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Exploring Saudi EFL Teachers' Awareness, Practices and Perceptions in CALL Materials: Insights from the EFL Context of Saudi Universities

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ARTICLE INFO	ABSTRACT
	This study aimed to investigate the awareness, perceptions, and practices of Saudi EFL teachers in Computer Assisted Language Learning (CALL) materials in EFL context of Saudi universities. Employing a quantitative approach, the study surveyed 77 EFL teachers engaged in online teaching, the study found that EFL teachers demonstrated a comprehensive awareness of CALL materials, although they heavily rely on self-created content, indicating a shortage of specialized resources. They often preferred multimedia materials without being ensured of constructive engagement of learners in learning environment. Their pedagogical choices in adopting CALL materials are in the phase of transition towards learner-centric design and they need additional support to address the concerns of self-regulated and collaborative Saudi undergraduates. In addition, the study identified a disparity between the desire for authentic learner-centeredness and the availability of engaging materials. The practices of EFL educators genuinely focus on designing learner-centered CALL materials, yet improvements are necessary to create more reflective and self-guided learning environments. These findings are based on quantitative data, potentially limiting the depth of analysis and findings. The study's utility primarily extends to Saudi universities and teachers to improve teaching practices and conduct qualitative research to further investigate this area of research. Its findings may be useful for digital educational stakeholders in Saudi Arabia. **Keywords:** CALL Materials, EFL Teachers, Online Learning, Social CALL, Integrated CALL

1. INTRODUCTION

Educational context of online teaching in Saudi universities has undergone significant transformation, driven by the integration of digital technologies and the evolving needs of higher education. Over the past two decades, Saudi universities have embraced online education to enhance the learning experience for undergraduate students, particularly in the domain of English language education. Long before the onset of the Covid-19 pandemic, Saudi universities proactively integrated ICTs at all levels of learning and implemented the use of educational technologies in classroom instructions. For example, dating back to early 1990s they have been employing educational technologies such as closed-circuit television, one-way video networks, and two-way audio networks, internet technologies and e-learning management systems to meet educational challenges such as scarcity of teachers in female-only campuses and growing number of students in the universities (Aljaber, 2018). These initiatives proved highly effective, allowing the universities to accommodate an increasing number of new students and enhance the overall teaching and learning processes. Moreover, these technological advancements created a conducive environment for the adoption of other tools, including learning management systems like Blackboard, facilitating the delivery of educational content and significantly improving the educational experience (Alwalidi & Lefrere, 2010; Aljaber, 2018).

In addition to these educational technologies, Saudi Arabia implemented policies and programs aimed at enhancing education through technology integration. The Tatweer project, a substantial educational reform initiative spanning

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from 2007 to 2013, mandated a comprehensive educational reform package (Allmnakrah & Evers, 2020). This improved school teaching and classroom learning by equipping educational facilities with state-of-the-art technologies such as the Internet and interactive whiteboards (ibid). The Tatweer project also aimed for qualitative transformation in Saudi education, emphasizing the adoption of learner-centered technological tools to promote constructivist learning and critical thinking among students (ibid). This emphasis on technology adoption has also significantly influenced the domain of English language education in Saudi Arabia.

The introduction of Saudi Vision 2030 further reinforced the need for a substantial overhaul in teaching and learning methods (Vision 2030 Overview, 2022; O'Keefe et al., 2020). This vision aims to transform university education to produce employable graduates who are equipped with the skills required by the job market, thereby bridging the gap between the skills needed by employers and the quality of graduates. This transformation is crucial for creating a dynamic workforce capable of contributing effectively to Saudi Arabia's knowledge economy (Vision 2030 Overview, 2022; Allmnakrah & Evers, 2020).

Two other developments supported Saudi efforts to adopt technology in education. The Covid-19 pandemic refurbished the whole educational in terms of digital infrastructure, digital pedagogy, digital learning and prepared Saudi universities to implement online and blended learning more effectively than before. Second, advancements in learning sciences provided more authentic ways of designing learner- Centred learning. It shifted the focus of designing teaching from how EFL should be taught to how students actually learn. Theories such as multimedia learning, constructivism, theory of activity, learning of practice etc are important. These developments enable Saudi university to use digital infrastructure of their universities and use of technology in instructions to update their pedagogical approaches and fulfills the dreams of Saudi vision 2030. .

