International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/



(REVIEW ARTICLE)

Check for updates

# DIGITAL COMPETENCE IN SAUDI EFL EDUCATION: A NARRATIVE REVIEW OF TEXTBOOK INTEGRATION THROUGH DIGCOMP 2.2 CONSIDERING SAUDI VISION 2030

Ashwaq N. Al-Qahtani *

English Language Teacher, The 169th Intermediate School, Ministry of Education, Riyadh, Saudi Arabia.
* Corresponding Author

ORCID Details
Ashwaq N. Al-Qahtani: https://orcid.org/0009-0007-9931-768X

International Journal of Science and Research Archive, 2026, 21(01), 659–671

Publication history: Received on 12 September 2026; revised on 19 October 2026; accepted on 21 October 2026

Article DOI: https://doi.org/10.30574/ijsra.2026.21.1.1925

Copyright © 2026 Author(s) retain the copyright of this article. This article is published under the terms of the Creative Commons Attribution License 4.0

## ABSTRACT

This narrative review examines digital competence in Saudi English as a Foreign Language (EFL) education, with particular attention to its implications for textbook integration, become a central educational outcome in the context of digital transformation and twenty-first-century learning. Drawing on the Digital Competence Framework for Citizens 2.2 (DigComp 2.2), this paper clear research on Saudi EFL textbooks, technology-enhanced language learning, English language curricula, teacher readiness, educational reform and digital citizenship. The discussion is situated within the educational and digital-transformation priorities of Saudi Vision 2030. The review indicates that digital competence is increasingly recognized as relevant to Saudi EFL education, its systematic integration into textbooks remains insufficiently examined. The available literature provides stronger evidence on the use of digital tools in classroom instruction than on the extent to which EFL textbooks themselves develop digital competence. When interpreted through DigComp 2.2, communication and collaboration appear more visible than information and data literacy, digital content creation, safety, and problem solving. This pattern should be interpreted cautiously because direct research on Saudi EFL textbooks through DigComp 2.2 remains limited. The review suggests that EFL textbooks can support learners' ability to search for and evaluate information, communicate and collaborate digitally, create digital content, use technology safely, and solve problems through digital tools. Achieving these goals requires stronger alignment among curriculum standards, textbook design, teacher preparation, classroom implementation, and assessment. Future research should conduct direct and comparative analyses of Saudi EFL textbooks using DigComp 2.2.

**Keywords:** Digital competence; DigComp 2.2; Saudi EFL education; EFL textbooks; Textbook integration; Saudi Vision 2030.

## 1 INTRODUCTION

Digital technologies have become an integral part of modern education and have influenced the ways in which students are accessing information, communicating, collaborating, creating content and problem solving. The cultural and technological ubiquity of digital tools in teaching and learning practices requires educational systems to equip learners with the skills to operate the technology and to engage them with it in critical, safe, ethical, and creative ways. In this context, digital competence has become an important educational outcome that goes beyond the concept of information and communication technology (ICT) skills [1, 2].

Digital competence is the confident, critical and responsible use of digital technologies to learn, work and participate in society. According to the European Digital Competence Framework for Citizens (DigComp 2.2), this competence is divided into five interconnected domains: information and data literacy, communication and collaboration, digital content creation, safety and problem solving [1]. These areas provide a holistic perspective of the knowledge, skill and attitudes that learners need to have in the digital world.

Digital competence is especially relevant to EFL education where digital technologies can facilitate authentic language usage, communication, collaboration, and access to world's learning resources. Within EFL settings, digital platforms and learning management systems, online collaborative tasks, digital storytelling, and AI-supported instruction have been linked to enhanced learner engagement and motivation, language proficiency, and interaction [3, 4, 5, 6]. However, good technology integration requires not just access to digital technology, but intentional technology planning as well as teacher readiness and curriculum that supports good use of technology in the classroom [7, 8].

Textbooks play a key role in this process, as they frequently turn curriculum aims into specific learning activities, tasks, texts and assessment opportunities. Textbooks offer opportunities for introducing to the learner digital vocabulary and concepts, for using digital tools to communicate and to create content, and for learning how to apply critical digital practices in EFL education. It is therefore important to study the representation of digital competence in EFL textbooks to determine whether digital competence is limited to classroom use or is part of a meaningful learning trajectory [9, 10, 11].

Digital transformation and educational reform are significant national priorities in Saudi Arabia, under the umbrella of Saudi Vision 2030. The Vision focuses on quality education, building human-capabilities, innovation, employability, and preparing individuals for a knowledge economy. These priorities are closely related to the English language education, as English is playing a role in communicating with the world, academic mobility, getting knowledge from around the world, and participating in future economic opportunities [12, 13, 14].

The recent studies investigated the link between EFL education and Vision 2030, focusing on the role of English language teaching in digital transformation and economic development in EFL study [15, 16, 17]. Meanwhile, persistent issues have been identified in the context of using technology in education, such as unequal access to technology, teachers' readiness, infrastructure limitations, teacher-centered learning, and the mismatch between policy implementation and application in the classroom [18, 19, 20, 21]. National challenges indicate that efforts to reform education must be well tailored to curriculum standards, textbooks, teacher training, classroom practices and evaluation.

While research on using technology in EFL learning in Saudi Arabia has increased, the textbook has received limited attention as a medium to enhance digital competence in EFL learning. Prior research has focused on the concept of digital in EFL textbooks in the elementary level digital skills curricula, digital skills acquisition in other subjects [22]. and the alignment of EFL education with Vision 2030 [9, 10, 11, 22, 23, 24]. This gap is significant as there is more evidence available on the use of digital tools in teaching rather than on the systematic inclusion of digital competence in EFL textbooks. Research on enhanced technology learning has demonstrated potential that can be gained by using digital technology in learning activities in the classroom, but it does not necessarily indicate whether the textbooks contain a structure for developing digital competence [8, 17, 25]. The existing evidence needs to be synthesized and the relationship between digital competence, integration of EFL textbooks, and Saudi Vision 2030 needs to be clarified.

