4.2 Findings

A total of fifty teachers ($n=50$) participated in this study. The vast majority of the participants were women (97,9%) between thirty-five and forty years old (Fig.1) and their average teaching experience ranged between 15-20 years (Fig. 2). Seven out of ten (71%) pursued further studies after the completion of their B.A. Only a very small minority (2,1%) were Ph.D. holders (Fig. 3). The four-fifths (81%) reported English fluency and slightly more than half (52,5%) reported being competent users of ICT (Figure 3).

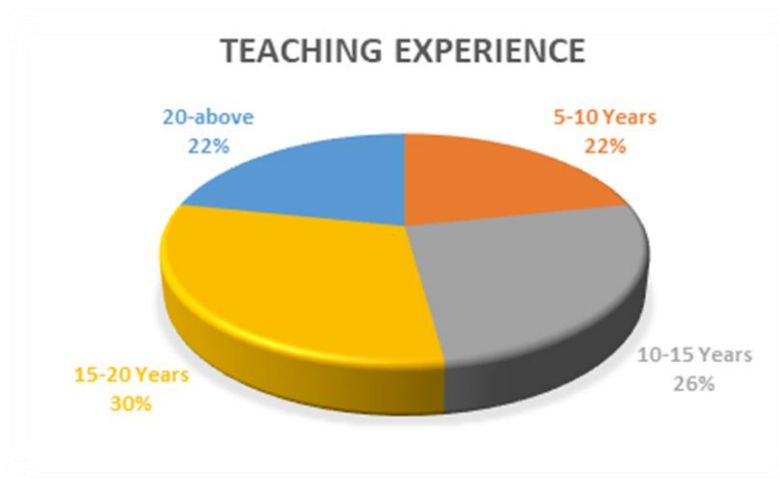


Figure 3. Teaching Experience

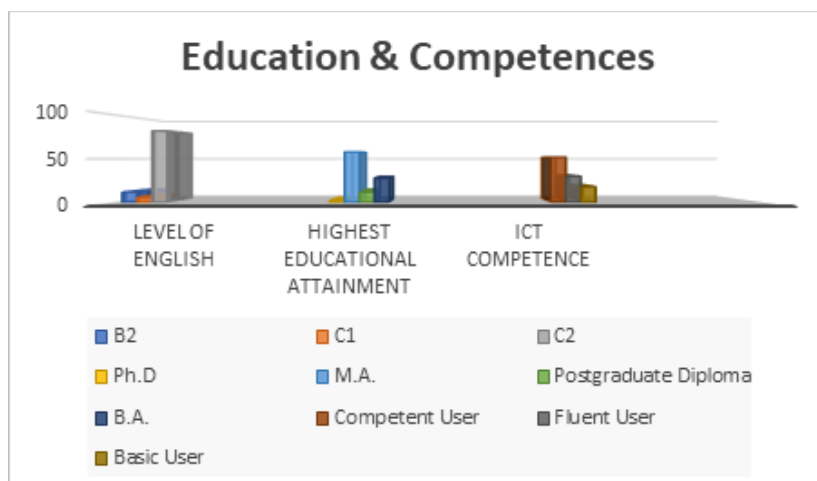


Figure 4. Level of highest educational attainment language fluency & ICT competences

Regarding the first research question (RQ1: *What are ESP teachers' attitudes towards collaborative writing tasks in ESP writing and the integration of ICT tools?*) it seems that overall, teachers' attitudes are positive. They use collaborative tasks /projects and integrate ICT tools. The percentage of the task-based and project-based methodology makes up for just under half (44 %) of the cases. However, almost a quarter (26%) still prefers the Presentation Practice Production (PPP) approach to foster writing skills.

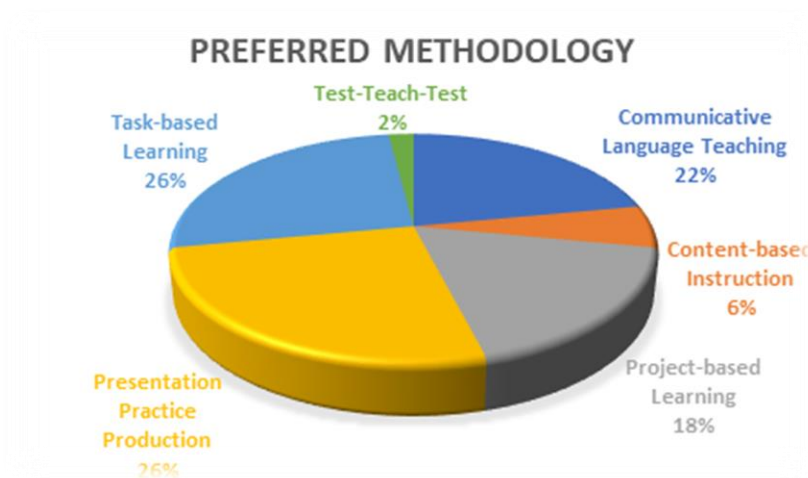


Figure 5. Methodology

The majority of those who use collaborative tasks/projects score scale 3 “*sometimes*” as the frequency with which they assign collaborative tasks; that is above fifty percent of the teaching time (Fig. 6).

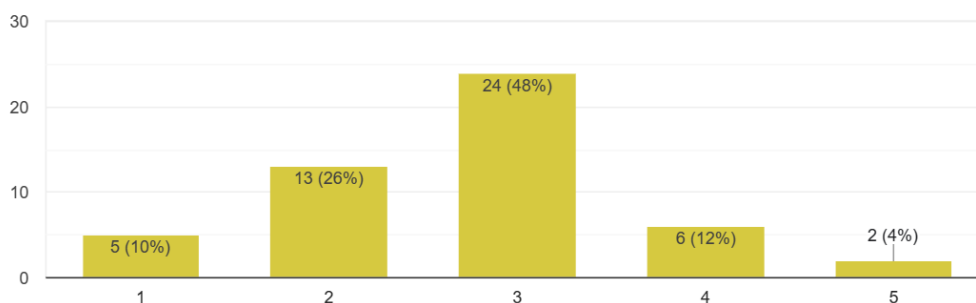


Figure 6. Frequency of use of collaborative tasks

With regards to collaborative tasks, the majority (74%) view them as a positive addition to their class able to increase students' motivation (47%) and offer educational and learning gains (27%). Yet, the statement that they are difficult to implement effectively represents approximately one fifth of the answers (Fig. 7).

