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Evaluating the Integration of Digital Literacy Components in ELT Coursebook Design

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Azadeh Emadi
University of Tehran, Tehran, Iran
<Azadeh.emadi@ut.ac.ir>

Shaghayegh Hosseini
Alzahra University, Tehran, Iran
<Sh.hosseini01@gmail.com>

Abstract

Given the changing nature of the meaning of literacy, this study seeks to adopt a pluralistic view of literacies and provide a holistic picture of how coursebooks help learners improve their technological-related literacies to participate fully in the present and future world of multiple and multimodal literacies. Accordingly, the elements of digital literacies in sixteen widely used ELT coursebooks were explored through content analysis. The findings revealed the implementation of the four foci of literacies (communication, collaboration, information, and re-design) in the digital literacies framework throughout the coursebooks. All coursebook series primarily emphasized the aspects of communication and collaboration, allocating comparatively less attention to the elements of information and re-design. The findings have call for practitioners in the field to rethink the curriculum, take the digital literacy components into account, and augment the digital aspects that are less discussed in coursebooks

***Keywords**:* digital literacies; language coursebooks; textbook evaluation; curriculum design

A confluence of events since the early 21st century has progressed the concept of literacy from a print based and traditional view of merely the ability to read and write and the knowledge of language components toward a more sociocultural viewpoint (Baynham & Prinsloo, 2001; Gee, 2000). Re-examining the sociocultural view of life due to the emergence and integration of technology necessitates a fresh insight to thoroughly unravel the layers and underlying components required to overcome the emerged skills and literacies. Leu et al. (2017) considered literacy as deixis due to its rapidly changing nature. Alongside dealing with the diversities among each individual as multiple literacies (Bauer et al., 2021; Solé et al., 2020), people need multiliteracies to interpret and collaborate in the world of newly arrived modes and concepts of literacies which are developing rapidly throughout the internet (Blommaert, 2015).

As a salient aspect of learners' language and literacy development, the materials play an influential role as intermediaries among course content, teachers, and learners (Bouckaert, 2019). No matter how much freedom advanced technologies give language learners in selecting various digital or printed materials, coursebooks will remain potentially dominant in language teaching since they provide textbook users with reliable and rich resources in terms of content, texts, and activities (Richards, 2001). Advancements in technology and its incorporation into the sociocultural life of people have made expectations for integrating different modes and multiliteracies into textbooks. Multimodalities in textbooks provide opportunities for pedagogical and social relations between textbook producers and users (Ajayi, 2012; Bezemer & Kress, 2010).

Current technologies have transformed people's lives in different areas, such as communication, interaction, understanding, and thinking. In light of this change, dealing with this transformation in teaching and learning processes calls for new skills (Hockly, 2012). Digital skills allow students to access and evaluate information, select relevant resources, and enhance their learning process. Living in line with the present digital society requires students to improve their digital skills to enhance their capabilities for creative learning and efficient working. One way to make adjustments to this transition is to include digital literacy in the curriculum and material development. Meanwhile, the prevailing shortcomings of the most common English language teaching books can be categorized under two categories, 1) not specifying digital literacies as separate or integrated skills (Dudeney et al., 2013) and 2) not achieving practical use or not seeing the transformative results (Mohammadkhani et al., 2021). Therefore, it is crucial to see how materials reflect the necessity of using technology and enhancing the digital literacy levels of their users.

The vastly discussed issue of integrating knowledge of technology and digital literacies during the past decades can be led to allocating specific space for them in the content of language textbooks plus a systematic integration of technology in the language learning process with more focus on digital literacies (Dudeney et al., 2013; Hismanoğlu, 2011; Levy, 2019; Simon, 2008). Therefore, an evaluation of the attempts in the currently used coursebooks is required to visualize the integration of digital literacies into the content of coursebooks. To find out whether the digital literacies' components are embedded into the recently developed coursebooks' objectives and syllabi, the present study sought to investigate the role of materials in offering and integrating technologies in their text level based on the revised digital literacies framework of Pegrum et al. (2018).

Theoretical Background

Digital Literacy Frameworks

It seems that the topic of digital literacy was initially discussed by Paul Gilster (1997), who believed that our technological skills shape our experiences. The increasing need for students, in general, and for language learners, in specific, to be adept at digital skills and improve their capabilities for high-quality living, creative learning, and efficient working in a digital society (Jisc, 2014) has led the scholars to develop, implement, evaluate, and modify various digital literacy frameworks during the past two decades of the 21st century (Handley, 2018). Initially, Sharpe and Beetham (2010) presented a developmental model of effective e-learning based on a hierarchical pyramid of applicable access, skills, practice, and creative appropriation. Then, the introduction of the seven-pillar model of the Society of College, National and University Libraries (SCONUL) (Bent & Stubbings, 2011), which was revised in 2013 by adding digital lenses, used

the pillars of identify, scope, plan, gather, evaluate, manage, and present. This model can be particularly useful for curriculum developers and planners.