This paper aims to provide a narrative review of digital competence within Saudi EFL education with a focus on the implications for the integration of textbooks. It adopts the analytical framework of DigComp 2.2 and incorporates the vision of education priorities in Saudi Vision 2030. The review's goal is to uncover common trends in the literature, identify whether the digital competence is studied in relation to the EFL textbook contexts in Saudi Arabia, and pinpoint gaps to be explored.

Specifically, the review addresses the following questions:

- How is digital competence conceptualized and addressed in Saudi EFL education and related literature?
- What evidence exists on the integration of digital competence in Saudi EFL textbooks and curriculum materials?
- How can the available evidence be interpreted through the five DigComp 2.2 competence areas?
- How does the current literature align with the educational and digital-transformation priorities associated with Saudi Vision 2030?
- What gaps and future directions emerge for Saudi EFL textbook design, teacher development, and digital-competence research?

By addressing these questions, the review contributes to a more precise understanding of digital competence in Saudi EFL education. Rather than focusing only on whether technology is used in classrooms, it examines whether EFL textbooks provide structured opportunities for learners to develop the digital capabilities emphasized in DigComp 2.2 and Saudi Vision 2030.

## 2 LITERATURE REVIEW

### 2.1 Using digital technologies in education. Digital Competence in Education.

Digital competence is considered a key learning objective in the twenty-level century. It is not just about using digital devices, but also about locating and assessing information, collaborating and communicating with others using digital technologies, and producing digital content, using technologies safely and responsibly, and solving problems in digital environments. The five dimensions of DigComp [1, 2]. are reflected in these dimensions: information and data literacy, communication and collaboration, digital content creation, safety, and problem solving.

Digital competence is now recognized in education as the basis for a digitally literate society, living a life with media and active thinking. The focus on digital competence frameworks has been on opportunities for learners to access digital technologies as well as to use these technologies purposefully, ethically and creatively [26, 27]. In language learning, for instance, digital technologies can facilitate real-world language communication, group learning, and creating multimodal texts.

The DigComp framework has been used to guide curriculum and teacher education in other educational contexts. Research on Digital competence training and teachers' perception shows that teachers can use structured frameworks to assess learners' learning needs, create digital activities and assess the development of learners' digital competences [28, 29, 30]. Based on these studies, it is advised that digital competence can be considered a curricular outcome and not something that is an unintentional consequence of the use of technology.

### 2.2 Digital Competence in EFL Education

Digital competence is linked to language learning in EFL education as digital environments can offer opportunities for meaningful communication, access to authentic materials, collaboration, and content creation. Research on technology in L2 writing indicates that digital platforms, LMS, online L2 collaborative tasks, and AI-based instruction have the potential to positively impact learner engagement, motivation, writing, reading, presentation, and interaction skills [3, 4, 5, 6]. But the literature also suggests that integration with technology is more than just the availability of digital tools. To make good choices of tools and design meaningful learning activities, teachers must be prepared in terms of digital readiness, pedagogical knowledge and confidence. Studies conducted in the context of ELT in Saudi Arabia have emphasized how teachers' technological efficacy is a vital factor that should be developed for successful integration of digital tools into the educational process [7, 8].

The first definition of digital competence (as a language-learning resource) and the second (as a language-learning outcome) should therefore be understood as two equally important aspects of digital competence in EFL education. In addition to learning English using technology, students can also acquire skills in English-mediated digital tasks such as communication, collaboration, creation, information evaluation, and problem solving [31, 32].

Digital competence has been gaining more attention in Saudi Arabia, as part of the educational reform and digital transformation agenda. Research into the curricula and textbooks of digital skills has focused on the level of alignment with national standards and how well they enable students to develop digital skills [10, 22]. From these studies, it can be inferred that curriculum materials are important in the implementation of national digital-skills expectation in the classroom, studies

have identified digital citizenship as a crucial aspect of curricula in Saudi Arabia. The study conducted on digital citizenship in the field of Arabic and Islamic education curricula found that issues related to online safety, responsible usage of technology, privacy, and ethics are becoming more prominent as issues to address in education [23, 24]. The studies are not directly focused on EFL textbooks, but they will be useful in providing background knowledge of how digital competence is dealt with in the Saudi curriculum.

Studies on digital literacy in this context indicate that digital skills don't necessarily come with digital technology. The results of the present study indicated that the digital competency of EFL learners might not always correspond to their self-assessment of their competence, especially when it comes to online search and assessment. Al-Seghayer [33] also found this incongruent relationship between the self-assessment of digital competency and the actual performance of EFL learners, particularly in the areas of online search and assessment. This finding calls for explicit teaching and formal learning experiences over and above students' informal digital experiences.

### 2.3 Saudi EFL Textbooks and Digital Content

Saudi EFL textbooks have been scrutinized with regards to various curriculum and learning outcomes such as vocabulary input, curriculum alignment and learner exposure to digital terminology. Alsaif and Milton [11] investigated the content of school textbooks in Saudi Arabia and discussed the significance of the content in textbooks in the development of language skills. Their study is not about digital competence, but it shows the potential of textbooks to shape the experiences and learning of students in formal learning environments.

More directly relevant to the present review, Alharbi [9] studied the digital terminology in elementary EFL textbooks and concluded that the learners hardly have access to digital vocabulary and related concepts. This indicates that there is potential for very little language when discussing digital tools, online information, and technology-based practices in early EFL materials.

The influence of the Saudi curricula and textbooks on digital skills and national standards was also explored in other studies. The study by Aleisa and Alangari [10] was conducted to examine the digital skills textbooks and their relationship to the national standards and learning outcomes, while Alfayez et al. [22] studied the consistency between the digital skill curricula and the Saudi national standards. These studies are significant because they demonstrate that by studying the textbooks and curriculum, it is possible to find out how much digital competence is integrated into formal education materials. However, they do not offer an in-depth analysis of Saudi EFL textbooks according to DigComp 2.2.