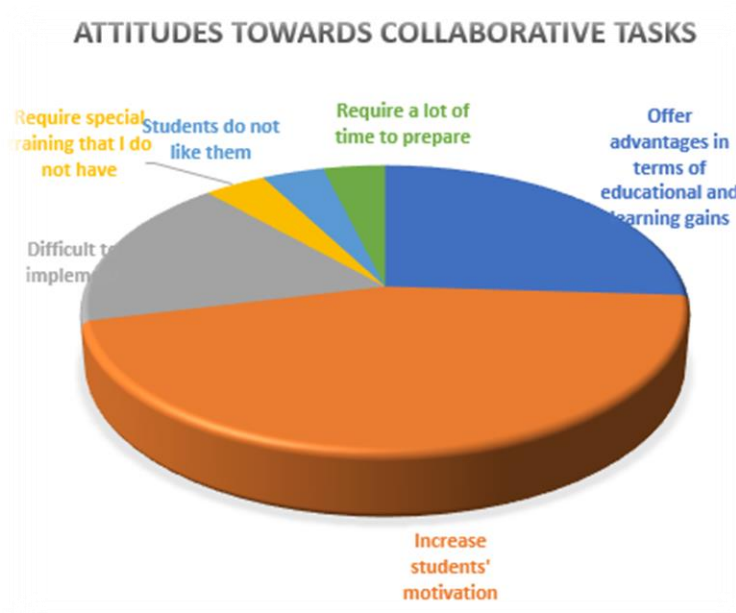


Figure 7 Attitudes towards collaborative tasks

The majority (61%) use online writing tools to support collaborative writing (Fig.8). Approximately one third of the participants (33%) scored the *E-mail* and the *Google docs* as the most popular tools and the second most preferred tool is the Power Point. Wikis are scored as their third choice (Fig. 9).



Figure 8 Attitudes towards online writing tools



Figure 9 ICT Tools

In terms of frequency of use, they scored “*sometimes*”. In other words, in more than fifty percent of the cases (Fig. 10), they use Web tools.

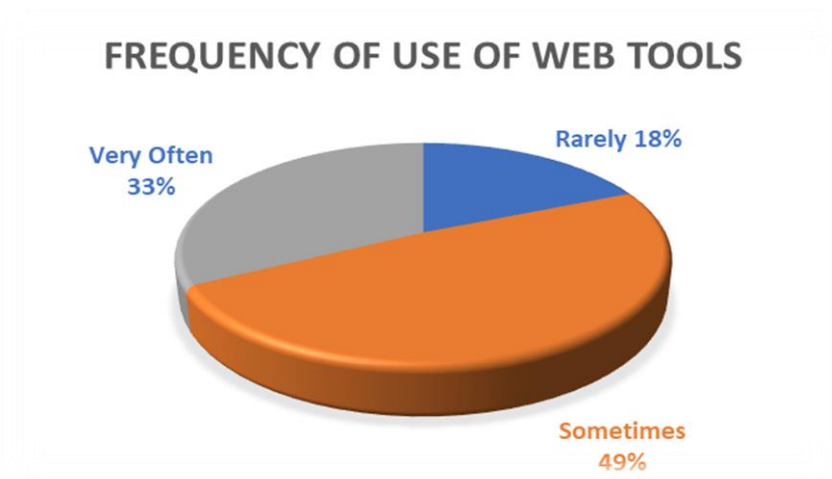


Figure 10 Frequency of use of web tools

Regarding the second research question (RQ2: *How do ESP teachers perceive a Wiki page as an educational tool for ESP writing instruction?*) the answers from the questionnaire in section 3 show that their attitudes are positive towards the tool but its usage is restricted to “sometimes” (Fig. 11).

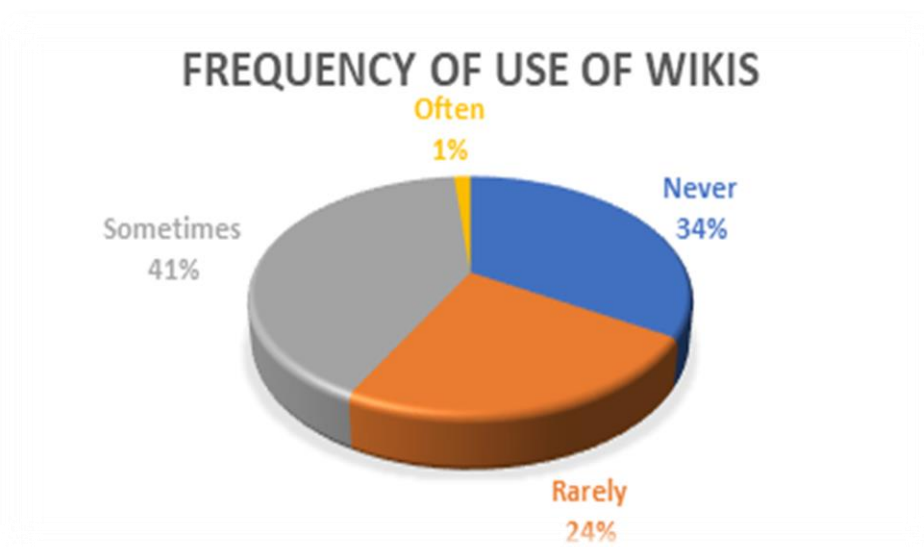


Figure 11 Frequency of use of Wikis

The obstacles hindering a broader application of the tool are the lack of time (46%), the lack of equipment (33%), and the lack of teacher training (20%) among other factors (Fig. 12).



Figure 12. Reasons for the non-use of Wikis

The response to the question as to whether Wikis can improve writing skills is equivocal. Approximately two fifths (38%) remain neutral scoring the middle alternative (scale 3 “*neither agree/ nor disagree*”). The difference, however, between scale 3 (neutral) and scale 4 “*agree*” representing just over a third (36%) is almost negligible. When combined, the positive attitudes (“*agree*”/ “*strongly agree*”) reach an important 48 %. Only a very small percentage of the respondents (4%) state that they “*strongly disagree*” (scale 1) that Wikis can improve writings skills (Fig. 13).

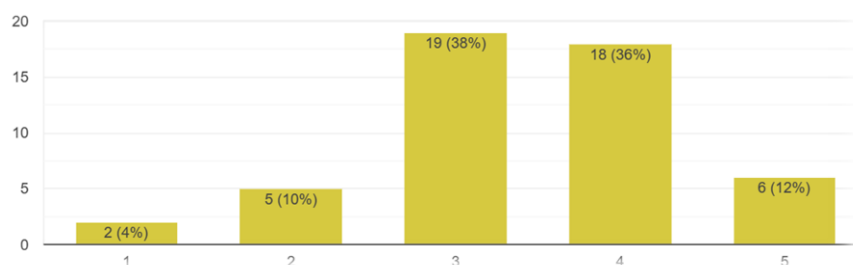


Figure 13. Teachers' perceptions of the effectiveness of Wikis.

As for teachers' perceptions of Wikis, for slightly more than a quarter of the respondents (28%) Wikis can contribute to higher motivation levels (Fig. 14). Similarly, the same number of the participants believe that Wikis can promote student-centred teaching. Yet, it cannot be ignored that for almost one fifth (18%) training is still required in order for Wikis to be used effectively (Fig. 14).