Recently, Saudi efforts to embrace technology in education are supported by two significant developments. First, the Covid-19 pandemic played a pivotal role in revamping the educational context, specifically in terms of digital infrastructure and the integration of educational practices into online spaces. According to Oraif & Elyas (2021), the pandemic forced educational institutions worldwide, including Saudi universities, to swiftly adapt to digital modes of instruction, thereby enhancing their readiness for online and blended learning environments. Second, advancements in the field of learning sciences have provided substantial insights into learner-centered approaches. Developments in learning sciences such as constructivism, social constructivism, activity theory, and situated learning enabled Saudi universities to use digital network of knowledge to adopt innovative pedagogical and andragogical designs of learning (Siemens, 2005; Mayes & de Freitas, 2004; Youde, 2020). These designs emphasize the importance of aligning teaching methodologies with how students actively engage and learn. These both developments have empowered Saudi universities to leverage their digital infrastructure and technological tools in updating their pedagogical practices and contributing to the fulfillment of the objectives of Saudi Vision 2030.

In this context of education in Saudi Arabia, this research paper investigates the perceptions and practices of Saudi English as a Foreign Language (EFL) teachers regarding Computer Assisted Language Learning (CALL) Materials. It examines how pedagogical practices of EFL teachers in Saudi Arabia engage with CALL materials. The study is grounded in two key assumptions. Firstly, it recognizes CALL materials as an essential component of learning in contemporary digital space, taking various forms such as e-books, Word and PDF documents, PowerPoint presentations, CDs, videos and audios deliverable at various technological platforms such as Blackboard with a range of learner engagement designs. Secondly, it assumes that the increased integration of technology has narrowed the gap between digital natives and digital immigrants; every participant in the technologically rich educational process in Saudi Arabia is a digital native; proficient in carrying their intended tasks and perform their roles in an online or blended environment (Prensky, 2010). It means they are digitally proficient to perform their roles and choices in virtual learning platforms, blogs, chat boards, wikis, and social media and carry their intended learning outcomes.

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This study aims to explore how EFL teachers navigate CALL materials, which represent product materials used within the formal setting of an educational system to assess learning outcomes and grant credentials, as well as how they engage with process materials, which digital undergraduates generate in response to formal or informal inputs during their digital engagement and explorations (Mishan & Timmis, 2015; Tomlinson, 2011). The findings of this study not only determine the perceptions and practices of EFL teachers in Saudi Arabia about CALL materials but also provide insights into digital pedagogies and make recommendation for the quality delivery of education.

Research questions:

(1) How familiar are teachers with the various sources, types, and pedagogical background associated with CALL materials used in online education?

(2) What are the perceptions of EFL teachers regarding the CALL materials they employ in online teaching?

(3) How do teachers implement CALL materials in their online teaching practices?

2. Literature Review

This literature review explores the concepts of learning materials, Computer-Assisted Language Learning (CALL) materials, and pedagogical approaches within the context of online teaching and learning. Addressing the objective of this study, the review encompasses the evolution and development of CALL materials, their relationship with technological advancements, and the resulting pedagogical implications. Towards the conclusion, the review underscores a gap of research between the increased emphasis on technology use and less attention to pedagogical practices within CALL materials. This gap constitutes a focal point for the findings of this study.

Scope of CALL in Materials Development

'CALL materials' stand as an evolving area within applied linguistics and TESOL studies, embodying an interdisciplinary blend of Computer-Assisted Language Learning (CALL) and Material Development. CALL refers to the "application of computers in language teaching and learning" (Levy, 1997:1), while Material development refers to "the principles and procedures governing the design, implementation, and evaluation of language teaching materials" (Tomlinson, 2001:66). Although these fields have distinct primary focuses, their shared fundamental objective remains consistent: facilitating language learning. Together, they address how teaching and learning in language skills, vocabulary, grammar, and pronunciation are supported through technology. Similarly, they focus on employing various pedagogical perspectives and strategies to design effective learning environments through technology.