The DigCamp framework (Ferrari, 2013), developed for progressing digital skills to assist policymakers and educators, categorized five functions of information, communication, content creation, safety, and problem-solving within 21st century competencies and was revised with slight modifications. The digital capabilities framework (Jisc, 2014) includes seven elements of digital literacies as Information and Communications Technology (ICT) literacies, career and identity management, learning skills, digital scholarship, information literacies, media literacy, and communication and collaboration. Similar to the DigCamp framework, the University of Brighton's Digital Literacies framework considers the four areas of learning and teaching, research, communication and collaboration, and administration as beneficial academic needs in higher education (Handley, 2018).

In the mentioned models and frameworks, the digital literacy concept has emphasized mainly technical competencies (Hinrichsen & Coombs, 2014). Disregarding the actual realization of technical competence in practice has caused a void of critical technology in the frameworks (Littlejohn et al., 2012). Meanwhile, a very well-defined categorization for different elements involved in digital literacy is provided by Pegrum et al. (2018), which helps to have a kind of checklist for the integration of digital literacies into lessons (Levy, 2019). The digital literacies framework implemented in the present study was originally developed by Dudeney et al. (2013); then, it was revised by adding the new item of *critical digital literacies* besides minor revisions in other parts (Pegrum et al., 2018). Their framework includes the four foci of *communication*, *information*, *collaboration*, and *re-design* (see Table 1).

Table 1. Revised Framework of Digital Literacies (Pegrum et al., 2018).

Communication	Information	Collaboration	Re-design
Print literacy			
Texting literacy			
Predictive literacy			
Hypertext literacy	Tagging literacy		
	Hashtag literacy		
Multimodal literacy	Search literacy	Personal literacy	
	Information literacy	Security literacy	
	Data literacy	Network literacy	
	Filtering literacy	Participatory literacy	
Gaming literacy		Intercultural literacy	
Gamification literacy			
Spatial literacy			
Mobile literacy			
Code literacy		Ethical literacy	Critical literacy
Technological literacy			Critical digital literacy
Robotic/AI literacy			Critical mobile literacy
			Critical material literacy
			Critical philosophical literacy
			Critical academic literacy
			Remix literacy

Note: Listed in order of increasing complexity Adapted from Pegrum et al. (2018), used by permission of The European Journal of Applied Linguistics and TEFL

Communication. The first focus was a constraint to the word language in the first version of the digital literacy framework (Dudeney et al., 2013) and was broadly described as everything

connected with meaning transferred through the medium of language. The description of the first focus has been extended to *communication* since it can be applied to all forms of interactions, whether through language or any other alternative or complementary medium and channels (Pegrum, 2019; Pegrum et al., 2018). The focus of *communication* entails 12 subsections: *print literacy, texting literacy, predictive literacy, hypertext literacy, multimodal literacy, gaming literacy, gamification literacy, spatial literacy, mobile literacy, code literacy, technological literacy,* and *robotic* or *AI literacy*.

One of the prerequisites for participating in the new culture of technology is the reading and writing ability (Boyd, 2014; Jenkins et al., 2009) introduced as *print literacy*. Taking the speed and cost of texting into account, a new linguistic register emerged as *texting literacy*, which moves between two forms of speech and writing (Baron, 2008; Crystal, 2008; 2011), which its use depends mostly on specific group membership (Pegrum, 2019). Many autocorrection technologies have reshaped the produced texts into a more accurate and appropriate form in assigned genres, which requires a new form of literacy as *predictive literacy*.

As a new form of punctuation, hypertexts have transformed the use of language, especially in reading and writing (Mills, 2016; Tagg, 2015). In *hypertext literacy*, hyperlinks give the readers the agency to decide whether to click and continue the reading or not (Pegrum, 2019), which can add to the cognitive load (Carr, 2010) or may slow down the reading procedure, condense comprehension, or weaken retention. Additionally, communication cannot be fulfilled merely through the appropriate use of language in the digital context. Rather, it is required to learn how to create multimedia messages and integrate different modes of text, sounds, images, and videos to shape the negotiation of ideas and meaning (Pegrum, 2019; Pegrum et al., 2018). This type of literacy is featured as *multimodal literacies*. The introduction of games into the realm of education (Prensky, 2007), due to their problem-solving nature (Dignan, 2011; McGonigal, 2011), has led to the creation of a new form of literacy as *gaming literacy* (Buckingham, 2008), in which the motivational benefits of including gaming elements into education and language learning are taken into account (Dehghanzadeh et al., 2021). The switch from 2D designs and prints to 3D objects is named *spatial literacy*, which overlays real-world views (Bacca et al., 2014; Radu, 2014). The use of portable devices gives us the opportunity to expanding toolkit for various functions such as capturing, editing, representing, and sharing our experiences in real life and it is defined as *mobile literacy* (Pegrum, 2019; Pegrum et al., 2018).