## 3 TECHNOLOGY-ENHANCED EFL LEARNING IN SAUDI ARABIA. TECHNOLOGY-ENHANCED EFL LEARNING IN SAUDI ARABIA

The research in the field of ILLT (TELL) in Saudi EFL is quite extensive. In fact, a significant amount of Saudi EFL research is concentrated on technology-based teaching and learning rather than on content of textbooks. Research has investigated LMS, online platforms, collaborative online tasks, digital story, and AI-augmented teaching. These studies indicate that technology can positively affect the involvement, motivation, co-operation, writing, reading and presentation skills of learners, provided the technology is used to support meaningful instructional designs [3, 4, 5, 34]. For instance, AI tools in learning suggest that digital tools can enhance learner engagement, enjoyment, and digital competence within effective learning interventions [5, 6]. The same applies to the studies about digital task-based instruction which indicate that technology can have an impact on the learners' motivation and their involvement in the EFL classroom [4]. The main studies being conducted on these topics focus on classroom interventions and teaching practices. While they offer some information regarding the potential of digital tools, they do not necessarily reflect the representation of digital competence in textbooks used for EFL instruction in the classroom. The distinction is important for the present review as textbooks often serve as a gap between curriculum policy and practice.

### 3.1 Digital Citizenship, Safety, and AI in EFL Education

The concept of digital citizenship, online safety, and ethical use of technology has gained considerable significance in educational research. Research on digital citizenship in Saudi curricula highlights the importance of educating students on ethical standards and proper usage of digital technology, such as privacy and cyber security, and ethical conduct [23, 24]. The adoption of AI in EFL teaching has given rise to novel ethical and pedagogical concerns. The integration of AI in EFL learning opens new ethical and pedagogical debates in the field. AI's application in EFL classrooms has sparked concerns about academic honesty, responsible use, students' autonomy, and ethical [35, 36, 37]. According to other research, trust in AI, attitudes toward AI, and digital literacy might also impact acceptance and use of AI tools in L2 learning [38].

### 3.2 EFL Education and Saudi Vision 2030

Education has been the cornerstone of Saudi Vision 2030 to drive the national transformation through the key points of quality education, digitalization, innovation, employability, and human-capability development. More research on EFL education in Saudi Arabia is now linking the EFL learning to these national priorities, especially as English is a key force in international communication, academic mobility and participation in a knowledge-based economy [12, 13, 14]. Studies of EFL policy and reform suggest that English education is expected to contribute to preparing learners for future economic and professional opportunities. Ismail and Namaziandost [15] examined the role of language planning in digital economy transformation, while Albaqami et al. [16] reviewed the alignment of EFL policy with Saudi Arabia's economic transformation and Vision 2030. Similarly, Alshehri et al. [17] examined the alignment of EFL education with digital skills in the context of Vision 2030 At the same time, the literature identifies persistent implementation challenges. These include teacher-centered practices, limited teacher readiness, infrastructure constraints, uneven access to technology, and gaps between policy expectations and classroom practice [18, 19, 20, 21]. These challenges suggest that achieving Vision 2030 goals requires alignment not only between policy and curriculum, but also among textbooks, teacher preparation, classroom implementation, and assessment.

### 3.3 Research Gap

The reviewed literature shows three main patterns. First, studies of Saudi textbooks and curricula indicate growing interest in digital skills, digital citizenship, and curriculum alignment, but limited direct attention to digital competence in EFL textbooks through DigComp 2.2 [9, 10, 22]. Second, a larger body of research examines technology-enhanced EFL teaching and learning, showing the potential benefits of digital tools for language learning and learner engagement [3, 4, 5]. Third, policy-oriented studies connect EFL education with Saudi Vision 2030 and highlight both opportunities and implementation challenges [12, 16, 17]. Despite this growing literature, there is limited research that directly examines how Saudi EFL textbooks integrate digital competence across the five DigComp 2.2 areas. Existing textbook-related studies tend to focus on specific aspects, such as digital terminology, vocabulary input, or curriculum alignment, rather than providing a comprehensive analysis of digital competence as a curricular outcome [9, 10, 11]. Therefore, there is a need for a narrative review that connects digital competence, EFL textbook integration, and Saudi Vision 2030. Such a review can clarify what is currently known, identify gaps in the literature, and provide a foundation for future research on textbook design, teacher development, and digital-competence integration in Saudi EFL education.

## 4 METHODOLOGY

This paper adopts a narrative review approach to examine digital competence in Saudi EFL education, with particular attention to its implications for textbook integration. Rather than conducting a direct content analysis of textbooks, the review synthesizes relevant scholarly literature, policy-oriented studies, and research on digital competence, EFL education, technology integration, and educational reform in Saudi Arabia. A narrative approach is appropriate because the topic spans several interconnected areas and because the available evidence is diverse in purpose, method, and educational context.

The review is guided by DigComp 2.2, the Digital Competence Framework for Citizens, which conceptualizes digital competence through five interconnected areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem solving. These areas provide the analytical structure for examining the literature and identifying the aspects of digital competence that are more or less visible in Saudi EFL research and curriculum-related studies. Saudi Vision 2030 is used as the broader policy context for interpreting the significance of digital competence in English language education.

Relevant literature was identified through purposive searches of academic databases and scholarly sources, using combinations of terms such as digital competence, digital literacy, DigComp, EFL, English language teaching, Saudi Arabia, textbook, curriculum, technology integration, digital citizenship, and Saudi Vision 2030. Priority was given to peer-reviewed studies conducted in Saudi Arabia or directly relevant to its educational context. Additional sources were included when they offered useful conceptual, comparative, or policy-related insights, particularly studies addressing digital competence frameworks, digital citizenship, technology-enhanced language learning, and educational transformation.

