

Digital Literacy: From Multi-Functional Skills to Overcoming Challenges in Teaching ESP

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Abstract: *Teaching English for Specific Purposes through the lens of digital literacy is perceived as a contemporary educational conundrum, as it deals with various elements of permanent changes. Focused on using technology and gadgets along the teaching-learning process, teachers and learners require solid digital literacy skills to guide them through the blended learning formats. The acquisition of language skills today is no longer a simple matter of learning and producing content in the physical school environment, but rather, it has become an elaborate process of combining multiple skills (digital, literacy, visual, technological) and creating the most appropriate frameworks for customised learning. With the specificity of teaching ESP, the challenges that occur within this educational endeavour are many and complex, spanning from learners' tailored needs to teachers' tech-saviness. It is therefore the purpose of the current paper to analyse some particularities of ESP teaching based on sharing digital skills, by indicating potential flaws and benefits along the way. The practical viewpoint will be rendered in a brief analysis of the most common and prolific digital tools used to provide aid in teaching specific foundational language skills.*

Keywords: digital literacy, ESP, blended learning, digital tools, customised content.

Introduction

The blending of modern technologies and education has given birth to a revolution in the field of learning, one that seems to be on permanent move. As teachers and school institutions are under the constant pressure of shifting from the static, textbook-bound and physical location context type of education, learners become avid consumers of data and information in need for guidance and input customization. Digital literacy, in this respect, functions as a two-way means of matching the supply and demand in the educational market of content and methodology.

Coined by Paul Gilster in the 1997 book *Digital literacy*, the term has multiple definitions meant to describe the ongoing evolution of tech literacy, but the most commonly associated refers to "the ability to access networked computer resources and use them"¹. Surely, given the meaning of „literacy" as the ability to read and write, one may envisage that the extended phrase „digital literacy" includes the contemporary implications of reading and writing within any digital material, for which reason some experts choose to use the term „digital literacies", by indicating the multimodal levels. However, the main distancing from the traditional „literacy" primary aim of education resides in the fact that digital literacy is not a mere acquisition of data, but

¹ P. Gilster, *Digital Literacy*, New York, Doubleday, 1997, p. 1.

rather a succession of selection, filtering of data, adjustment of input and accurate display and presentation to the learners.

Such educational process becomes a strenuous, complex and dual mechanism in which teachers and learners are on nearly equal positions, given that the information exchange is no longer linear, but rather, it takes the form of a game in which players work together to produce a winning score, while keeping the excitement and elements of surprise at hand.

Digital literacy basically refers to the (shared) capacity to search and access content in the online space, but, just as important, it includes other features that, depending on the specificity of the educational context, must be performed by the trainer, by the trainee(s) or by both/all participants. Namely, these steps include content creation, „writing in digital formats, as well as creating other forms of media such as videos and podcasts"², the exposure of learners' written skills through sharing and communication in online communities and respectively the assessment of gained skills through various digital projects in the online space.

Moreover, given the highly digitalised contemporary society, where nearly all acts of communication are performed online, and the capacity to be digitally literate stands as prerequisite in any endeavour of learning a foreign language. For this reason, we will start from the premise that regardless of the learning objective, the development of digital literacy as core feature of the learning process is mandatory for both learner and educator.

Teaching ESP through digital literacy lens

In the context of learning and teaching English for Specific Purposes (ESP), digital literacy stands out as a necessary instrument due to the basically unlimited access ways to respond to the learners' specific needs. A broad definition of ESP, to emphasise its particularities, implies „the teaching and learning of English as a second/foreign language which, in contrast to other pedagogical approaches, bases the course contents and objectives on the specific needs of target learners. Thus it is frequently contended that ESP is an umbrella term which covers a range of diverse teaching contexts. They are broadly defined as English for Academic Purposes (EAP), English for Occupational English for Specific Purposes Technology in ESP Pedagogy 2 Purposes (EOP) and English for Professional Purposes (EPP)"³.

Consequently, in order to satisfy the learners' specific needs of studying ESP terminology and the suitable spoken/written contexts to practise, digital literacy proves to be at the core of this customised learning

² L. Heitin, *Digital Literacy: an Evolving Definition*, <https://www.edweek.org/ew/articles/2016/11/09/what-is-digital-literacy.html>, accessed 12. 04. 2018.