Digital literacy cannot be confined to merely knowing how to work with a computer; rather, it can be expanded to knowing how to define orders to a computer. It requires *coding literacy* or the language of computer, which is the skill of reading, writing, modifying, and even criticizing computer codes for producing and adding an innovative media channel (Dudeney et al., 2013; Pegrum, 2019; Pegrum et al., 2018). Coding literacy stepped into language education due to its efficacy for both teachers and learners (Godwin-Jones, 2017; Stevens & Verschoor, 2017) in reading and creating texts in the world of technology.

Information. The second focus of the digital literacy framework is on *information literacy*. As a matter of fact, in the era where information is available everywhere, memorization has less space; instead, one should be adept at searching for information, that is, knowing how to get access to, evaluate, manage, and organize the exact or the required information (Pegrum, 2019). Tagging, a familiar term especially for social media users who tag people on a photo or use geotagging (the geographical locations) (Pegrum, 2019), is a significant tool for managing and categorizing resources (Dudeney et al., 2013). The user-generated indexes as tags, defined as folksonomies,

provide traceable classifications in multiple ways (Merchant, 2010; Weinberger, 2007). The tag system primarily functions to trace and link related content as a hashtag; meanwhile, hashtags as contextual markers have evolved functionally to provide users with a personal style in public discourse content (Scott, 2015).

Finding an appropriate set of keywords to fulfill the rudimentary searching elements among the flow of information available in various search engines is a crucial skill. The haphazard way of searching has baffled the users in the pool of information (Weigel et al., 2009); thus, a kind of *searching literacy* is required to guide the users toward straight and appropriate information. *Information literacy* covers a range of searching and analyzing skills (Bawden, 2008; Whitworth, 2009) and distinguishes between information and misinformation, especially in expanding fake news circulated through mass media (Kaul & Guaba, 2022). The ability to read, evaluate, and manipulate big data has been defined as *data literacy* (Aoun, 2017; Pegrum, 2016), which is largely presented in infographics and other multimodal formats. Knowing how to manage and overcome information overload is the skill and literacy underlying *filtering literacy* (Hockly, 2012).

Collaboration. The third focus in the digital literacy framework is on collaboration, formerly introduced as connection since communicating meaning was intimately nurturing with connection (Dudeney et al., 2013). Dealing with various networks has made us more knowledgeable (Burbules, 2009); meanwhile, the focus of connection has been improved and expanded into *collaboration* (Pegrum et al., 2018) to show more mutual and constructive connective roles in making and negotiating meaning during cooperation.

Personal literacy allows users to represent themselves as they desire to shape an online identity through various digital tools (Burniske, 2008). *Security literacy* can protect the presented and projected identities from cyber damage (Pegrum et al., 2018; Pangrazio & Selwyn, 2019). Connecting with social and digital communities requires networks to facilitate and develop communication and collaboration with others. Contributing to the world of digital conversations and social media calls on *participatory literacy* which is highlighted in recent studies (Hauck et al., 2016; Hauck & Kurek, 2017). Closely related to the theory of intercultural communicative competence (Byram, 1997), *intercultural literacy* refers to the skill of communicating productively within multiple cultures and contexts (Pegrum et al., 2018). *Ethical literacy* is the matter of respecting the use and reusing others' ideas and respecting others' identities in interaction with them.

Re-design. For years, composing texts was at the level of producing the knowledge in mind. The critical view of those produced texts was at the level of their design in which texts were shaped in an uneven context (Kress, 2010). Meanwhile, the process of composing, criticizing, and designing is changing in the digital context since the meaning of *re-designed* is fulfilled through our (re)conceptualizing of the world around (Pegrum, 2019). This new process is in line with the identity investigation and construction procedure (Alvermann, 2008; Dezuanni, 2010) besides the significant implications for identity and agency (Kalantzis & Cope, 2012; Kress, 2010). McNicole (2016) emphasized the importance of implementing and educating people to have critical literacy while the previously developed frameworks on digital literacies lacked the criticality aspect (Littlejohn et al., 2012; Hinrichsen & Coombs, 2014). Looking through the critical lens, such aspects of 21st century skills as digital literacy, mobile literacy, material literacy, philosophical, and academic literacy consist of the components of criticality in the fourth focus of the digital literacies framework. The ultimate purpose of wielding such critical lenses is to redesign, consequently, to remix, in which an amalgamation of old and new concepts leads to new ways of

thinking to contribute more productivity to the world (Pegrum, 2019). The ability to transform digital content creatively requires a critical view to bring an analytical lens into the world of technology in which misinformation, disinformation, and fake news are overloaded.

Empirical Background

Textbooks have always had a significant role in delivering course content. Many researchers have investigated the opportunities provided by textbooks as well as the challenges they have posed from the past to the present (Khany & Kamalvand, 2022). However, the content is mainly transformed through coursebooks and practiced via workbooks related to them in traditional language classes. Such an assumption cannot, however, be drawn in the 21st century where a wide variety of materials are available and presented through technology. Therefore, the role of textbooks might be minimized if they retained their conventional style without revising and connecting to the world of technology. Compensating the cons and winning the demands of the market (Burton, 2012), textbook writers and publishers have started providing multimodal packages such as video and audio files, websites, and social media pages to enrich their content (Kouis & Konstantinou, 2014).