Over the last twenty years, advocacy for the use of technology in English language teaching has significantly increased. One of the main reasons for this phenomenon is the notion of Digital Natives, which assumes that increased access to technology has radically transformed the brain structure of learners to the extent that the educational system, learning materials, methodologies, and digitally non-proficient generation of teachers (digital immigrants) are no longer relevant; consequently, the whole educational context requires a change representing the most authentic learning experiences of digital natives (Prensky, 2001). Conversely, scholarship in education contested the binary of digital native and digital immigrants, rejecting any exclusive change in the brain structure and consequently learning styles of learners, albeit favoring technology as an innovative medium of content delivery that plays a powerful role in designing a learning environment and leveraging the epistemological beliefs in pedagogy (Selwyn, 2017). This point of view is supported by the review of the history of educational technology in the twentieth century: film, radio, television, and microcomputing (Mayor, 2009 & Selwyn, 2017). According to them, focusing on using technological products rather than on how it helps the learners learn failed to lead to any solid improvements or problem resolution in education.

While Selwyn (2017) advocated for the superiority of pedagogy over educational technology, Siemens (2005) argued the relevance of pre-technology-dated learning theories such as behaviorism, cognitivism, or constructivism and emphasized the need for a digital theory of learning, i.e., connectivism. According to him, learning theories such as behaviorism, cognitivism, or constructivism assume the process of learning happening inside a person's

behavior, mind, or experiences respectively, while advancements in technology altered learning conditions. For example, learning in the digital space is nonlinear, allowing learners to connect with a database of digital networks and apply a range of skills to acquire as much knowledge as they can (Siemens, 2005). It means learners in this digital network of knowledge do not process information as they used to in printed books, physical media like CDs or DVDs, handwritten notes, and other non-digital formats. Therefore, CALL materials do not merely support learning materials in language skills, vocabulary, grammar, and pronunciation through technology; they also encompass adopting new practices and strategies to manage new learning situations and innovative ways of learning by technologically proficient students.

CALL materials in Materials Development

The emergence of CALL materials marks a significant development in TESOL research as its growing importance dynamically reshapes educational landscapes. Tomlinson (2011) broadly defines 'materials' as a general term that refers to anything presenting language information for learning, for example, a textbook, a workbook, a cassette, a CD-ROM, a video, a photocopied handout, a newspaper, or a paragraph written on a whiteboard (Tomlinson, 2011). It encompasses all potential mediums that can contribute to learning. Before technological integration, learning materials were authored by teachers or writers and mainly comprised printed texts, pictures, or audio resources (Reinders and White, 2010). However, the development of Web 2.0 technology has introduced new ways to create materials online, democratizing authorship beyond traditional confines. Formerly viewed as 'products' like coursebooks, materials are now perceived more as dynamic 'processes' (ibid). The emphasis has shifted from creating content to using collaborative tools and social interactions to facilitate learner centeredness in learning (ibid). This signifies a fundamental shift in the role of materials in TESOL contexts.

Two primary factors significantly contribute to the evolving role of materials: shifts in learning theories and technological development. As far as the first factor is concerned, till the end of 20th century, major discourse in approaches and methods in English language teaching was around instructionism, even the very concept of learner-centeredness was designed around instructions (Richards, & Rodgers, 2014, Sawyer, 2014). Teaching methods such as Direct Method, Audiolingual Method and Communicative method were mainly to design instructions (Richards, & Rodgers, 2014). The same approach of designing instruction was translated into CALL practices. For example, during the dominance of behaviorism in the 1950s, Skinner designed teaching machines for programmed instructions and reinforcement automation, while in the era of cognitivism, computer-simulation-based intelligent tutoring systems replaced memorization with active learning experiences (Leavy 1997).