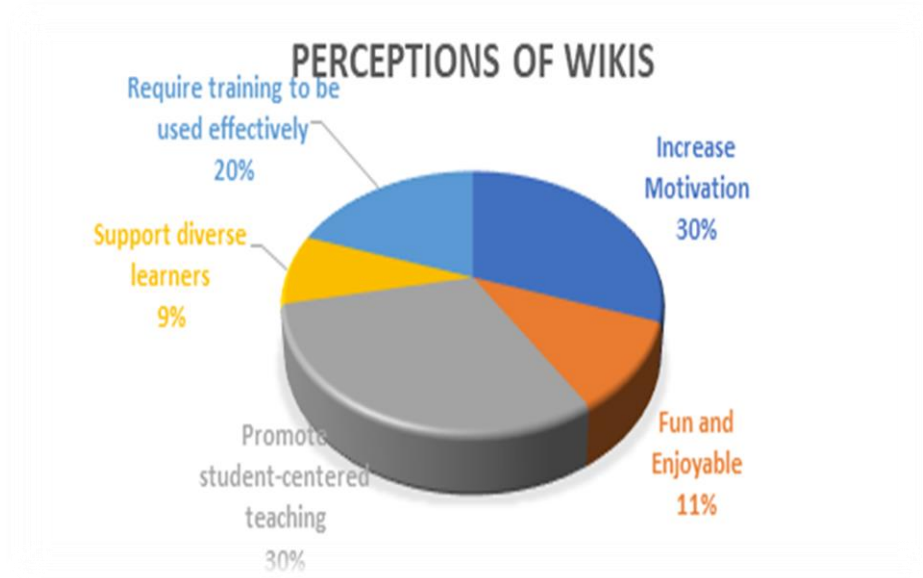


Figure 14 Perceptions of Wikis

Regarding future use, the answers of approximately the three quarters (78%) of the participants show that they are positively inclined towards the tool, and they are highly likely to apply it in the future. (Fig.15).

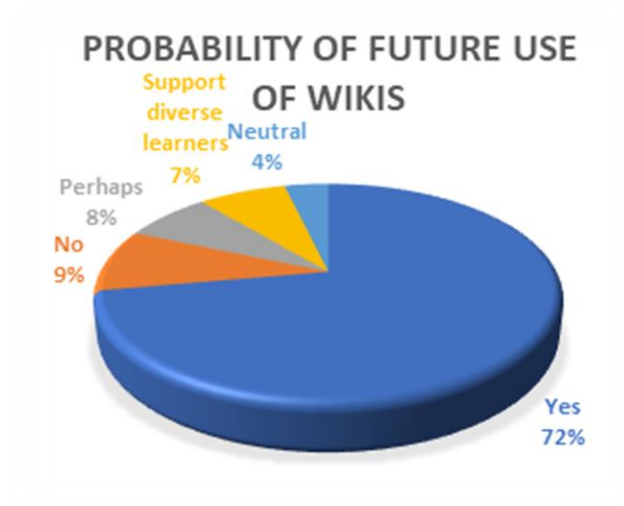


Figure 15 Probability of Future use of Wikis

Content analysis also revealed that those ESP teachers who would use it would do so to increase motivation, because of their perceived usefulness, and for collaboration purposes (Fig. 16)

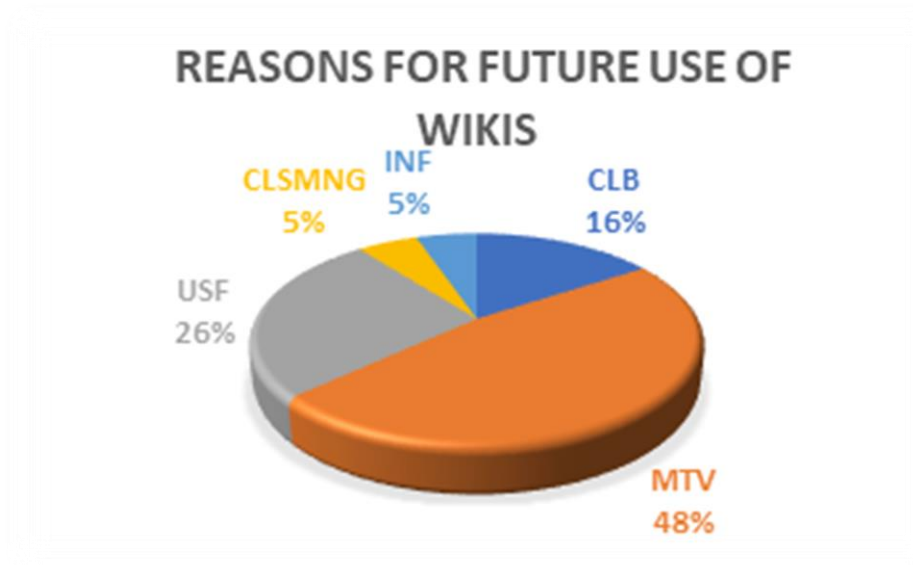


Figure 16 Reasons for future use of Wikis

Regarding the third research question (RQ3: *Is there any correlation between the use of Wikis and factors such as gender, working experience, educational attainment, preferred methodology, year of the study?*), the findings show some interesting correlations (Table 2).

Table 2. Correlation Analysis.

	Spearman's r (rho)	p value	
Year of questionnaire completion	0.344	0.014	
Age	0.183	0.204	
Highest Educational attainment	0.344	0.018	
Level of proficiency in English	0.048	0.740	
Years of teaching experience	0.279	0.05	
Method used to foster writing skills	-0.1	0.490	
Frequency of collaborative tasks assignment	-0.351	0.013	
Attitude towards technology and collaborative writing tasks	0.386	0.006	
Information communication technology competence	-0.230	0.108	
Obstacles for use of Wikis	0.159	0.363	
Perception of Wikis	0.390	0.005	
Gender	-	-	

Correlation coefficient of the factors influencing the use of Wikis.

Level of correlation applying to both positive and negative correlation: 0.000-0.199 negligible; 0.200-0.299 weak; 0.300-0.399 moderate; 0.400-0.699 strong; ≥ 0.700 very strong p value ≤ 0.05 statistically significant

As for the two new factors (time, task), the hypotheses made in the beginning are valid. Indeed, the *year* factor plays an important role ($Rho\ 0.344$; $p=0.014$)⁷. In other words, as the years pass, the use of Wikis increases. As for the *collaborative task* factor, both hypotheses are valid. In fact, teachers' attitudes towards collaborative tasks are positively related with the use of Wikis ($Rho=0.386$; $p=0.006$). Also as expected, the frequency of use of collaborative tasks is inversely correlated with the use of Wikis (as they have been found to be time-consuming). The findings are statistically significant ($Rho= -0.351$; $p=0.013$). Therefore, teachers who favour collaborative tasks use the Wiki tool. However, the more they assign collaborative tasks, the less they use Wikis.