In this regard, Ajayi (2012) investigated how two teachers deployed multimodal resources of textbooks for English as a second language (ESL) instruction based on Halliday's theory of systemic-functional linguistics. Wu et al. (2021) also attempted to foster creativity and innovation, critical thinking and problem solving, communication, collaboration, and computer-information literacy through a virtual reality learner-centred content creation project.

In the same vein, Hismanoğlu (2011) focused merely on technological tools or digital literacies to elicit the integrated or ignored ICT tools in ELT textbooks. Based on this study, DVDs and CD-Roms, e-portfolios, and the internet were incorporated into the intended coursebooks, while chatting, e-mail and social software were ignored. Similarly, Bouzid's (2016) study evaluated the 21st century skills in ELT textbooks in Morocco, in which communication, cross-cultural understanding, collaboration, critical thinking, creative thinking, ICT literacy, and professional and social development were found as 21st century skills in the textbooks. Lau et al. (2018) investigated the role of 100 commonly used textbook learning resources through an e-learning framework. The findings of their cluster analysis revealed that the textbooks were mainly appropriate for low to mid-order e-learning based on intermediate cognitive procedures (i.e., remembering, understanding, applying, and analyzing). Therefore, the authors found it necessary to support high-order e-learning which involved advanced cognitive procedures (i.e., evaluating and creating).

Nushi and Momeni (2020) elicited the inclusion of various educational technologies introduced or applied in 94 EAP textbooks used in Iranian universities. They concluded that the investigated coursebooks were far from incorporating educational technologies into their content. Huertas-Abril (2021) implemented the framework of digital literacies; then, based on a developed questionnaire, they surveyed the attitude and interest of learners in relation to new literacies with oral skills of primary education. New studies show an increasing interest in developing digital literacy skills (e.g., Yu & Zadorozhnyy, 2022), implementing critical digital literacies (e.g., Bilki et al., 2022), and focusing on the *re-design* aspect of digital literacies, which offers insights into the required digital skills and literacies for learners on their way of making their own multimodal textbooks (Dahlström, 2022).

Thanks to the involvement of education in e-learning, a wide range of educational materials have been developed in digital format available online (Maslova et al., 2020). Implementing digital textbooks can compensate for the limitations of paper-based ones since they can provide diverse learning resources, the opportunity of navigating content, and promote collaboration and transferring of information among the community of textbook users (Joo et al., 2017). Meanwhile, the present status and affordances of printed textbooks still have the potential to keep the value of education in the world of technology. Therefore, it is required to have a clear view of the present status of ELT coursebooks. Consequently, decisions can be made on improving the coursebooks to prepare learners for the changing nature of the digital world.

Methods

This research aims to examine the integration of digital literacies within global ELT coursebooks targeting elementary to upper-intermediate English language learners while seeking to explore the specific approaches and manifestations of these digital literacies in these coursebooks. The pre-existing framework of digital literacy was adopted for this analysis to quantify the presence and the occurrence of digital literacy components in the book series. By doing so, the study intends to offer valuable insights into the potential implications of digital literacy integration for language learning in diverse international contexts.

Materials

To investigate the integration of digital literacies in the design of ELT coursebooks, the latest editions of four book series, including 16 global ELT resources were selected as a sample for analysis. The Touchstone, American English File, Interchange, and Four Corners series were chosen due to their extensive use in educational institutions in Iran, making them representative samples of commonly taught materials. These 16 coursebooks, ranging from elementary to upper-intermediate levels, were published by two distinct publishers. Each of the textbooks includes its pedagogical approach, syllabus, and topics, as well as all the texts, activities, pictures, and notes were investigated in this research to achieve comprehensive data coverage.

Procedure

The content was analyzed, coded, and assessed in terms of how the components of digital literacies were implemented multiple times by the two authors thoroughly via MAXQDA. Initially, the researchers conducted a collaborative analysis to ensure alignment with the digital literacies framework. This collaborative approach facilitated the verification and confirmation of the interpretations of the digital literacy representations in the textbooks. Subsequently, one researcher proceeded with the analysis while adhering to the framework. This approach provided a comprehensive examination of the data while maintaining consistency in the identification and categorization of digital literacies throughout the coursebooks. Table 2 presents detailed information about the intended textbooks.

Table 2. ELT Coursebooks.

Coursebook Series	Edition	Year of Publication	Units	Pages	Publisher
Touchstone	2nd	2014	48	603	CUP
American English File	3rd	2019-2020	48	629	OUP
Interchange	5th	2017	64	600	CUP
Four Corners	2nd	2018	48	610	CUP
Total			**208**	**2442**	

Data Analysis

The data were analyzed by examining the contents based on an assessment of the presence of the digital literacies outlined in the framework (see Table 1.) and calculating the percentage of their occurrence within the textbooks. Therefore, content analysis prompted the implementation of descriptive statistical techniques (frequencies and percentages) (Krippendorff, 2004) to investigate the incorporation of digital literacies within the coursebooks.