The selection of sources focused on relevance rather than exhaustive coverage. Studies were included if they addressed one or more of the following: Saudi EFL textbooks or English language curricula; digital competence or digital literacy in education; technology integration in EFL teaching and learning; teacher digital readiness; digital citizenship; or the relationship between English education and Saudi Vision 2030. Sources that were unrelated to education or that did not provide sufficient scholarly or contextual relevance were excluded.

The analysis proceeded in three stages. First, the literature was reviewed to identify how digital competence is conceptualized in EFL and Saudi educational contexts. Second, relevant findings were organized according to the five DigComp 2.2 areas. Third, the synthesized evidence was interpreted in relation to the educational priorities associated with Saudi Vision 2030, particularly digital transformation, future-ready learning, and the development of learners' capabilities.

Because this is a narrative review rather than a systematic review, the findings should be interpreted as an integrative synthesis of the available literature rather than as a definitive assessment of all Saudi EFL textbooks. In particular, studies examining technology use in classrooms, teacher readiness, digital citizenship, or other curriculum areas are treated as related evidence that helps contextualize the discussion of textbook integration, rather than as direct evidence of the digital content contained in Saudi EFL textbooks.

## 5 FINDINGS

### 5.1 Overview of the Reviewed Literature

The literature reviewed shows that digital competence in the context of ELT in Saudi Arabia is covered under a variety of related but separate strands of research. There are studies which include the study of EFL textbooks and curriculum materials, and there are others that are focused on technology enhanced teaching, learner digital literacy, digital citizenship, teacher readiness and the broader educational priorities that relate to Saudi Vision 2030. Overall, these sources indicate a greater focus on digital transformation of ELL around the use of technology in the classroom or on a policy level, but not as much on the textbook itself.

Another observation is that a lot of the evidence that is available is indirect. Research on digital platforms, LMS, AI-instructed learning and collaborative online work can offer valuable insights into the potential for developing digital skills when technology is used in teaching. However, this type of research is not always a reflection of the representation of digital competence in the design of Saudi EFL textbooks. Thus, the present review separates the evidence for textbooks and curriculum content from the evidence related to digital teaching.

### 5.2 This course covers digital competence in EFL education in Saudi Arabia.Saudi EFL Education and its Digital Competence

In the literature reviewed, digital competence is typically linked to more than the ability to use digital devices. It involves information literacy, online communication and collaboration, producing digital content, safe and responsible use of technology, and using digital tools to solve problems. The dimensions are in rough correspondence to the five areas of DigComp 2.2.

The effects of digital tools on language learning outcomes such as motivation, engagement, writing, reading, presentation skills, and collaboration have been explored in the Saudi EFL context. Based on this literature, it can be concluded that technology is effective in language learning if it is integrated into meaningful pedagogical designs. Many studies, however, continue to focus on technology as a pedagogical resource instead of on the identification and systematic development of digital competence as a curricular product.

### 5.3 Evidence Related to Saudi EFL Textbooks and Curricula

Some of the literature that comes close to the current study indicates a small but growing focus on digital content in Saudi EFL textbooks. The studies of digital terminology in elementary EFL textbooks show that the elementary learners have not been exposed to digital vocabulary nor to digital related concepts. Other research on the curriculum has focused on digital citizenship, digital skills standards and digital curriculum alignment with national expectations. Such studies are relevant as they point to the wider question of how digital competence is integrated into school materials, not all of which are specifically targeted to the English language textbooks.

Based on the evidence reviewed, the following conclusions can be drawn: The role of EFL textbooks in developing digital competence is a need to be clearer. It is possible to find literature that presents digital vocabulary, themes, or activities, but no literature currently exists that offers a comprehensive view of the consistency of these across grade levels, across books in a series, or across skill levels. This is especially important because books are often used as the link between policy and practice in the classroom.

### 5.4 Synthesis through DigComp 2.2

#### 5.4.1 Information Literacy & Data Literacy

The concept of information and data literacy is most found in the literature in relation to students' skills in searching, assessing and handling digital information. Studies conducted on Saudi EFL learners' digital literacy indicate that some learners face problems when trying to assess the relevance and reliability of search results on the Internet. Furthermore, the lack of digital terminology in the EFL textbooks in the primary school level indicates that early competencies in the area of information search language and concepts might be limited.

This area is reviewed and seems to be less developed than the area of textbook-based learning. While digital tools can facilitate information searching and evaluation, few studies provide direct evidence that Saudi EFL textbooks explicitly design tasks that require students to locate, assess, compare, and organize digital information.

### 5.5 Communication and Collaboration

Literature has more examples of communication and collaboration in the study of online learning environments, learning management systems, social platforms, and collaborative digital tasks. The following are potential benefits reported in these studies: involvement, interaction, motivation, writing, and presentation skills. These results suggest opportunities for meaningful communication in English in digital environments.

Much of this evidence, however, relates to technology assisted instruction and not textbook design. Collaborative and communicative opportunities seem to be more related to teachers' use of digital platforms and activities than to tasks in the EFL textbooks themselves. This could indicate digital competence in communication and collaboration skills and the lack of structured opportunities within school textbooks for the use of digital tools for communicative and collaborative purposes.

### 5.6 Digital Content Creation

Digital content creation refers to the production of presentations, digital stories, multimedia texts, collaborative documents, and other types of LGC. From a review of the literature, it has been determined that with careful design, digital storytelling, collaborative writing, task-based digital activities and AI-supported learning can benefit Saudi EFL learners.

It is noted that, concurrently, the evidence is not conclusive of the regular use of structured tasks in Saudi EFL textbooks for the creation of digital texts. Compared to the currently available studies, the interventions described in classrooms or technology-supported activities are more frequently described than the production tasks that are embedded in the textbook. Therefore, the use of digital content creation as a potential field in EFL learning seems to be a good research field, but it is not well documented in the recent literature in EFL textbooks.

### 5.7 Safety

The safety-related themes cover digital citizenship, online privacy, cyber security, responsible technology use, digital well-being and awareness of ethics. The literature reviewed further showed an increasing concern over these issues in the field of education in Saudi Arabia, especially regarding digital citizenship and ethical use of emerging technologies like artificial intelligence.