³ E. Danuta Lesiak-Bielawska, *Technology in ESP Pedagogy*, in English for Specific Purposes World, www.esp-world.info, accessed 12. 04. 2018.

process. Indeed, having digital literacy at the basis of teaching and learning English for Specific Purposes shows a win-win scenario, with both teacher and learner gaining the advantage of tackling customised information content within a web of digital plethora.

There are, nonetheless, various aspects that need to be mentioned, when analysing the topic in light of language acquisition procedures. Particularly, the way in which methodology guidelines and teacher roles shift in order to meet the tailored demands, the changes occurring in classroom functionality and respectively the ranges of technology that increase literacy in the digital world, all represent elements that must be put under scrutiny in the current research. Likewise, the challenges that could question the success of teaching and learning ESP in the digital content framework point to the fact that a hiatus may occur due to disparities between the structured content available in the educational input and the virtually unlimited array of digital data growing day by day.

Given that teaching ESP comes attached to the need to access, use and create authentic materials, the teachers' responsibility is to design genuine study packs, so as to address multiple skill acquisitions, and at the same time, to exploit the students' readiness to explore the digital world freely. Such a task is by no means an easy one, as it entails a conundrum on behalf of the content designer, who must be at the same time creative, rigorous, analytical and well-organised.

Furthermore, assuming that students are already equipped with consistent digital skills and that they are similar to "programmers" in the sense of relating content to the necessary data, the status of being digitally literate is also a question that must be regarded from the teacher's standpoint. Many are the cases when learners are more skilled in the digital worlds than their educators, leading to situations of risk in their learning process. Particularly, their motivation may decrease if they are not accurately stimulated in the digital learning space. Equally relevant, there is a stringent need to create communication environment for ESP digital learners, where sharing and exchange will function as validation instrument.

In trying to tackle these aspects, teachers stand a chance at implementing fruitful learning projects, while, at the same time, keeping students engaged and willing to be active contributors.

New guidelines for ESP e-learning: blended learning, methodology and teaching roles

The improvements and dynamism that ICT (Information and Communication Technology) and computer-assisted language learning

(CALL)⁴ have brought to ESP e-learning are insurmountable. The wide access to virtually unlimited source of information, the authenticity of content and the freedom of "roaming" online communities in search of communication partners are all solid pillars of the global strategy of using English as the *lingua franca* in professional context. However, novelty often brings forth a set of changes that may challenge the seemingly traditional elements defining the learning process. Surely, along with the digitalisation of education and society, teachers were encouraged to adapt their methods and strategies and to open the way to technological learning tools. However, in the current analysis of digital literacy as core mechanism in teaching and learning ESP, one cannot omit the various shifts that teachers as well as methodological input and physical school environments go through.

One major shift in the timeline of ESP e-learning was the need to change the technological tools from repository of materials and information to creator of content. In doing so, both teacher and student benefit from multiple online experiences, that are shared either through structured and pre-formed frameworks (as in the case of wikis, podcasts, prezis) or through communication-based learning episodes. Likewise, as ESP implies the gaining of linguistic skills to match professional abilities and knowledge, the use of digital learning facilitates the building of accurate context for practice and communication, enhancing thus cooperation between learners.

This change brings along a re-conceptualization of the *classroom functionality*, which no longer serves as a necessary physical school environment. Particularly, the learning process does not need to be an exclusively physical location-based one, as with e-learning there are no longer time nor classroom boundaries. Instead, the linguistic itinerary merely starts here, in the classroom, and is bound to continue by exploring the webs of the digital world, extending this way the allocated study time and turning the whole experience into an activity perceived as leisure.

The flipped classroom⁵, though sometimes narrowing the teaching strategy and giving more freedom to the technological influence upon learners, may well function as a customised manner of teaching ESP. It allows students to process the educational content at their own pace, to review and rewind information, making it an especially valuable tool in the teaching of heterogeneous ESP classes.

⁴ See E. R. Eslit, *Computer assisted language teaching: learning without dust*, 2017, available at https://www.researchgate.net/publication/320486566_COMPUTER_ASSISTED_LANGUAGE_TEACHING_LEARNING_WITHOUT_DUST, accessed 12. 04. 2018.