Table 3. Digital Literacies' Foci and Components

Literacies	Touch-stone	American File	Four Corners	Inter-change	Overall	Sum
Communication						
Print Literacy	146	114	119	98	**477**	**921 (69.04%)**
Texting Literacy	1	0	0	1	**2**	
Predictive Literacy	1	4	0	0	**5**	
Hypertext Literacy	38	7	2	0	**47**	
Multimodal Literacy	49	71	44	23	**187**	
Gaming/Gamification Literacy	7	0	12	14	**33**	
Spatial Literacy	2	0	0	1	**3**	
Mobile Literacy	41	27	39	35	**142**	
Code Literacy	0	0	2	3	**5**	
Technological Literacy	8	0	1	3	**12**	
Robotic/AI Literacy	2	0	2	4	**8**	
Information						
Tagging Literacy	0	1	0	0	**1**	**31 (2.32%)**
Hashtag Literacy	0	8	0	0	**8**	
Search Literacy	3	3	3	1	**10**	
Information Literacy	0	3	1	1	**5**	
Filtering Literacy	2	0	4	1	**7**	
Collaboration						
Personal Literacy	17	35	20	16	**88**	**285 (21.37%)**
Security Literacy	9	3	0	5	**17**	
Network Literacy	21	32	16	11	**80**	
Participatory Literacy	24	18	16	8	**66**	
Intercultural Literacy	1	1	0	0	**2**	
Ethical Literacy	13	6	2	11	**32**	
(Re-)design						
Critical Digital Literacy	14	8	3	8	**33**	**97 (7.27%)**
Critical Mobile Literacy	8	13	2	6	**29**	
Critical Material Literacy	0	1	3	2	**6**	
Critical Philosophical Literacy	4	3	3	5	**15**	
Critical Academic Literacy	0	0	3	1	**4**	
Remix Literacy	2	1	2	5	**10**	
Overall Frequencies	**413**	**359**	**299**	**263**	**1334**	
Overall Percentage	**30.95**	**26.91**	**22.41**	**9.71**	**100**	

Note: Numbers represent the raw frequency of literacy cases in the examined coursebooks

Findings

Figure 1 illustrates the implementation of the integration of the four literacy foci within the framework of digital literacies across the four coursebook series. A glance over the data illustrates that the coursebooks integrated the foci of *communication* (n=921), *collaboration* (n=285), *re-design* (n=97), and *information* (n=31) into their content.

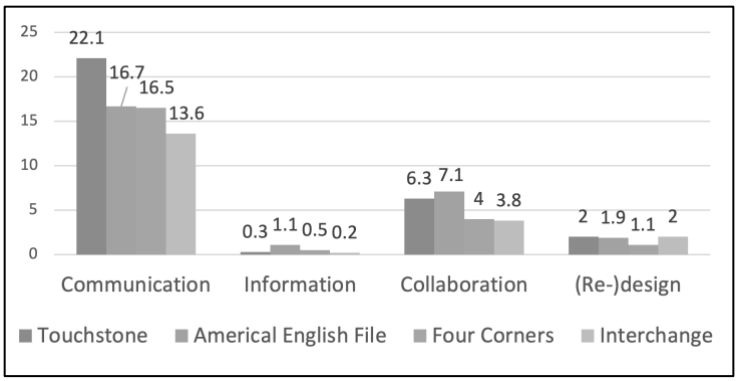

Figure 1. The Percentage of the Four Foci of the Digital Literacies Framework in the Four Series of Coursebooks

As can be seen in the results presented in Figure 1, the Touchstone series incorporates overall focuses into its content more than the other series with 413 cases (30.95%) followed by American English File series with 359 cases (26.91%). As for the Four Corners series, the four focuses are incorporated into their content in 299 cases (22.41%) indicating that this series has more elements of the digital literacies on language development activities than Interchange (n=263, 19.71%) but less than American English File and Touchstone. Table 3 represents the details in each focus for the intended coursebooks. Notably, *information literacy* has the fewest instances across all four coursebooks, totaling just 31 cases (2.32%). The following section offers an in-depth exploration of Table 3, complete with illustrative examples drawn directly from the textbooks. This presentation aims to elucidate the details within the table and provide a clearer understanding of our findings.

Communication

In Table 3, the results reveal that the Touchstone series prominently incorporates the focus on *communication*, accounting for 295 instances, which constitutes 22.11% of the overall literacy foci, or 32.03% within the specific realm of *communication*. The focus of *communication* is implemented the most since the texts in these textbooks were mostly embedded in the form of a website rather than in a newspaper or magazine shape, for instance. It familiarizes the learners with the genre and discourse of web pages, as well. In addition to the provided list of literacies in the framework, we included one other aspect as *tech-language*, which is dedicated to instructing learners in technological terminology and phrases. The total frequency of *tech-language* in the textbooks is 56, which has been included in *print literacy*. For instance, in Interchange 2, page 53, there is a Word Power section that presents a list of technology-related terms such as computer whiz, computer crash, hacker, identity theft, geek, and more. *Predictive literacy* is incorporated mostly as the practice of spelling mistakes in Office Word or web pages. For instance, on page 125 of American English File 3, there is a Wikipedia page where learners are tasked with identifying and correcting misspelled words. An important point regarding Touchstone series is their high frequency of hypertext (n=38), which was found to be lower in the other textbooks (American English File: 7; Four Corner: 2; Interchange: 0).