As for the safety aspect, however, it seems to be one of the least documented areas in relation to Saudi EFL textbooks. Much of the research that addresses digital citizenship is conducted in other areas of the curriculum, or on ethical issues with technology in higher education, instead of the way that safety is addressed in the English language teaching materials. It does not imply that there are no references to safety in EFL textbooks just that the literature available is not sufficiently explicit to be able to judge its quantity or quality.

### 5.8 Problem Solving

The problem solving is indirectly present in the study of task-based learning, AI-assisted teaching, critical thinking, and technology-mediated classroom activities. These studies indicate that digital tools can facilitate students' involvement in problem situations, ideas for solutions, and more demanding language.

However, there is not much direct evidence in the literature which indicates that problem solving is explicitly developed as a digital competence in Saudi EFL teaching textbooks. Problem solving often seems to be related to the design of digital learning tasks, not to the text. This indicates that further research is needed to explore whether digital tools, solutions to

technical and communicative problems, and the application of language skills to real issues are presented in a graduated manner in EFL textbooks.

### 5.9 The alignment with the Saudi Vision 2030

This literature review focused on policy-oriented literature that places the role of English language education within the broader vision of Saudi Vision 2030, which encompasses educational quality, digital transformation, employability, innovation and human-capability development. English is taught as a vital medium in international communication, academic mobility and in managing a knowledge economy.

Concurrently, some research documents ongoing issues in implementing reform targets in the classroom. Challenges to this involve inequitable access to technology, teacher preparedness, infrastructure constraints, teacher-focused approaches and mismatches between policy expectations and practice. On the other hand, the limited direct evidence of the incorporation of digital competence in textbooks indicates that more focus could be required in this space so that digital competence is integrated with the curriculum and curriculum materials are aligned with the emphasis on digital competence in the national reform agendas.

### 5.10 Emerging Gaps

The review reveals four major gaps in literature. The first is that there is not much first-hand research on Saudi EFL textbooks specifically within the framework of the DigComp 2.2. Secondly, the correlation of the textbook usage and classroom technology use is still not explored enough. Thirdly, safety, digital content creation and information and data literacy seem to deserve more attention in the context of EFL textbooks. Finally, there is a demand for research that aligns the design of textbooks and teacher development, along with assessment systems and the agenda of digital transformation for Saudi Vision 2030.

The literature reviewed indicated that digital competence has become a growing concern in the field of education in EFL in Saudi Arabia, but the systematic inclusion of digital competence in the textbooks has not been extensively studied. The evidence in support of technology-enhanced instruction is strongest; evidence relating to the incorporation of digital competence into the textbooks is still limited and disjointed.

## 6 DISCUSSION

The results show that digital competence is becoming more known and accepted in the context of EFL in Saudi education, however, it is little explored in textbooks. Studies examining technology-enhanced teaching are more pertinent than studies that simply examine textbooks. Digital competence development by using digital tools in the classroom cannot be assumed to be supported by the textbooks in a systematic way [8, 17, 25]. In this context, the review examines the extent to which content of the curriculum intentionally builds learners' skills to seek and assess information, communicate and collaborate digitally, produce content, and use technology safely and solve problems as outlined in DigComp 2.2 [2, 26]. Information and data literacy needs greater attention, as some learners struggle to evaluate online search results [33], and limited digital terminology in elementary textbooks restricts early opportunities [9]. Textbooks could develop learners' ability to locate, evaluate, and organize digital information, supporting critical reading and source-based writing [2, 31].

DigComp 2.2 does not distribute the attention equally across the five areas. Research focused on how online platforms, collaborative writing, and digital interaction influence communication and collaboration processes is more evident [3, 4, 40]. The following abilities, including information and data literacy, digital content creation, safety and problem solving, are less documented in Saudi EFL textbooks. This may be attributed to the gaps in the content or the lack of research in digital competence in textbooks, which have been studied in terms of vocabulary, curriculum alignment, or digital terminology [8, 25]. It is still recommended that textbooks contain activities for students to assess information sources, work collaboratively and digitally, produce texts, reflect on safety and ethics, as well as activities that involve authentic problem solving [32, 34].

Communication and collaboration are evident as part of LMS based learning, videoconference courses and collaborative tasks and it is useful for participation, writing, presentations and motivation [35, 37, 38].These opportunities, however, are linked with the use of the platform by the teachers and not with the tasks presented in textbooks, indicating a mismatch between the potential of digital tools and textbook provision [12, 15, 17].While digital content creation is promising, it is not sufficiently documented in textbooks, digital storytelling, collaborative writing, and AI-supported instruction demonstrates benefits when well-designed. It is recommended to use a variety of graduated tasks, including digital posters, presentations, multimedia stories, and collaborative projects [35, 37, 38, 45]. Themes related to safety, such as digital citizenship, privacy, cybersecurity, ethical technology use, and well-being have started to be talked about in Saudi research, although they are

largely not introduced in EFL textbooks. This is not a lack of safety; it is where there is no direct evidence. The use of AI in the analysis of textbooks and in curriculum development is a topic that needs to be discussed [39, 40].

Problem solving is implicit in task-based learning, AI-based teaching, and critical thinking using digital devices, which indicate that digital tools have the potential to engage students in problem and solutions In the future, tools should be used to create tasks that require selecting tools, reacting to challenges, checking solutions, and using real-world applications to develop problem solving skills, with a limited amount of evidence showing textbooks develop these skills explicitly, Digital competence can be integrated into the outcomes, activities, guidance, and assessment of textbooks to connect the dots between Vision 2030 and practice [41]. Textbooks could feature explicit information and data literacy activities, extended digital communication and collaboration opportunities, gradual development of content from posters to multimedia projects, integrated safety discussions on privacy, identity, cyberbullying, misinformation, and AI ethics and authentic problem-solving activities [42, 43].