⁵ A flipped classroom, where students are introduced to content at home, and practice working through it at school, mixes direct teacher-student interaction with individual study via technology, often done outside the school environment.

Moreover, positioning digital literacy in the ESP learning process, a rather recent guideline to be taken into account is *blended learning*⁶, as mechanism of striking a balance between the traditional school environment methods and digitalised content. There are various advantages to adopting this strategy in ESP teaching, since blended learning "helps overcome distance and time constraints, and also allows for the customization of learning and provision of discipline-specific materials and tasks"⁷. By proliferating instruction in class and outside the class, teachers grant students the control to further explore the language acquisition process, by continuing study, by reinforcing information through assisted guidance, if necessary and by expanding access to curriculum in the field that rarely gets to be touched on during classroom hours.

Taking matters forward into the extended classroom guideline, the mastering of digital literacy in ESP can be practised within the pedagogical model that Thorne and Reinhardt (2008) named *bridging activities*. It „addresses advanced foreign language proficiency in the context of existing and emerging internet communication and information tools and communities"⁸.

This functions as an „encouragement" method to have students discuss about their personal use of technology- their „digital vernacular expertise"⁹- outside the classroom, by facilitating, this way, narrative contexts for them to practice. The particularity of this feature resides in the fact that learners are faced with the necessity of using advanced language skills to digitally operate instructions. Consequently, language awareness becomes the key to unlocking gamification techniques and, at the same time, it introduces language learning into the most common digital activities they may engage in, such as games, chat or instant messaging.

Eventually, ESP e-learning also requires a reorganisation and re-conceptualisation of the *teacher's roles*, who is no longer the data-provider, but, together with students, he/she holds the title of content designer, facilitator or coordinator. Adding to this equation the student-centred education model, the new roles reveal a dynamic instructor, who must be permanently

⁶ There are various definitions for blended learning, varying from the field of business world, to higher education and eventually to language teaching and learning. The taxonomy of terms as indicated by Brian Tomlinson and Claire Whittaker (eds.), in *Blended Learning in English Language Teaching: Course Design and Implementation*, 2013, London, indicates that in blended learning, as compared to web-enhanced, hybrid and fully online learning, subjects utilize some significant online activities in otherwise face-to-face learning, but less than 45 per cent. (p. 14).

⁷ E. D. Lesiak-Bielawska, "*Technology in ESP Pedagogy in English for Specific Purposes World*," p. 11.

⁸ S. L. Thorne, J. Reinhardt, "Bridging activities. New Media Literacies and Advanced Foreign Language Proficiency," in *CALICO Journal*, 25 (2008), no. 3, p. 558.

⁹ S. L. Thorne, J. Reinhardt, "Bridging activities. New Media Literacies and Advanced Foreign Language Proficiency," p. 559.

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anchored in digital learning. ESP teachers now bear „multiple roles, for example as teacher, materials designer, collaborator, assessor, and researcher and these roles have expanded and evolved through IT"¹⁰.

With this plethora of responsibilities and skills at hand, ESP teachers have the immense benefit of easily customising their courses into online or blended ones, so as to meet the learners' needs and demands. Equally important, they may also embellish the format of the input, by designing professional presentations and hi-tech formats for their learners.

Benefits and challenges of teaching ESP with digital tools

With the technological revolution invading education during the last three decades and particularly, with the Web 2.0 impact upon learning and teaching, the field of ESP has truly become an experimental terrain. From having access to virtually unlimited sources of information to the availability of various devices that may be used in the extended classroom and to learners' readiness to explore the digital resources online, the teaching process gains boundless dimensions. There are immense benefits in this respect for learners as they are given the opportunity to seize the gradual changes in digital society and to use them in their own advantage, by learning in customised contexts. Nevertheless, there are also challenges that come attached to the status of teaching and learning ESP in view of digital literacy, not only for teachers, who sometimes face a shortage of digital skills, but even for students.

The current study will indicate the impact of teaching the four foundational skills of language-reading, writing, speaking and listening- by using digital tools, by pointing out as well the benefits and challenges related to such endeavours. As previously mentioned, the capacity of being digitally literate is basically mandatory in the teaching and learning process of ESP, for which reason, we will analyse a set of viable technologies that allow for a customised acquisition of skills.