Based on Bax's (2003) normalization, we preferred to exclude the 3000 instances of audio files (American English File: 1141; Four Corners: 671; Interchange:637; Touchstone: 551) across all book series to focus our attention to other aspects and modalities within the coursebooks. It is worth mentioning that merely the American English File series integrated Video audio files into

their materials and had 256 occurrences of the Go Online section. Due to its high frequency (in comparison with using *multimodal literacy* in Tochstone:49; Four Corners: 44; and Interchange: 23), we factored out the frequency assigned to Video audio files as an outlier. Concerning *gamification literacies*, Four Corners 3, p. 15, provides a reading text entitled "Are video games educational?". Similarly, Interchange 3, p. 76, presents a text on picturing the future through technology and implanting mini-computers into people's brains to improve their memory and vision. It also introduces the technology of immersive telepresence that allows us to feel like we are in two places simultaneously. Touchstone 1, in the listening and speaking section of page 59, discusses functions of phones as an instance of *mobile literacy*.

Investigating the presentation of *coding literacy* in the coursebooks, including 10 occurrences in Interchange, 10 in Touchstone, five in Four Corners, and zero cases in American English File, shows that there was merely a sign of the textbooks teaching or discussing how to code. However, developing mobile applications was partially touched upon in Interchange 3, p. 94, and the how-to of the design or creation of a website was referred to in Interchange Intro, p. 68, and Four Corners 1, p. 90. Throughout the textbooks, *technology-related literacies* were identified 12 times, representing 0.89% of the total literacies explored. For example, in Four Corners 4, p. 19, the issue of ability to fix computers and phones was raised. Finally, references to robotics comprised 0.59% percent of the overall literacies. As an example, figure 2 illustrates page 75 of Four Corners 4, in which it is mentioned that a robotic bear can make life easier (Figure 2).

Figure 2. Four Corners 4, p. 75, An Example of *Robotic Literacy*

Information

The second focus in the framework is Information, including four components: *tagging* and *hashtags*, *searching*, *information*, and *filtering*. According to the findings, all four coursebooks seem to be disinclined to present this focus (n=31, 2.32 %) (American English File:15, Four Corners: 8, Touchstone: 5, and Interchange: 3). As an example of including the components of *information literacy*, in American English File 2, p. 35, students are tasked to complete hashtags

shared on social media such as#mydinnerlastnight, and are required to read the tweets, then complete the hashtags. Interchange 2, p. 65, by asking the question of *'Can you find the information you need?'* invokes the learners to find their precise needs (*searching literacy*). Moreover, Interchange 3, p. 27, provides a text on distinguishing information and misinformation (*information literacy*). In *searching literacy*, Touchstone 4, p. 30, can be exemplified, in which, as a learning tip, the book suggests the learners search words in quotation marks (see Figure 3). An example of *filtering literacy* in Four Corners 4, p. 24, refers to communication overload or too much information and offers some tips to overcome this issue.

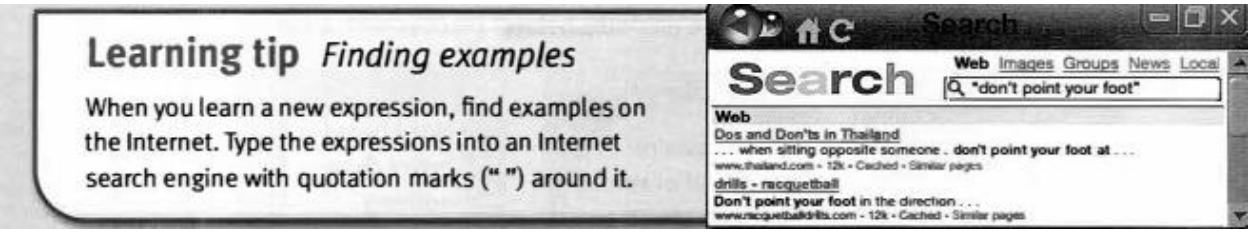

Figure 3. Touchstone 4, p. 30, An Example of *Searching Literacy*

Collaboration

Personal, network, participatory, ethical, and intercultural literacies are embedded into *collaboration* as the third focus within the framework, which stands in the second level of the represented literacies in the intended coursebooks by comprising 21.37% of the literacy components in the coursebooks. The most prevalent among these literacies is *personal literacy*, with a total of 105 instances (American English File: 38; Touchstone:26; Interchange: 21; Four Corners: 20). An example of *personal literacy* is found in Interchange 2, p. 2, where a character engages in a dialog, responding to the question, *'What are you doing?' with the statement, 'I'm setting up my profile for this online dating site.'*