As for previously explored factors, educational attainment is also positively correlated ($Rho= 0.344$; $p=0.018$). The higher their studies, the more probable teachers are to use Wikis. An additional determining factor is teachers' perceptions of Wikis with a statistically significant positive correlation ($Rho=0.390$; $p=0.005$). Positively inclined teachers are more likely to apply the tool. Lastly, teaching experience is highly correlated with the use of Wikis with a value of great statistical significance ($Rho= 0.279$; $p=0.05$). More experienced teachers are more likely to experiment with the tool.

With regards, to participants' age, it could have an effect but the finding is not statistically significant ($Rho=0.183$; $p=0.204$) and neither is the level of English proficiency ($Rho=0.048$; $p=0.740$). Regarding the methodological approach, teacher-centred approaches could have a negative effect on the choice teachers make. The statistical analysis shows a trend to negative correlation but the finding is not statistically important ($Rho=-0.1$; $p=0.490$). At the same time, teachers' ICT competence does not play a major role either ($Rho= -0.230$; $p=0.108$). Finally, the obstacles reported to hinder the broad use of Wikis (time restrictions, lack of ICT tools available, lack of training) were checked for correlation but the results are not statistically significant ($p=0.363$). As for the gender, no correlation analysis was feasible because the sample consisted of female participants (99 %).

4.3 Conclusion

Chapter 4 presented the data and demonstrated how they addressed the three research questions. Teachers' attitudes were found to be positive towards collaborative writing tasks and the integration of technology, but the frequency of their use is limited. The Wiki is scored as their third preference in comparison to other ICT tools, but the findings showed willingness to apply the tool in the future. It revealed various factors that affect the use of Wikis. Chapter 5 discusses how these findings are interpreted in the light of existing research.

CHAPTER 5 Discussion of Findings

5.1 Introduction

This chapter discusses its findings and compares them with relevant research in the field. It offers interpretations of the findings in the field of ESP and concludes with the limitations of this study and some suggestions for future research.

5.2 Discussion

The study investigated the attitudes of ESP teachers in EPAL in Greece towards the integration of the Wikis in writing and the possible correlation of its use and a set of independent variables. Attitudes are important as they have been shown to be a predictive factor of future use of innovations (Ajzen & Fishbein, 2000).

The findings of the study revealed that the majority of the teachers are either M.A. graduates or holders of a Postgraduate Diploma or Ph.D which shows a remarkably positive change in ESP in Vocational Education and contrasts sharply with the picture described in a previous study in the North of Greece (Chostelidou et al., 2009). By that time, only a minority of ESP teachers had completed postgraduate studies. This change might be explained as the result of a remarkable increase in the offer of distance and blended-learning study programs offered by Greek Higher Education Institutions

(Gouvias & Vitsilaki, 2018) or simply by the fact that the samples of these studies come from different geographical areas.

As for the ESP teachers' attitudes towards collaborative writing tasks in ESP writing and the integration of ICT tools, the findings reveal that the majority of the respondents hold positive attitudes towards ICT integration and the use of Wikis to teach ESP writing. The finding is congruent with previous findings in Greece (Demetriadis et al., 2003; Dogoriti & Pange, 2012; Karkoulia, 2016b; Tsourapa, 2018) and internationally (Albirini, 2006; Burksaitienė & Selevičienė, 2017; Gilakjani & Leong, 2012; Kia Heirati & Alashti, 2015; Sadaf et al., 2012; Shin & Son, 2007). For example, in Lithuania, in higher education, the participants (n=39) of a similar study (the same research design) reported positive views towards Web 2.0 tools for ESP and GE (Burksaitienė & Selevičienė, 2017). In the EFL context, in Syria, a similar study with a large sample (n=326) of high school EFL teachers found positive attitudes towards ICT tools (Albirini, 2006). Having and maintaining positive views suggests that when the major obstacles to their use are eliminated, their usage will be broader (Albirini, 2006). In another study in Italy (Gobbo & Girardi, 2001), the findings showed that preserving positive attitudes will signify an automatic change in teachers' teaching styles to better accommodate the introduction of technology. Both in Gobbo and Giraldi (2001) and in our study, beliefs of/ attitudes towards ICT tools were found to be positively associated with CALL and Wiki use respectively with the results in our study showing a statistically significant positive correlation ($Rho=0.390$; $p=0.005$).

Regarding their views of the Wiki tool itself in ESP writing, overall, teachers' attitudes are positive, but its usage is sparse ("sometimes"). From the ICT tools used in their classrooms, there is a preference for Email and Google docs over Wikis which is in agreement with previous findings in ESP in higher education (Dogoriti & Pange, 2012) and in general pedagogy and EFL (Demetriadis et al., 2003; Jimoyiannis et al., 2013; Karkoulia, 2016; Tsourapa, 2018). In this study, Web 2.0 tools are voted as teachers' third preference. Positive views but reservations and not systematic usage has been

reported in several studies (e.g. Ahmed et al., 2020; Albirini, 2006; Demetriadis et al., 2003; Egbert et al., 2002)

Relatively sparse usage of ICT tools is often attributed to three major barriers consistently quoted in literature about ICT tools (lack of time, lack of training, problems with access to ICT infrastructures) (Ahmed et al., 2020; Albirini, 2006; Demetriadis et al., 2006; Egbert et al., 2002; Karkoulia, 2016; Tsourapa, 2018).

Regarding ESP teachers' perceptions of a Wiki page as an educational tool for ESP writing instruction (first research question), the findings revealed that some ESP teachers have reservations as to the potential of the tool to effectively enhance writing which is at least partly justified. In fact, in literature there are not always positive findings regarding its potential to enhance writing. Although, several studies showed attention to form and improved writing skills in post-tests (Gharenbaghmi 2019; Kost, 2011; Nami & Marandi, 2014), they did not have a large sample of participants and are, therefore, unable to offer conclusive evidence of the effectiveness of Wikis in developing grammatical and linguistic accuracy. Other studies revealed that in the absence of scaffolding and assistance Wikis did not show promising results (Allen & Tay, 2012) or that students indeed focused on the content rather than grammatical accuracy (Kessler & Bikowski, 2010). Of course, several studies contain their limitations, mostly regarding their size (for the results to be conclusive) and the training of teachers to offer assistance and guidance to students to effectively apply the tools but their findings need, at least, to some extent be taken into account and so is the case in the aforementioned studies.

The misgivings of the participants of our study can also be the result of unsuccessful efforts with the tool due to its interface (as mentioned in literature, lack of synchronous interaction, and editing by third parties which poses serious challenges to the use of the tool) (Bubas & Kovačić, 2008; Elrifaie & Turner, 2005; Lund, 2008; Papadima-Sophocleous & Yerou, 2013) or to practical constraints (lack of time, equipment) (Karkoulia, 2016; Papadima-Sophocleous & Yerou, 2013; Tsourapa, 2018). Therefore,

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their attempts hampered by these acknowledged challenges of the tool or by the identified barriers may have rendered them undecided.