Given the scarcity of space in the current study, we will refer to a limited number of digital tools, but the choice of such instruments will include the most relevant and used ones. For the development of reading skills in teaching ESP, we deem the following tech tools to be of high importance: *Rewordify*, *iAnnotate* and *Lingro*. Also, focusing on this category of skill development, it is important to mention that the biggest challenge is to customise the educational need and to select accurate sources of information from the infinite web of knowledge available online.

¹⁰ N. Kern, "Technology-Integrated English for Specific Purposes lessons: real-life language, tasks, and tools for professionals", in *Innovations in Learning Technologies for English Language Teaching*, London, British Council, London, p. 99.

Table 1. Using digital technologies for developing ESP reading skills

Digital tools	Means of usage and acquired skills	Benefits to learning ESP	Challenges
<i>Revordify</i>	The application permits students to strengthen their vocabulary, by adapting their own level of comprehension. In time, they will <i>upgrade their understanding level</i> to more advanced ones.	Learners of all levels may get access to specialised texts, learning thus vocabulary in their domain of interest.	Some learners may risk complacency, by choosing the easy version whenever there are new words or phrases.
<i>iAnnotate</i>	It combines speaking, writing and reading skills to go through a text, by encouraging learners to improve features and review their input. It also serves for <i>modelling text features</i> and supports reading comprehension by mixing a variety of tech features.	The text may be accompanied by audio notes as well, making it a great assessment tool for teachers.	Such an application implies extensive use of mobile learning, which may become problematic in classroom facilities, due to lack of suitable software or Internet accessibility.
<i>Lingro</i>	The website works like a built-in dictionary, allowing translation in 11 languages, and helps learners <i>increase their vocabulary skills</i> .	It enables learners to create word lists and to play games in order to check for vocabulary.	The fact that users can contribute by providing a customised definition of words may make the website redundant sometimes.

For the development of writing skills in teaching ESP, we deem the following tech tools to be of high importance: *Wikis*, *Edmodo*, *Moodle* and *Storybird*.

Table 2. Using digital technologies for developing ESP writing skills

Digital tools	Means of usage and acquired skills	Benefits to learning ESP	Challenges
<i>Wikis</i>	Wikis are collaborative digital tools that allow students and teachers to complete available content, to review and modify it, improving thus <i>writing and creative skills</i> .	Such tools facilitate dynamic engagement of students in the language learning process and allow the creation of specialised content, focused on customised	Language production in this case must be envisaged as a whole, which means that teachers must pay extra attention to fluency, accuracy and coherence ¹¹ , aspects that may be

¹¹ Y. Alshumaimeri, "The effects of wikis on foreign language students writing performance", in *Procedia Social and Behavioral Sciences*, XXVIII (2011), p. 756.

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		learning.	neglected by learners when writing.
<i>Edmodo</i>	It is a digital tool connecting teachers and students, and is perceived as a social network. By giving teachers the freedom to create online <i>collaborative groups</i> , they can also share materials, or <i>evaluate performance</i> .	Under the umbrella of social networks, it credits learners with creativity and freedom of expression in a chosen topic, while, at the same time, connecting them with other learners to encourage exchange.	As a social network, Edmodo requires accurate moderation on behalf of teachers, who must check for appropriateness in written language.
<i>Moodle</i>	„Moodle is a package for creating web-based courses and is quite favourable for learning ESP with a great opportunity for personalization that enables the teacher to create <i>on-line courses with exceptionally rich interaction</i> .” ¹²	It is highly experimental and triggers students to use creativity in organising content.	Such learning platforms require institutional access, which may be problematic in specific cases, as well as limiting input to classroom process of teaching. Moreover, another drawback refers to "the lack of interaction and live contact between students and teachers". ¹³
<i>Storybird</i>	It works as a free-write station, designed to <i>prompt various writing tasks</i> and it allows teachers to create assignments and to evaluate by comments the students' stories, facilitating thus <i>customization of writing skills</i> .	By combining visual and digital literacy, the social network platform gives learners the role of authors, empowering them and motivating them to produce	Storybird works with pre-set image editing options, which can be perceived as frustrating and time-consuming by some learners.