The review has redefined digital transformation as questions of whether textbooks offer structured opportunities for digital competence and focuses on the DigComp 2.2 as a framework for research, curriculum and design. This represents the state of current knowledge and doesn't necessarily mean that textbooks are of poor quality. As for future recommendations, researchers should directly investigate Saudi EFL textbooks in terms of DigComp 2.2 in terms of grades, skills, and series [44].

### 6.1 Limitations

There are some limitations to this review that should be considered in interpreting the findings. First, it is a narrative review, as opposed to a systematic review. While the review adhered to a structured approach of identifying, selecting and synthesizing the relevant literature, it was not a comprehensive search of published literature or a formal systematic review of the literature to assess the risk of bias. Thus, the results of the study should be interpreted as an integrative synthesis of the evidence available, and not as a comprehensive evaluation of all the Saudi EFL textbooks.

Second, the review is conducted since related studies in Saudi Arabia instead of a significant direct body of research that studies Saudi EFL textbooks based on DigComp 2.2. A large portion of the studies included are not concerned with textbook content per se, but rather with the use of technology in teaching, digital literacy of the learner, teacher readiness, digital citizenship, or education reform. Therefore, the conclusions of textbook level integration should be approached with caution.

Third, some of the reviewed evidence is context-specific, small scale, and/or part of a sample. Research on specific populations of learners, teachers, or educational contexts may not adequately reflect the diversity of EFL research in Saudi schools at all levels, across all regions, and in various contexts. This restricts the generalizations made by the findings.

The review is subject to the general restrictions of literature itself (4th). Saudi education continues to evolve with the vision of 2030 and curriculum content, teaching practices and institutional priorities may still be evolving. Thus, the findings are not necessarily a culmination of the policy and educational climate, but rather a progression of it. DigComp 2.2 was prepared in a European context as a framework for citizens' digital competence. It is a valuable analytical tool to analyze the Saudi EFL education, but it needs to be adapted when applied to Saudi textbooks and curriculum. The framework should be adjusted to the Saudi context considering variations in curriculum objectives, students' needs, English language proficiency, and national education priorities.

### 6.2 Future Research

In the future, researchers should abandon the indirect evidence and directly analyze Saudi EFL textbooks based on DigComp 2.2. These studies should investigate the five DigComp 2.2 areas in terms of how they are covered in the textbook activities, tasks, learning outcomes, and supplemental materials, including information and data literacy, communication and collaboration, digital content creation, safety, and problem solving. Comparative studies are required to explore the discrepancies of the representation of digital competence in grades, series, regions or educational contexts. Comparing elementary, intermediate and secondary EFL textbooks would help find out if there was a progressive development in digital competence, and which areas were more emphasized than others.

Further research should also investigate the correlation between the textbook design, the textbook use in the classroom and the results achieved by the students. While several previous studies demonstrate the benefits of technology in EFL learning, further research is required to establish whether pre-designed DTs in the EFL textbook can positively impact learners' DC, L2 proficiency, engagement, and critical thinking.

Longitudinal and experimental studies are very important because a lot of the evidence that exists today concerns practices or measures in the present or short-term effects of interventions. The study of learners over the course of time would give better evidence of sustainability and transferability of digital competence development across learning contexts.

Further studies are also needed to explore how textbook design, teacher PD and assessment are interrelated elements of digital transformation. Teachers must be well prepared to perform the tasks of digital competence; assessment procedures must acknowledge learners ability to communicate, create, evaluate and solve problems using digital tools, it is suggested that researchers investigate the possibility of implementing DigComp 2.2 into a feasible curriculum and the standard of textbooks for EFL materials in Saudi Arabia. This could create a national educational vision in Saudi Arabia based on a digital-competence framework that meets the needs of learners, the goals of Vision 2030, and the educational priorities of the country.

## 7 CONCLUSION

This narrative review examined digital competence in Saudi EFL education through the lens of DigComp 2.2 and in relation to Saudi Vision 2030. The review shows that digital competence is increasingly recognized as an important educational outcome, particularly in light of national priorities related to digital transformation, quality education, innovation, and human-capability development. The reviewed literature indicates that technology-enhanced EFL instruction can support learner engagement, motivation, collaboration, language development, and critical thinking. However, the evidence on how Saudi EFL textbooks systematically integrate digital competence remains limited and fragmented. Much of the available research focuses on classroom technology use, teacher readiness, digital citizenship, or policy reform, rather than on the direct analysis of textbook content. When interpreted through DigComp 2.2, the literature suggests that communication and collaboration are more visible than other competence areas, while information and data literacy, digital content creation, safety, and problem solving require closer examination in the Saudi EFL textbook context. These gaps do not necessarily mean that such competencies are absent from textbooks; rather, they indicate that further direct research is needed to assess their presence, depth, and progression across educational levels.

The main contribution of this review is that it reframes the discussion from the use of digital tools in EFL classrooms to the more precise question of whether textbooks themselves provide structured opportunities for developing digital competence. This distinction is important because textbooks can serve as a bridge between national reform goals, curriculum design, classroom practice, and learner assessment. Achieving the educational goals associated with Saudi Vision 2030 will require stronger alignment among EFL curriculum standards, textbook design, teacher preparation, classroom implementation, and assessment practices. Embedding digital competence intentionally within EFL textbooks can help prepare learners not only to use technology, but also to communicate, collaborate, create, protect themselves, and solve problems responsibly in digital environments. Future research should therefore conduct direct and comparative analyses of Saudi EFL textbooks using DigComp 2.2. Such research will provide the empirical evidence needed to inform textbook revision, teacher education, assessment design, and the broader alignment of EFL education with Saudi Vision 2030.

## STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

### *Acknowledgments*

The author would like to express sincere gratitude to her supervisor for her invaluable guidance, constructive feedback, and continuous support throughout the completion of this research. Special appreciation is extended for her careful review and insightful recommendations, which significantly contributed to improving the quality of this manuscript.