Yet, their positive attitudes colour their future willingness to apply the tool. The answers of approximately three quarters of the respondents demonstrate their willingness to use the tool in the future, also a conclusion reached by a previous study in Greece about ICT tools in general (Demetriadis et al., 2003). Their willingness is based on the assumption that the tool can firstly increase students' motivation/collaboration and secondly that Wikis form a good source of information. It seems, therefore, that the majority of teachers have some understanding of the tool and are already at the first stage of the adoption of an innovation but the Decision Stage and the Implementation Stage (Rogers & Shoemaker, 1971), are yet to be reached by the Greek ESP teachers.

As for a possible correlation between the use of Wikis and a set of independent variables, the findings of this study plainly indicate a strong relationship between Wiki use and several factors. As for the new variables, the findings indicate that the year of the study plays an important role concerning the use of Wikis and that the attitudes towards collaborative tasks positively affect the use of the tool. However, the frequency of use of collaborative tasks is inversely correlated with their use. The findings suggest a positive correlation with the educational attainment ($Rho = 0.344$; $p = 0.018$) and are congruent with other studies. In Burkšaitienė and Selevičienė (2017) in Lithuania educational attainment is shown to play a major role ($r = .439$, $p < .01$). The more qualified teachers are, the more learning gains and advantages they see in Web 2.0 integration. Yet, as for Wikis and Blogs/Vlogs the majority of the participants in Lithuania also reported limited usage with the notorious impediments being the same in both studies. In Greece, these findings are in agreement with previous studies in the ESP context (Dogoriti & Pange, 2012) and in general English classes (Demetriadis et al., 2014; Karkoulia, 2016; Tsourapa, 2018).

Teachers' perceptions of Wikis have also a strong relationship with the Wiki use. The findings indicate a statistically significant positive correlation ($Rho = 0.390$; $p = 0.005$), which suggests that teachers more favourably inclined towards the wiki tool, are more likely to explore it. Albirini (2006) showed that there is a strong relationship between the use of ICT tools and teachers' perceptions of the affordances/ efficiency of the tool. In our study, for slightly less than half of the respondents the tool can enhance writing performance, but the majority still vote for the "neutral" point "neither agree/nor disagree"¹⁸. Interestingly, however, only a negligible part is negatively inclined towards the tool. It is important, therefore, that teachers be convinced about the effectiveness of the innovation. If not, there are slim chances that they will change their old practices (Sabzian & Gilakjani, 2013) and whenever they are pressed for time they will go back to their old ways for reasons of efficiency (Watson, 1998).

Lastly, teaching experience is highly correlated with the use of Wikis with a value of great statistical significance ($Rho = 0.279$; $p = 0.05$). More experienced teachers are more likely to experiment with the tool. The finding is consistent with other research in EFL (Albirini, 2006) where working experience is a statistically significant factor ($r = .329$, $p < .05$).

The ICT competence is not positively correlated with the Wiki use ($Rho = -0.230$; $p = 0.108$). The non-use of ICT tools is anyway not correlated with the lack of skills or the absence of interest in using it. In prior research in secondary education in Greece examining the effects of an in-school training program, the non-use of educational technology was not attributed to teachers' lack of knowledge, interest or willingness (Demetriadis et al., 2003). The researchers concluded that "although teachers express considerable interest in learning how to use technology, they need consistent support" (Demetriadis et al., 2003, p. 19). Why does high competence not suggest frequent usage

¹⁸ This can be indicative of what is called "*satisficing*" (Krosnick, 1991). A behaviour that in cognitive psychology represents a socially desirable behaviour manifested when one does not desire to explicitly state ignorance (Krosnick, 1991) and is also better perceived as "*face-saving don't knows*" (Sturgis et al., 2014, p.15).

of the tools? As it has been shown in the literature, highly competent ICT teachers use CALL more often (Gobbo and Girardi, 2001). Why do the participants of our study, despite being competent ICT users, not make extensive use of the tools?

It is suggested that “a knowledge of how-to-use a computer does not necessarily imply ability [...] to infuse CALL-based materials into language classes appropriately and effectively” (Phelps, 2011). The difficulty lies in incorporating it into the curriculum and using class time effectively. ICT competence was not found to affect the intentions of South Yemeni instructors to use technology in Yemeni universities either in a study which used a large sample and statistical analysis (Ahmed et al., 2020). Computer skills alone may not be sufficient for the implementation of Web 2.0 tools for an additional reason. The modern role of technology in education does not restrict itself to the “mere use of word processors” (Williams et al., 2004, p.215). It requires that teachers use it as a tool for an array of purposes; that is, “as a tool for inquiry, problem solving, and collaboration” (Kelley & Ringstaff, 2002, as cited in Williams et al., 2004, p.215). Considered as such, the new educational technologies make great demands on the ESP teacher, who needs not only be an expert in their use but also competent in finding the correct approach to embed them appropriately in their syllabi. This is why in our study the majority of the respondents have the skills but report low levels of application of the Web 2.0 tools and even a non-negligible 20 % require training in the use of these tools.

With our attention still in Greece, research shows that the non-widespread use of technology can be attributed to other factors as well. It can be primarily due to the fact that education is highly examination oriented (Demetriadis et al., 2003). Given that, it is anticipated that teachers' instructional activities will be vastly determined by that approach; “teach to the test”. This approach is by itself problematic in the sense that it makes great demands on teaching time, which is reduced to merely teaching test taking techniques rather than the subject-matter (Phelps, 2011), and, therefore, creates more

problems such as the most commonly reported “lack of time” to introduce new technologies.

The findings also suggest that participants' age, could have an effect but the finding is not statistically significant ($Rho=0.183$; $p=0.204$). This contrasts the findings of another study in tertiary education (Dogoriti & Pange, 2012) which found that the ESP instructors' age played a role in ICT tools implementation with teachers younger than 40 years old being the ones who used them the most.

The findings reveal that the level of English proficiency of the ESP teachers does not affect the use of Wikis ($Rho=0.048$; $p=0.740$). This means that even advanced users of the language are not more or less likely to use the tool. In fact, the four-fifths report English fluency but it does not suffice to deduce that Wiki use can be generalized thanks to teachers' GE language skills. As discussed in a previous study in the same context (Chostelidou et al., 2009), it is not GE fluency, anyway, which poses a problem for the ESP teacher but language specificity.