¹² M. D. Milovanović, M. S. Radić Branislavljević, J. D. Petrović, *The Use of ICT in Learning Language for Specific Purposes*, available at <http://www.inovacijeunastavi.rs/wp-content/uploads/Inovacije1-15/10Singidunum.pdf>, accessed, 20. 02. 2018. Ileskhan Smanov, Aktolkyn Boranbayeva, Kamalbek Berkimbayev, Kulimkhan Arymbayeva, Kan, "Approaches to online learning: a study of the factors affecting teachers in a fully online faculty," in *Astra Salvensis*, VI (2018), no. 11, p. 633.

¹³ V. Bošković, T. Gajić, I.Tomić, "Moodle in English Language Teaching", in *Sinteza PROCEEDINGS-Impact of Internet in Business Activities in Serbia and worldwide*, 2014, available <http://portal.sinteza.singidunum.ac.rs/Media/files/2014/Sinteza-2014.pdf>, accessed 19. 02. 2018.

		accurate content.	
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In the context of teaching ESP writing skills, there are some implications that are worth mentioning. Particularly, this set of skills actually embodies the other three functional ones, which means that learners must show proper knowledge of grammar and vocabulary, along with the creative input. Likewise, learner motivation may fall short especially under the circumstances of them focusing on the final product. Perhaps a useful tip in this respect would be to initiate development of writing skills by taking small steps, and starting with the use of messenger tools to engage students in short messaging and texting on given topics/fields of interest.

For the development of listening skills in teaching ESP, we deem the following tech tools to be of relevant use: *Skype*, *VoiceThread* and *PodOmatic*.

Table 3. Using digital technologies for developing ESP listening skills

Digital tools	Means of usage and acquired skills	Benefits to learning ESP	Challenges
<i>Skype</i>	Skype is a website allowing users to establish communication through video and voice calls, enhancing thus listening and speaking skills. In doing so, learners gave to make proper <i>use of their vocabulary, to improvise and use language naturally</i> and promptly. In the teaching process, it can often be used to bring guest speakers-native speakers, experts or specialists inside the digital lesson and give students access to work on their comprehension.	Skype has the immense advantage of replicating face-to-face conversations and creating this way tailored contexts for learners to practice their language skills.	The main issues related to this digital tool include connectivity availability and the fact that due to bugs and improper equipment, it is highly unlikely to predict if such learning episodes might actually take place uninterruptedly in the classroom.
<i>PodOmatic</i>	It represents a digital tool that allows teachers to create audio podcasts and recordings and to make it available to other users. PodOmatic also lets users to record reading excerpts and permits <i>fluency building</i> .	One relevant advantage of using this tool is that it audio content may be designed by one speaker or multiple speakers, increasing the difficulty level of tasks. Likewise, learners can use links with other social networks, making it a very versatile tool.	The drawback of this feature is that in case of correcting error, the only option is to rerecord podcasts, rather than review it, which may be perhaps too redundant for users.

<i>Voice Thread</i>	With <i>Voice Thread</i> teachers can create voice recordings for learners, who respond and comment, by making use of their <i>listening comprehension and language production skills</i> . Moreover, users can also upload written texts, images, video and other digital media, followed by a voice recording.	<i>Voice Thread</i> encourages collaborative work between learners, who are invited to combine various language skills and contribute to the overall discussion.	Even if it is a very easy-to-use and efficient digital tool, one cannot omit the technical difficulties that can occur during classroom usage and the tech saviness of teachers.
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Even if listening has an essential role in language acquisition, it often takes a marginal place in the overall ESP teaching as it raises several challenges for both learners and teachers. On the one hand, students have to deal with multiple varieties of language (accents, slang), with reduced language structures and respectively with that fact that comprehension is delivered in motion, that is by constant change, as compared to a static text. On the other hand, for teachers, who must design and organise accurate content "practical tasks and authentic listening materials are vital. Therefore, both ESP practitioners and learners must have access to various technologies, like corpora and audiovisual media on the internet, which offer plenty of opportunities to practise listening skills relevant to academic or workplace-related demands."¹⁴

For the development of speaking/communication skills in teaching ESP, we deem the following tech tools to be of relevant use: *Vocaroo*, *MailVu* and *Voxopop*, along with the ones mentioned above with listening skill teaching.