## REFERENCES

[1] Vuorikari R, Kluzer S, Punie Y. DigComp 2.2: The Digital Competence Framework for Citizens (EUR 31006 EN). Luxembourg: Publications Office of the European Union; 2022. https://doi.org/10.2760/115376

[2] Vuorikari R. DigComp helping shape the education ecosystem in Europe. In: Communications in Computer and Information Science, vol 1600. Springer; 2022. p. 137-148. https://doi.org/10.1007/978-3-031-20518-7_11

[3] Bailey DR, Almusharraf N, Almusharraf A, Hatcher R. Activity choice and perceptions: Influencing factors to learning outcomes within videoconference-enhanced LMS courses. System. 2023;115:103079. https://doi.org/10.1016/j.system.2023.103079

[4] Al-Rashidi AH. Does digital task-based instruction make a difference in EFL university students' motivation in Saudi Arabia? An activity theory perspective. Learn Motiv. 2025;90:102115. https://doi.org/10.1016/j.lmot.2025.102115

[5] Saleh S, Alshewiter KM. A quasi-experimental study on AI-supported informal learning intervention: Cultivating digital competence, academic enjoyment, and engagement among Saudi EFL learners. Computer-Assisted Language Learning Electronic Journal. 2025.

[6] AlTwijri L, Abdelhalim SM. Enhancing reading engagement in adult EFL classrooms through AI-supported instruction: A mixed-methods study. System. 2026. https://doi.org/10.1016/j.system.2025.103906

[7] Al-Khresheh MH, et al. Technology integration and teacher digital readiness in Saudi ELT contexts. 2025.

[8] Rayes ET. Technology integration in EFL teaching and learning in the Kingdom of Saudi Arabia: Current practices, benefits, challenges, and future directions. Int J Learn Teach Educ Res. 2026;25(8). https://doi.org/10.26803/ijlter.25.8.19

[9] Alharbi AS. Digital terminology in elementary EFL textbooks: Exploring the extent of learner exposure. Asian ESP J. 2021;17(5):1-20.

[10] Aleisa DZ, Alangari TS. Alignment of digital skills textbooks with national standards and SOLO taxonomy of observed learning outcomes using Porter's two-dimensional matrix. Eurasian J Educ Res. 2024;24(112):1-19. https://doi.org/10.14689/ejer.2024.112.03

[11] Alsaif A, Milton J. Vocabulary input from school textbooks as a potential contributor to the small vocabulary uptake gained by English as a foreign language learners in Saudi Arabia. Lang Learn J. 2012;40(1):21-33. https://doi.org/10.1080/09571736.2012.658221

[12] Albiladi WS. English teaching and learning in Saudi Arabia: Emerging practices and strategies for achieving the educational objectives of the Saudi Vision 2030. J Lang Teach Res. 2022;13(4):791-800. https://doi.org/10.17507/jltr.1304.11

[13] Al-Mwzaiji KNA, Muhammad AAS. EFL learning and Vision 2030 in Saudi Arabia: A critical perspective. World J Engl Lang. 2023;13(2):435-447. https://doi.org/10.5430/wjel.v13n2p435

[14] Banafi N. Status of the English language program considering Saudi Vision 2030: From students' perspectives. Asian-Pac J Second Foreign Lang Educ. 2025;10(1). https://doi.org/10.1186/s40862-024-00311-y

[15] Ismail SM, Namaziandost E. Future economics and EFL policy in Saudi Arabia: A systematic review of language planning's role in digital economy transformation. Res J Adv Humanit. 2025;6(2). https://doi.org/10.58256/6r9meh15

[16] Albaqami A, et al. Alignment of EFL policy with Saudi Arabia's economic transformation and Vision 2030. 2026.

[17] Alshehri A, Alshammari KK, Jamshed M, Karim MR. Aligning EFL education with digital skills in Saudi Vision 2030: A systematic review. Theory Pract Lang Stud. 2026;16(6). https://doi.org/10.17507/tpls.1606.29

[18] Alqahtani RM, Alhamami M. English as a foreign language teaching approaches in Saudi K-12 education: Teacher-centered or student-centered. J Educ Learn. 2024;18(3):119-131. https://doi.org/10.11591/edulearn.v18i3.21303

[19] Jabeen I. Implementation of new English language policy in Saudi context: Perceptions, challenges, and remedies. J Lang Teach Res. 2023;14(5):1287-1296. https://doi.org/10.17507/jltr.1405.22

[20] Alhazmy R. Challenges of digital transformation in Saudi education. 2026.

[21] Alowayyid S. Technology access and implementation gaps in Saudi schools. 2024.

[22] Alfayez AA, Aljadie AJ, Alfayez SA. The consistency level of digital skills curricula with Saudi national standards. Sci J King Faisal Univ Basic Appl Sci. 2021;22(1):1-9. https://doi.org/10.37575/h/edu/0011

[23] Alzahrani SA, Alshakrah MA. Analysing Islamic curricula in view of digital citizenship. Sci J King Faisal Univ Basic Appl Sci. 2021;22(1):1-10. https://doi.org/10.37575/h/edu/0044

[24] Aljenobi AAR. Implementing digital citizenship elements in middle school Arabic language curriculum in Saudi Arabia. Inf Sci Lett. 2023;12(4):1547-1558. https://doi.org/10.18576/isl/120434

[25] Karim MR. Beyond traditional teaching: A systematic review of research on the role of technology in teaching English language skills for Saudi university students. Theory Pract Lang Stud. 2026;16(6). https://doi.org/10.17507/tpls.1606.32

[26] Garavaglia A, Petti L, Triacca S. Integration of LifeComp and DigComp 2.2 as a theoretical framework for media education. In: Communications in Computer and Information Science, vol 1600. Springer; 2022. p. 57-68. https://doi.org/10.1007/978-3-031-20777-8_5

[27] Kwaah CY, Cobbinah A, Quansah F, Quansah N. Adaptation and psychometric validation of the DigComp 2.2-based perceptions questionnaire on digital competence among pre-service teachers in Ghana. Front Educ. 2026. https://doi.org/10.3389/feduc.2026.1856136