Regarding the methodological approach, the findings show a trend to negative correlation but the result is not statistically important ($Rho=-0.1$; $p=0.490$). Both in Gobbo and Giraldi (2001) and in our study, beliefs were found to be positively correlated with CALL and wiki use respectively. There is, however, some disparity in the findings. For the former researchers teaching style plays a major role in the implementation of CALL. Our study concluded that the adoption of a certain methodological approach does not limit the use of Wikis. Gobbo and Giraldi (2001) revealed in their study that the “transmissionist” teacher integrates CALL less in their classrooms. In their study, however, researchers did not use correlational statistics to investigate the relationship between the learning style and the use of CALL and the number of participants was rather small ($n=24$) (a convenience sample) coming from all educational levels and only from the north of Italy. Therefore, for the results to be conclusive more data needs to be collected in the future to provide a clear answer as to

the extent to which a particular methodological approach/teaching style affects the integration of CALL.

As for the gender, no correlation analysis was feasible because the sample consisted of female participants (99 %). In other studies, gender was not found to affect the use of ICT tools (e.g. Ahmed et al., 2020; Dogoriti & Pange, 2012; Egbert et al., 2002; Woodrow, 1992).

5.3 Implications

This subsection, presents how the findings of this study might be important for all stakeholders.

The most important implication is related to training. The presence of technological tools in schools does not imply by itself their effective integration into classroom practices. It is important that the teachers receive effective training on how to appropriately integrate ICT tools in their language classrooms and become persuaded of the learning gains they can bring into their instruction (Sabzian & Gilakjani, 2013). To achieve this, more extensive training programs should be launched. As revealed by this study, educational attainment plays a major role in the integration of Wikis.

However, merely asking teachers to participate in professional development programs is not enough by itself. A program which lasts a few hours or happens outside their context, or which is not congruent with their curriculum cannot guarantee that they acquire the necessary skills to feel confident to effectively use technology. Fullan (1991, as cited in Watson, 1998) stated that “in-service education or ongoing staff development explicitly directed at change has failed in most cases because it is ad hoc, discontinuous, and unconnected to any plan for change” (p.188).

The findings of this study substantiate this fact. The majority of the participants have followed postgraduate programs but they do not use ICT tools as extensively as they should either due to their purportedly being *time-consuming* or because of a lack of familiarization on the part of the teacher. Both concerns can be justified. Time allocation

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can be, in fact a real problem, in Greece as the focus on preparing students for the exams is clearly stated in previous studies (Demetriadis et al., 2003) but it can also result by a lack of knowledge of how to effectively integrate them in their syllabi, and, therefore, the tool eventually becomes *time-consuming*. For that reason, whatever training teachers receive must be continuous and well-adjusted to the syllabus they teach. In fact, research shows that technology courses which take into account the situation/context and are designed based on that are more successful (Egbert et al., 2002; Son, 2014).

The findings also suggest that teachers' positive attitudes can benefit students. If teachers' positive attitudes are preserved, the benefits for the students are multiple. As it has been shown in the literature, the development of digital materials may be beneficial in the absence of textbooks and students' may also feel a sense of achievement when creating their own digital portfolios. Additionally, their attention can equally focus on content and form when writing for a real audience and all participant can contribute to the creation of a Wiki page, as the online participation seems to be less threatening than the face-to-face one (especially for the shy students). As for their equal participation (also a problem reported in literature), it can be guaranteed by rendering the tasks obligatory. At the same time, the most desired 21st skills are developed. The more experienced novice writers get, the more easily they will consider altering others work (a reported challenge in literature) thus becoming part of an online writing community. A skill required to be developed in the digital era we live in.

The implications of this study for school authorities are rather clear. They should guarantee Internet access and ICT equipment for all classrooms. Insufficiency of technological infrastructures along with the long-reported issue of training and time allocation seems to be the point of convergence of other studies as well (Ahmed et al., 2020; Egbert et al., 2002; Imad, 2015). Therefore, it is strongly recommended that funds for technological instruments be granted to increase technology integration. Since

teachers' attitudes are already positive (an important parameter for future use (Albirini, 2006), the practical constraints must be addressed.

5.4 Study Limitations

This subsection outlines the limitations of the study and acknowledges the necessity for further study in the future.

One limitation lies in the fact that there was not great participation. A small proportion of the selected sample participated. These “volunteer responses are not likely to represent the entire sample” (Utts & Heckard, 2014). The survey had trouble contacting the target populations both times. This leads to *non-response* or “*participation bias*” (Utts & Heckard, 2014, p.167). Participation rates were roughly 6 % during the second phase. Although difficult to calculate the number accessing social media or whether the schools forwarded the email, the participation is roughly estimated based on the fact that out of the 400 personal E-mails which were sent, only 25 users completed the online questionnaire. As a result, this poses an important limitation to the generalizability of the results (Utts & Heckard, 2014). Another limitation results from the fact that there was no participation from both genders. A third limitation stems from the fact that it was not able to detect the level of familiarity the teachers had with the tool prior to the study. Regarding its research design, the last limitation is related to the fact that there was only one method of collecting its data.

5.5 Suggestions for Future Research

The limitations of this study should be addressed by future research, which can focus on two main areas; the teacher and the school factor while ensuring bigger participation. Teachers' perception of innovations are crucial and “depend on their understanding of the innovation” (Karavas-Doukas, 1995, p. 53). The fact that the majority of the respondents have completed postgraduate studies does not guarantee their familiarization with all technologies. As Karavas-Doukas (1995) puts it, not only

quality but also quantity of teacher training are decisive factors to the implementation of the innovation. For that reason, future research should assess teachers' training programs and their effects on teachers' performance (Kia Heirati & Alashti, 2015) and teachers' understanding of the technology (by having them apply it) before assessing their attitudes towards its effectiveness.

Secondly, the present study investigated only some aspects of the teacher factor (attitudes). The practical constraints concern the school authority (school factor) and the Ministry of Education (national policy). Future research should be concerned with these two frameworks as well.

As for the research design, it would be interesting to have a greater random sample and deploy more research tools (semi-experimental design or/and interviews/ observations). The semi-experimental design could investigate teachers' familiarization with the Web 2.0 tools and help them apply the tool in their teaching of writing. Follow-up studies could investigate the effectiveness of the intervention in the long run.

Recording and observations of classrooms practices could reveal data as to whether the time issues stem from a lack of training in how to effectively apply the tools (thus offering advice/assistance in time-management strategies on the spot), or from a real lack of time (thus recommending changes to the Ministry of Education the only responsible institution for time allocation).

5.5 Conclusion

This last chapter discussed, interpreted and compared the findings with research in the field. It concluded with the limitations of the study and some suggestions for future research.