The difficulty that perhaps each ESP teacher may face is to get students talking and to engage them in conversations and debates. Even if they can make proper use of vocabulary, and have the ability to organise their thoughts coherently, many learners develop the so-called "classroom fright". Motivation and feedback are therefore necessary actors in this scenario, and it is the role of teachers to find appropriate content and media that could stimulate them to speak, while, at the same time, finding the suitable method of evaluating their input. Using instant messaging and audio-video media as means of establishing lines of communication is always a safe start, but there are many other dynamic voice tools to get learners more engaged.

¹⁴ T. Maslova, ESP Listening Skills, available http://www.kamts1.kpi.ua/sites/default/files/files/maslova_ESP%20listening%20skills.pdf, accessed 21. 02. 2019.

Table 4. Using digital technologies for developing ESP speaking skills

Digital tools	Means of usage and acquired skills	Benefits to learning ESP	Challenges
<i>Vocaroo, MailVu</i>	Vocaroo represents an example of webware that gives learners access to record themselves speaking and then listening again for correction or <i>pronunciation improvement</i> . It is equally valuable for teachers, who can record instructions or comments, then translate it into QR codes and with the help of Augmented Reality, students can develop learning experiences that combine all language skills. With MailVu, the extra feature refers to allowing communication through pair work, as two or more learners may participate in the recording process.	These digital tools are extremely easy to use and, by providing limitless space for learners to record themselves, they can also be used as an assessment portfolio by teachers, who may this way observe the learners' evolution in the speaking skills acquisition.	The only restrictions and drawbacks refer to the need to use an embedded microphone, this way limiting the manner in which the tool may be used with gadgets other than the computer.
<i>Voxopop</i>	Voxopop is an excellent digital tool to be used with customised development communication skills. It can work very efficiently especially with students with literacy issues in the sense of <i>collaborative learning</i> , as it gives access to wide discussion groups (Talkgroups) and combines both listening comprehension and spoken language.	The most significant advantage is that it functions as a voice-based discussion board and is self-explanatory, without the pressure of producing speaking content in the physical environment classroom.	Some learners complain about the slow-motion usage of the app on mobile devices, which places this choice of learning as an alternative plan. Likewise, it is destined mainly for intermediate learners, due to the slow-paced and in-depth analysis,

Conclusions

The status of digital literacy within language learning process has encountered various evolution steps, from mere optional instrument, to valuable linguistic acquisition tool and eventually to necessary mechanism of improving learners' language skills. Technology is now inseparable from language teaching, especially in the cases where practitioners must acquire specialised terminology and learn via customised contexts. In this sense, teaching ESP must be envisaged as an evolving social mechanism, in which

participants account for the design, content creation, selection and feedback and. In doing so, the educational process also witnesses significant modifications in terms of methodological approaches, blending physical and traditional methods with digital and online learning environments.

Just as teachers, whose tech-saviness comes as prerequisite in the teaching domain, need to adapt to the customised needs of their students, learners are also challenged by the multitude of sources, media and content to choose from. But, by working closely together and transforming the purpose of education into a mutual goal of self-development, the task of teaching-learning in the digital classroom turns into a more tangible one. In today's changing societies, training programs need to increase the chances of employment. Therefore, professional conversion programs, study programs corresponding to a specialization in another field of study are meant to facilitate each trainee a more good socio-professional insertion.¹⁵

It is still unknown what the future reserves for the digital learner. Whether blended learning, Augmented Reality content or mobile learning are destined to completely replace the old-school textbook and traditional teaching styles remains a dilemma. However, the certainty that keeps on defining the evolution of language teaching is that both teachers and learners must grow to be digital natives in order to transform the tech-teach battle into a win-win situation.

¹⁵ Adriana Denisa Manea, "Requirements regarding the continuous training of the teachers", in *Astra Salvensis*, II (2014), no. 4, p. 180-183 and Adriana Denisa Manea, "Lifelong learning programs-an effective means of supporting continuing education", in *Procedia - Social and Behavioral Sciences*, IILC (2014), p. 454- 458.