The presence of *network literacy* stands in the second place (n=80; 0.59%), in which, once more, the American English File has the highest number of occurrences (n=32; 2.39%), followed by Touchstone (n=21), Four Corners (n=16), and Interchange (n=11). Touchstone 2, p. 29, gives the learners advice on how to post on a social networking site, for instance. Regarding *participatory literacy*, the Touchstone series includes the highest number of occurrences (n=24) followed by the American English File (n=18), Four Corners (n=16), and, finally, the Interchange (n=8). To clarify this, Touchstone 4, p. 123, can be mentioned, in which the learners are asked to post their resume on job-searching websites. Or, in Touchstone 4, p. 46, and in Interchange 3, p. 29, there are questions and answers on a website, and some online users try to participate in the discussion and post their responses.

A crucial factor to be taken into account by coursebook writers and publishers is *ethical literacy* (only 32 cases and 2.39 % in total, Touchstone: 13; Interchange: 11; American English File: 6; Four Corners: 2). Touchstone 4, p. 142, offers some ethical issues concerning the use of technology, such as *'texting too many times in a day can offend people'*. Incorporating *security literacy*, Touchstone 4, p. 50, is about smartphone security concerns, and Touchstone 3, p. 93 offers practical advice on keeping personal information safe, with a specific focus on credit card security.

Re-design

Turning to the fourth focus within the framework, *re-design*, the analysis reveals a slightly different order among the coursebooks compared to the previous literacy focuses (Touchstone: 28; Interchange: 27; American English File: 26; Four Corners: 16). Delving into the details clarifies that the biggest portion of the *re-design* focus is allocated to *critical literacies*. Additionally, it is noteworthy that very few cases were identified for *remix literacy* (Interchange: 5; Touchstone: 2; Four Corners: 2; and American English File: 0).

Various examples within the coursebooks exemplify *critical digital literacy*, such as the example of a family complaint in Interchange 2, p. 43, *my daughter never takes her headphones off*. In addition, the inclusion of a text on *Do you need a technology diet?* in Touchstone 1, p. 58, is to exemplify the probable disadvantages of spending too much time on computers and cell phones. As an example of *critical mobile literacy*, in Touchstone 4, p. 59, there is a text entitled *Worried about smartphone privacy* and a list of follow-up questions such as "*What should you do to keep your location private?"* and other related questions for the sake of protecting our privacy are presented. Interchange 3, p.1, as an example of *critical material literacy*, shows how Americans throw away around 130 million cell phones a year and much of this e-waste ends up in landfills. For *critical philosophical*, Interchange 3, p. 137, discussed the question of "*Is the digital nomad lifestyle right for you?".* Interchange 3, p. 57, also provides an example for the *critical academic literacies* by arguing the topic of preferring to take online courses or traditional ones, and Four Corners 3, p. 16. has a discussion on the advantages and disadvantages of online and distance learning.

Discussion and Conclusion

In an era mainly shaped by technological advancements, the landscape of essential competencies required for active participation in digitally interconnected societies remains uncertain. To clarify the various aspects of this evolving landscape, stakeholders such as worldwide changemakers, present students and future employers, researchers, and even politicians, need to be well-equipped with the 21st century skills of innovation, creativity, critical thinking, problem-solving, collaboration and teamwork, autonomy and flexibility, and lifelong learning (Handley, 2018). Language has levelled up via technology in a way that the nature of previous acts of reading and writing has changed and evolved (Gee & Hayes, 2011); accordingly, it is necessary to level up the pedagogy of language learning, in which learners, teachers, materials, classroom space, and many other factors play a role. This study undertook a focused exploration of language coursebooks, attempting to offer a comprehensive view of how these educational resources incorporate digital literacies.

In alignment with the observations made by of Mohammadkhani et al. (2021), the analyzed coursebooks did not distinctly address digital literacy as a separate skill, nor did they allocate an entire lesson to promote digital skills among learners. This highlights the necessity of assigning specific sections to digital competences and technology used in the content of language textbooks (Dudeney et al., 2013; Hismanoğlu, 2011; Levy, 2019). Doing so would help integrate these crucial skills directly into language learning materials. By having distinct sections devoted to digital competences and technology, language textbooks can better address the growing necessity for students to be proficient in digital tools. This approach will ensure that learners gain the necessary skills to navigate today's digital world effectively while learning a new language.

The findings of the present study are incongruent with previous research that has explored the integration of educational and technological tools within textbooks. Taking Hismanoğlu's (2011) study as an example, chatting, emails, and social media were ignored in textbooks, while the findings of the present study revealed that the latest coursebooks addressed this gap, considering the fact that we encountered the use of these educational technologies particularly within the focus of collaboration. In the case of Hismanoğlu (2011), the emerging technological tools can be the reason of such discrepancy in results. In addition, the findings of Nushi and Momeni (2020) uncovered limitations in the use of educational technologies within EAP textbooks while the present study reported their incorporation in global coursebooks. This discrepancy may be due to the differing priorities of EAP textbooks, which tend to emphasize content over the instructional approach.