[28] Balula A. The use of DigComp in teaching and learning strategies: A roadmap towards inclusion. In: Proceedings of the 4th International Conference on Technological Ecosystems for Enhancing Multiculturality. ACM; 2016. p. 1-6. https://doi.org/10.1145/3019943.301998329. 2026;34. https://doi.org/10.25304/rlt.v34.3848

[29] Saraiwang S, Pitukwong K. Digital competence of Thai EFL pre-service teachers: Perceptions, classroom integration, and influencing factors. Contemp Educ Technol. 2026. https://doi.org/10.30935/cedtech/18869

[30] Hazaea AN, Alqahtani AAJ. Competences in digital online media literacy: Towards convergence with emergency remote EFL learning. Int J Media Inf Liter. 2020;5(2):75-86. https://doi.org/10.13187/IJMIL.2020.2.164

[31] Liu M, Zhang LJ, Zhang D. Enhancing student GAI literacy in digital multimodal composing through development and validation of a scale. Comput Hum Behav. 2025. https://doi.org/10.1016/j.chb.2025.108569

[32] Al-Seghayer K. Investigating the adequacy of EFL learners' L2 digital literacy skills, consistency of self-assessed competence, and actual performance. Int J Comput Assist Lang Learn Teach. 2020;10(2):1-21. https://doi.org/10.4018/IJCALLT.2020040101

[33] Al Khateeb AA. Socially orientated digital storytelling among Saudi EFL learners: An analysis of its impact and content. Interact Technol Smart Educ. 2019;16(4):342-357. https://doi.org/10.1108/ITSE-11-2018-0098

[34] Al-Othman AAM. Using artificial intelligence in English as a foreign language classrooms: Ethical concerns and future prospects. Arab World Engl J. 2024. https://doi.org/10.24093/awej/call10.7

[35] Elmotri B, Osman WAEAE, Al-humari MA, Hassanein OHS. Possibilities for improving ESP curriculum design and assessment strategies for Saudi universities with ChatGPT. Arab World Engl J. 2025. https://doi.org/10.24093/awej/AI.13

[36] Alsuwat SE. Adoption of ChatGPT in Saudi EFL higher education: Perceptions, institutional readiness, and ethical awareness among university professors. Arab World Engl J. 2026. https://doi.org/10.24093/awej/A3.18

[37] Khoso AK, Honggang W, Darazi MA. Trust and attitude towards AI as pathways to creativity: A TAM model study of EFL students' digital literacy and AI acceptance. Humanit Soc Sci Commun. 2026. https://doi.org/10.1057/s41599-025-06362-x

[38] Al Fraidan AA, Alaliwi M. Digital transformation for sustainable English language learning: Insights from Saudi Arabia and global perspectives. Forum Linguist Stud. 2024;6(6). https://doi.org/10.30564/fls.v6i6.7754

[39] Alshammri R. Digital collaboration and EFL learner engagement in Saudi higher education. 2023.

[40] Aben Ahmed M. Digital problem solving and EFL learning: Implications for task-based instruction. 2022.

[41] Al Fraidan A, AlSalman A. Learner, instructor, and administrator perspectives on online EFL assessment practices and challenges in Saudi Arabia. Comput Assist Lang Learn. 2026. https://doi.org/10.1080/09588221.2026.2640470

[42] Bodolica V, Spraggon M. An end-to-end process of writing and publishing influential literature review articles: Do's and don'ts. Manag Decis. 2018;56(11):2312-2332. https://doi.org/10.1108/MD-03-2018-0253

[43] Alsamadani HA, Gondal S, Ubaid UU, Salieva Z. Impact of collaborative document editing and Pluralsight on digital and writing teaching literacy among in-service English language teachers. Int Res J Multidiscip Scope. 2026;7(1):1-12. https://doi.org/10.47857/irjms.2026.v07i01.05628

[44] Salem MA, Alsyed WH, Elshaer IA. Before and amid COVID-19 pandemic, self-perception of digital skills in Saudi Arabia higher education: A longitudinal study. Int J Environ Res Public Health. 2022;19(16):9886. https://doi.org/10.3390/ijerph19169886

[45] Al Khateeb A, Aldosemani T, Abu-Dawood S, Algarni S. Alignment of university competencies with global skill measures: Implications for Education 4.0 in Saudi Arabia as a case study. Int J Inf Commun Technol Educ. 2024;20(1). https://doi.org/10.4018/IJICTE.336559

[46] Al-Shehri S. Transforming English language education in Saudi Arabia: Why does technology matter? Int J Emerg Technol Learn. 2020;15(6):21-32. https://doi.org/10.3991/ijet.v15i06.12655

[47] Aldawsari M, Karakaş A. Does the Saudi English language curriculum reflect the current state of English? A documentary analysis from a Global Englishes perspective. Taiwan J TESOL. 2021;18(2):1-30.

[48] Alhawsawi S, Alhamad M, Almehdar KS, Ahmed ME. ReadWorks in action research to enhance reading skills for university EFL students. Arab World Engl J. 2025. https://doi.org/10.24093/awej/call11.18

[49] Alshehri SZ, Beloff N, White M. Digital transformation in Saudi public universities: A novel framework for adoption drivers and impact analysis. Ann Comput Sci Inf Syst. 2025. https://doi.org/10.15439/2025F8917

[50] Robinson KA, Saldanha IJ, McKoy NA. Development of a framework to identify research gaps from systematic reviews. J Clin Epidemiol. 2011;64(12):1325-1330. https://doi.org/10.1016/j.jclinepi.2011.06.009

[51] Saudi Vision 2030. Human Capability Development Program delivery plan 2021-2025. 2021. https://www.vision2030.gov.sa/media/pgid4z3t/2021-2025-human-capability-development-program-delivery-plan-en.pdf

[52] Saudi Vision 2030. Human Capability Development Program. n.d. https://www.vision2030.gov.sa/en/explore/programs/human-capability-development-program