In the beginning of the 21st century, the discourse in teaching and learning shifted from instructional design to design for learning. In this regard, debate on Prensky's digital native and digital immigrants is crucial. He claimed that post-digital generation (digital natives) has developed different thinking patterns and ways of processing information than pre-digital generation (digital immigrant) and there is need of radical change in education systems to meet digital native's learning styles and needs (Prensky, 2001). Similarly, Siemens (2005) argues that traditional learning theories, including behaviorism, cognitivism, and constructivism, are not fit for the new condition of learning in digital environments. He highlighted two main limitations: firstly, these theories objectify learning to be acquired by individuals and ignores learning in digital networks. Secondly, they mainly deal with the learning process but neglect the value of learning and skills that require to work with knowledge out of students' primary knowledge (Siemens, 2005). According to Siemens (2005), repackaging technology in traditional pedagogy does not truly address the needs of the altered context of learning and process of learning. In technologically rich context of learning, process of learning has shifted from the transmission of learning materials and instructions to how technologically proficient learners participate in the digital network of knowledge and how they apply different skills to achieve their intended learning outcomes (Siemens, 2005). It means teaching should not design instruction (how to teach), but around learning i.e. how students actually learn and how they design a learning environment in which students' actions of learners and their participation decide learning outcomes (Siemens 2005, Goodyear 2017). Prensky (2001) and Siemens (2005) exhibited the need for a shift from instructional design to design for learning viewing changes in the context of digital learning.

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This pedagogical shift from designing instruction to designing environment and more emphasis on developing deep knowledge, critical thinking and higher order skills comes from the research studies and practices in theories of learning sciences which uses full potential of educational technology to enhance learning experiences of students (Sawyer, 2014). It requires teachers to design their teaching based on the theories of learning sciences, an interdisciplinary field that draws from various disciplines to understand how people actually learn and how these authentic ways of learning are used in transforming teaching and classroom practices accordingly (Sawyer, 2014). Importantly, the main emphasis of design for learning is on the creation and construction of knowledge along with transmission and acquisition of knowledge (Goodyear 2017). Theories of learning sciences provide range of theories such as connectivism, cognitive theory of multimedia learning, and scaffolding which approach to understand ways of learning and recommend to redesign classroom and teaching around authentic learning experiences of students (Sawyer, 2014).

Teaching as design for learning did not happen in vacuum. It was an implication of technological integration in social environment in the end of 20th and the beginning of 21st century. These changes were mainly concerned with the changes in the learning styles of learners, accessibility to learning materials and digital platforms. These changes caused innovation of new pedagogies such as blended and online learning and designing suitable environments for those adult learners who often tend to self-directed or collaborative learning (Horn & Stake, 2017, Youde, 2020). These concerns of learning in digital environment match with the principles for the materials development for second language acquisition (Tomlinson, 2011). For example, Tomlinson (2011) suggested that learning preferences, distributed learning styles, support to independent learning and opportunities to use the target language should be the guiding principles in materials development for ESL students. The application of these principles can be seen more clearly in the materials development around Communicative Language Teaching (CLT) such as task-based, project-based, and problem-based learning materials (Mishan & Timmis, 2015). Goodyear (2017) calls this approach teaching as a design for learning.

Another factor that significantly shaped the role of communication, interaction, and self-direction in materials development is technological development. CALL materials have always been in the practices of ELT teachers. It dates back to the early 1920s when scholars like Pressey and Skinner pioneered the use of teaching machines for programmed materials (Skinner, 1965). By the 1960s, mainframe computers marked the advent of computer-assisted instruction (CAI), as highlighted by Levy (2008). Subsequently, the evolution of microcomputers and multimedia innovations hastened the incorporation of technology in language learning. However, the pivotal moment arrived with the digital revolution of the 2000s profoundly impacting English language teaching. Technologies such as text messaging, the Internet, Skype, and social networking sites transformed the dynamics of learning enhancing self-directed and collaborative learning (Spiro, 2013, p. 26).