In line with the re-design focus and its components in which creating and critical thinking are the focal points, Dahlström (2022) aimed to foster learners' material development and design. Most of the studies in the related literature concluded that the coursebooks generally fall short in facilitating the practical application of technology (Lau et al., 2018; Mohammadkhani et al., 2021). This limitation is similarly reflected within the evaluated textbooks in which opportunities for practical use and critical analysis of content in the context of digital literacy implementation remain notably limited.

Reviewing and analysing global ELT coursebooks in a critical manner may inform curriculum designers, coursebook writers, publishers, teachers, and all the stakeholders involved in education to more intentional inclusion of digital literacies, especially in the *re-design* and *information* focuses for instruction. This can help enrich the content of English learning materials and make them more aligned with the evolving needs of digitally literate learners. The findings may also inform the writers of the investigated series of textbooks the areas of improvement to be considered in their future editions. For instance, in terms of the *re-design* aspect, they could incorporate exercises which include deconstruction and reconstruction of digital texts. Moreover, the textbooks could emphasize *information literacy* by guiding the learners to distinguish between authentic and misleading sources, which is a necessary skill for the digital era. Furthermore, teachers can use these insights to tailor their materials to integrate these essential literacies into their teaching practices. These findings extend beyond textbook use by providing valuable guidance to teachers in various instructional contexts and ensuring that their students acquire essential digital literacy skills relevant to today's digital world.

With the recent advancements in Artificial Intelligence (AI), such technologies present a transformative potential in shaping the landscape of educational resources. AI technologies offer opportunities for personalized and adaptive learning experiences (Gligorea et al., 2023; Zawacki-Richter et al.,2019), interactive content (Huang et al., 2023), and data-driven insights (Li & Lan, 2022; Zou & Xie, 2018) into student performance. However, while AI continues to revolutionize the learning process, the future is likely to follow a hybrid approach where AI-enhanced materials complement traditional textbooks. This combination acknowledges the enduring value of textbooks in providing foundational knowledge. The evolving trend in material development today involves utilizing AI's capabilities while preserving the pedagogical strengths of traditional instructional resources (Ng et al., 2023), which aims to optimize learning outcomes by integrating AI-driven technologies alongside well-crafted, reliable textbook content. Therefore, by examining the intersection of AI and educational materials, this study highlights the potential evolution of

learning resources while acknowledging the relevance of textbooks in a digitally-driven educational landscape.

The current research sought to point out the direction for further research on appropriate resources for gaining sufficient skills and literacies required in the digital era. Furthermore, it offers practical implications for educators by revealing the gaps in the spectrum of learning resources and identifying the necessity for more critical and effective. It will provide insights for textbook authors and publishers to channel their effort to develop applications that facilitate the incorporation of digital literacies and improve learning performance. While this study primarily quantified the integration of digital literacies into coursebooks, further research can reflect the quality of their usage in the real context of classrooms. Additionally, it is worth mentioning that this study was conducted based on coursebooks commonly used in Iran; therefore, similar analyses can be conducted for contexts of other countries and coursebooks. Moreover, considering the exclusion of video and audio files due to their outlier frequency, future research could investigate the integration of these multimedia resources into educational materials for teaching English.

This study carries limitations that suggest the necessity for broader research to achieve a more comprehensive understanding of digital literacy integration in language learning. It focused solely on selected global ELT coursebooks, potentially limiting the generalizability of the findings to broader educational contexts or regions where different materials are employed. It also relied mainly on content analysis to evaluate the incorporation of digital literacies. This method, while thorough, might have missed contextual variations in the instructional methods employed, thus potentially impacting the depth of our analysis. Additionally, this study was limited to textbooks representing language proficiency levels from A1 to B2. While this focus allowed for an in-depth examination of these proficiency levels, it also implies that insights into digital literacy integration for higher proficiency levels (C1, C2) were not included in our analysis. Therefore, the specific findings and recommendations offered in our study are applicable primarily within the context of language learning materials for these proficiency levels. Future research can include a broader spectrum of proficiency levels, which would be beneficial in comprehensively understanding how digital literacies are incorporated across various stages of language proficiency.

About the Authors

Azadeh Emadi is a Ph.D. candidate in Applied Linguistics at the University of Tehran, Tehran, Iran. Her writing has appeared in journals including *CALL-EJ, JALT CALL, Journal of Language and Education* ,and *The Journal of Educational Research* .Her research areas of interest include computer-assisted language learning, corpus linguistics, digital literacy, multiliteracies, and qualitative research methodology. ORCID ID: 0000-0001-8826-1026

Shaghayegh Hosseini is an M.A graduate of Computer Assisted Language Learning (CALL) in the Department of English at Alzahra University, Tehran, Iran. Her main areas of interest are CALL, Intelligent CALL (ICALL), computational linguistics, and language assessment. ORCID ID: 0000-0002-1183-4591

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