Concluding Remarks

This study aimed to identify the attitudes of Greek ESP teachers in EPAL towards the Wiki tool in their writing classes. Based on the quantitative data collected with the use

of an online questionnaire and by carrying out correlational analysis and content analysis, it concluded that overall, ESP teachers' attitudes towards collaborative tasks in writing and the integration of ICT tools are positive and so are their perceptions of the Wiki tool. Their willingness to use the tool in the future is also positive. However, the use of Wikis is less common in comparison to E-mail/ and Google docs which remain their most preferred tools to teach writing. The Wikis occupy the third position in collaborative writing tasks/projects after Power Point Presentations. In all cases, however, the use of ICT tools and that of Wikis remains limited to "sometimes". The main constraints are the lack of time, training, and equipment. Correlational analysis indicated a strong positive correlation between the use of Wikis and teachers' educational level, teaching experience, their attitudes towards collaborative tasks, and their perceptions of Wikis. Finally, the variable of time is of great significance. However, the frequency of use of collaborative tasks inversely affects the use of Wikis. Methodology does not have an impact on their use and nor does participants' age. As for the gender factor, no results were yielded as the vast majority of the subjects were female.

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● Appendices

Appendix I

Investigating EPAL (ESP) teachers' perceptions of using wikis to teach writing

This questionnaire is part of the research conducted for the completion of the postgraduate dissertation entitled, "Investigating EPAL teachers' perceptions of using Wikis to teach writing" and aims at providing the researcher with some necessary data. If you are an English Language teacher in Greek Vocational Schools (EPAL), please answer the questionnaire with honesty and without any reservation, since your responses will be treated with utmost confidentiality.

* Απαιτείται

Section 1 Personal Information

1. 1. Age *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ 20-25
☐ 25-30
☐ 30-35
☐ 35-40
☐ 40-45
☐ 45-50
☐ 50-55
☐ 55-60
☐ 60-65

2. 2. Gender *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ Female
☐ Male
☐ Prefer not to say

3. 3. Highest educational attainment *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ Bachelor's degree graduate
☐ Master's degree graduate
☐ Postgraduate diploma holder
☐ Ph.D. graduate

4. 4. What is your current level of proficiency in English? *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ B2
☐ C1
☐ C2

5. 5. Years of teaching experience *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ 1-5
☐ 5-10
☐ 10-15
☐ 15-20
☐ 20 and above

Section 2 Attitudes towards collaborative writing tasks in ESP writing and the embedment of ICT tools *

*Collaborative writing tasks are any tasks where learners are working co-operatively in pairs or groups to jointly construct a text.

6. 6. What is the typical method you most often use to foster writing skills? *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ Communicative Language Teaching (CLT)
☐ Content-based Instruction (CBI)
☐ Project-Based Learning (PBL)
☐ Presentation, Practice and Production (PPP)
☐ Task-Based Learning (TBL)
☐ Test-Teach-Test (TTT)
☐ Άλλο: _____

7. 7. If you use a Project-based/ Task-based approach, how often do you assign * collaborative tasks in your ESP writing instruction?

Να επισημαίνεται μόνο μία έλλειψη.

- Never

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

Every day

8. 8. With regards to collaborative writing tasks *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ They offer advantages in terms of educational and learning gains
- ☐ They increase students' motivation
- ☐ They are difficult to implement effectively
- ☐ They require special training that I do not possess
- ☐ My students do not like them, and I avoid them
- ☐ They require a lot of time to prepare
- ☐ Άλλο: _____

9. 9. Online educational writing tools support collaborative writing. *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

10. 10. If you answered yes to the previous question, which tools do you most often use?

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ use of e-mail/ Google docs
- ☐ use of social media (e.g. Facebook/ twitter)
- ☐ use of web 2.0 tools (e.g. blogs/wikis)
- ☐ use of Power Point Presentations
- ☐ Άλλο: _____

11. 11. If you answered yes to the previous questions, how often do you use it?

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ Rarely
- ☐ Sometimes
- ☐ Very Often
- ☐ Every time

12. 12. How fluent do you consider yourself when using educational writing technologies? *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ Basic user
- ☐ Competent user
- ☐ Fluent user

Section 3 Attitudes towards the integration of wikis in ESP writing.

"A wiki is a website that is collaboratively created by multiple users. It can also be thought of as a collaborative content management system (CMS) for collecting and organizing media that is created and revised by its users. The most well-known example is Wikipedia."

13. 13. I use wikis in my English Classroom. *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Frequently
- ☐ Every time

14. 14. If you gave a negative answer to the previous question, what obstacles do you think hinder the use of wikis in your ESP writing class?

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ Lack of ICT tools
☐ Lack of time
☐ Lack of teachers' training
☐ Άλλο: _____

15. 15. How likely is it that wikis in ESP writing classroom can improve the quality * of students' writing?

Να επισημαίνεται μόνο μία έλλειψη.

Not likely

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

Highly likely

16. 16. Which of the following are closer to your perception of wikis? *

Να επισημαίνεται μόνο μία έλλειψη.

- ☐ They increase student motivation
- ☐ They are fun and enjoyable
- ☐ They promote student-centered teaching methodologies
- ☐ They support diverse learners
- ☐ They require that educators be trained and learn how to use them effectively
- ☐ They are too time-consuming to use

17. 17. In the future, is it likely that you use wikis in your writing instruction? (why
yes? why not?) *

This is the end of the questionnaire. At this point, I would like to thank you for your time!



Appendix II

Descriptive statistics

Year					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	19	38.0	38.0	38.0
	1	31	62.0	62.0	100.0
	Total	50	100.0	100.0	

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	2.0	2.0	2.0
	1	3	6.0	6.0	8.0
	2	10	20.0	20.0	28.0
	3	17	34.0	34.0	62.0
	4	6	12.0	12.0	74.0
	5	8	16.0	16.0	90.0
	6	3	6.0	6.0	96.0
	7	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

Gender					
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		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	49	98.0	98.0	98.0
	2	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Education level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	14	28.0	28.0	28.0
	1	29	58.0	58.0	86.0
	2	6	12.0	12.0	98.0
	3	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

English level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	6	12.0	12.0	12.0
	1	3	6.0	6.0	18.0
	2	41	82.0	82.0	100.0
	Total	50	100.0	100.0	

Teaching years					
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		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	8.0	8.0	8.0
	1	8	16.0	16.0	24.0
	2	14	28.0	28.0	52.0
	3	14	28.0	28.0	80.0
	4	10	20.0	20.0	100.0
	Total	50	100.0	100.0	

Writing methodology					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	22.0	22.0	22.0
	1	3	6.0	6.0	28.0
	2	9	18.0	18.0	46.0
	3	13	26.0	26.0	72.0
	4	13	26.0	26.0	98.0
	5	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Freq. coll. task					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	10.0	10.0	10.0
	2	13	26.0	26.0	36.0
	3	24	48.0	48.0	84.0

4	6	12.0	12.0	96.0
5	2	4.0	4.0	100.0
Total	50	100.0	100.0	

Att. Coll. task					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	13	26.0	26.0	26.0
	1	23	46.0	46.0	72.0
	2	9	18.0	18.0	90.0
	3	2	4.0	4.0	94.0
	4	1	2.0	2.0	96.0
	5	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

Att. Writ. tool					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	5	10.0	10.0	10.0
	1	2	4.0	4.0	14.0
	2	13	26.0	26.0	40.0
	3	23	46.0	46.0	86.0
	4	7	14.0	14.0	100.0
	Total	50	100.0	100.0	

Writing tool

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	30.0	34.9	34.9
	1	7	14.0	16.3	51.2
	3	8	16.0	18.6	69.8
	4	13	26.0	30.2	100.0
	Total	43	86.0	100.0	
Missing	System	7	14.0		
Total		50	100.0		

Frequency writing tool					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	8	16.0	18.6	18.6
	1	21	42.0	48.8	67.4
	2	14	28.0	32.6	100.0

Total	43	86.0	100.0	
Missing System	7	14.0		
Total	50	100.0		

ICT competence					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	9	18.0	18.0	18.0
	1	26	52.0	52.0	70.0
	2	15	30.0	30.0	100.0
	Total	50	100.0	100.0	

Wiki use					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	18.0	18.0	18.0
	2	17	34.0	34.0	52.0
	3	10	20.0	20.0	72.0
	4	14	28.0	28.0	100.0
	Total	50	100.0	100.0	

Obstacles Wiki use					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	10	20.0	28.6	28.6
	1	14	28.0	40.0	68.6

	2	6	12.0	17.1	85.7
	3	5	10.0	14.3	100.0
	Total	35	70.0	100.0	
Missing	System	15	30.0		
Total		50	100.0		

Likelihood of improved wrt. skill					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	4.0	4.0	4.0
	2	5	10.0	10.0	14.0
	3	19	38.0	38.0	52.0
	4	18	36.0	36.0	88.0
	5	6	12.0	12.0	100.0
	Total	50	100.0	100.0	

Perception of wikis					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	14	28.0	28.0	28.0
	1	5	10.0	10.0	38.0
	2	14	28.0	28.0	66.0
	3	4	8.0	8.0	74.0
	4	9	18.0	18.0	92.0

5	4	8.0	8.0	100.0
Total	50	100.0	100.0	

Likelihood future use					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	14	28.0	28.0	28.0
	1	5	10.0	10.0	38.0
	2	14	28.0	28.0	66.0
	3	4	8.0	8.0	74.0
	4	9	18.0	18.0	92.0
	5	4	8.0	8.0	100.0
	Total	50	100.0	100.0	

Reliability statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.737	.737	7

Spearman's rho correlation

Wiki use - Year of questionnaire completion				
			Wiki use	Year of questionnaire completion
Spearman's rho	Wiki use	Correlation Coefficient	1.000	.344*
		Sig. (2-tailed)	.	.014
		N	50	50
	Year of questionnaire completion	Correlation Coefficient	.344*	1.000
		Sig. (2-tailed)	.014	.
		N	50	50

*. Correlation is significant at the 0.05 level (2-tailed).

Wiki use - Age				
			Wiki use	Age
Spearman's rho	Wiki use	Correlation Coefficient	1.000	.183
		Sig. (2-tailed)	.	.204
		N	50	50
	Age	Correlation Coefficient	.183	1.000
		Sig. (2-tailed)	.204	.
		N	50	50

Wiki use - Highest Educational attainment				
			Wiki use	Highest Educational attainment
Spearman's rho	Wiki use	Correlation Coefficient	1.000	.334*
		Sig. (2-tailed)	.	.018
		N	50	50
	Highest Educational attainment	Correlation Coefficient	.334*	1.000
		Sig. (2-tailed)	.018	.
		N	50	50
	*. Correlation is significant at the 0.05 level (2-tailed).			

Wiki use – Level of proficiency in English				
			Wiki use	Level of proficiency in English
Spearman's rho	Wiki use	Correlation Coefficient	1.000	.048
		Sig. (2-tailed)	.	.740
		N	50	50
	Level of proficiency in English	Correlation Coefficient	.048	1.000
		Sig. (2-tailed)	.740	.
		N	50	50

Wiki use - Years of teaching experience				
			Wiki use	Years of teaching experience
Spearman's rho	Wiki use	Correlation Coefficient	1.000	.279*
		Sig. (2-tailed)	.	.050
		N	50	50
	Years of teaching experience	Correlation Coefficient	.279*	1.000
		Sig. (2-tailed)	.050	.
		N	50	50
	*. Correlation is significant at the 0.05 level (2-tailed).			

Wiki use - Method to foster writing skills				
			Wiki use	Method to foster writing skills
Spearman's rho	Wiki use	Correlation Coefficient	1.000	-.100
		Sig. (2-tailed)	.	.490
		N	50	50
	Method to foster writing	Correlation Coefficient	-.100	1.000

skills	Sig. (2-tailed)	.490	.
	N	50	50

Wiki use - Frequency of collaborative tasks assignment				
			Wiki use	Frequency of collaborative tasks assignment
Spearman's rho	Wiki use	Correlation Coefficient	1.000	-.351*
		Sig. (2-tailed)	.	.013
		N	50	50
	Frequency of collaborative tasks assignment	Correlation Coefficient	-.351*	1.000
		Sig. (2-tailed)	.013	.
		N	50	50
*. Correlation is significant at the 0.05 level (2-tailed).				

Wiki use - Attitude towards technology and collaborative writing tasks				
			Wiki use	Attitude towards technology and collaborative writing tasks
Spearman's rho	Wiki use	Correlation Coefficient	1.000	.386**
		Sig. (2-tailed)	.	.006
		N	50	50
	Attitude towards technology and collaborative writing tasks	Correlation Coefficient	.386**	1.000
		Sig. (2-tailed)	.006	.
		N	50	50

**. Correlation is significant at the 0.01 level (2-tailed).

Wiki use - Information communication technology competence				
			Wiki use	Information communication technology competence
Spearman's rho	Wiki use	Correlation Coefficient	1.000	-.230
		Sig. (2-tailed)	.	.108
		N	50	50
	Information communication technology competence	Correlation Coefficient	-.230	1.000
		Sig. (2-tailed)	.108	.
		N	50	50

Wiki use - Obstacles for use of wikis				
			Wiki use	Obstacles for use of wikis
Spearman's rho	Wiki use	Correlation Coefficient	1.000	.159
		Sig. (2-tailed)	.	.363
		N	50	35
	Obstacles for use of wikis	Correlation Coefficient	.159	1.000
		Sig. (2-tailed)	.363	.
		N	35	35

Wiki use - Perception of wikis

			Wiki use	Perception of wikis
Spearman's rho	Wiki use	Correlation Coefficient	1.000	.390**
		Sig. (2-tailed)	.	.005
		N	50	50
	Perception of wikis	Correlation Coefficient	.390**	1.000
		Sig. (2-tailed)	.005	.
		N	50	50
		**. Correlation is significant at the 0.01 level (2-tailed).		

Author's Statement:

POSTGRADUATE DISSERTATION

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