The emergence of Web 2.0 technologies further revolutionized language education, enabling learners to engage in online interactions and create user-generated content (Walker & White, 2013). It enabled learners to have unprecedented access to a wealth of learning resources, including podcasts, Web 2.0 weblogs, blogs, and YouTube channels (Spiro, 2013). Post-2000-technological advancements, particularly the rise of Web 2.0 and mobile technology innovated ways to implement distributed and collaborative learning into formal educational settings or develop skills such as working with knowledge creation and production (Selwyn, 2017, Siemon 2005). These technologies reduced the distinctions between specialist-authored and user-generated learning materials, as well as between product and process materials. They unified all materials under the broader category of 'CALL materials,' encompassing content materials for information and data and process materials as frameworks for learners to apply their communicative abilities (Levy, 2008, Mishan & Timmis, 2015). Technologies such as social media, blogs, wikis, and Web 2.0, instrumentalized active participation, interaction and engagement of leaners in construction and creation of knowledge (Mishan & Timmis, 2015).

In term of wider space to learn and practice English language, CALL materials provide a wider spectrum. It combines learning content, tools and interactive processes where students find an environment to socialize, network, collaborate and acquire language skills as well as develop 21st-century skills such as communication, creativity, critical thinking, and collaboration (Halverson, 2018). In spite of the potentially enhanced value of CALL

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materials, it is often used as supportive materials and its dynamic value is often ignored. In the context of Saudi universities, it is found that the traditional lecture-based learning culture in Saudi universities is often translated into virtual learning environment where low motivation, learner engagement and self-guided learning are common problems in developing active learning (Allmnakrah & Evers, 2020, Alwalidi & Lefrere, 2010, Aljaber, 2018). Similarly, EFL teachers lack adequate online teaching skills and proficiency in designing online learning experiences causing challenges in adopting effective transition towards online and blended teaching (ibid). It implies that instructors need understanding of CALL pedagogies and CALL materials as well as technological knowledge to integrate connected digital culture in their teaching practices.

Pedagogical Framework for CALL Materials

In a CALL design, CALL pedagogies play the central role in determining practices in CALL materials. CALL design is a practical framework to design a learning environment in which different components of teaching and learning process are planned to be delivered (Richards, & Rodgers, 2001, Laurillard 2002, Sawyer 2014, Conceição, & Howles 2020). It includes pedagogy, technology and learning experiences that are planned to be designed (Conceição, & Howles 2020). Pedagogy includes objective of the design, syllabus, types of teaching activities and learning tasks, the roles of learners, the roles of teachers and the role of learning materials (Richards, & Rodgers, 2001, Laurillard 2002, Sawyer 2014, Conceição, & Howles 2020). Subsequent paragraphs mainly deal with CALL design with reference to pedagogy and role of learning materials.

Behavioristic CALL

Behaviorism is a theory of learning originated from structuralism that looks learning as an external process in which acquisition of knowledge about the facts of English language and procedure how to use them are seen in the behavior of a leaner (Levy 1997, Mayes & Freitas 2004). The process follows the repetition of input followed by the assessment and reinforcement till the mastery in the subject matter is achieved (ibid). This theory of learning view technology as a tutor or instructor employed to provide programmed instructions (Levy 1997). In early days, it used mainframe computers and teaching machines, such as those developed by Pressey and Skinner respectively, to conduct learning activities such as drill and practice exercises and tutorial programme (Beatty, 2010, Levy 1997). This CALL design assumes a superior role of technology over a teacher in providing the optimal conditions of learning while learners remain the active respondents to language forms and process (Levy 1997). Warschauer & Healey (1998) termed this design of CALL as 'Behavioristic CALL. As this design of CALL is based on the associationist perspective of learning – transmitting information – it uses Instructional Systems Design (ISD) to design learning experiences. Knowledge about language and target skills are graded in simple to complex units and learning outcomes are assessed and supported with feedback (Mayes & Freitas, 2004, Conceição & Howles, 2020).

Communicative CALL

Chomsky's critique of structuralism and his proposal of innatism significantly contributed to the rise of cognitivism, which views language acquisition as a mental process where learners are believed to be biologically predisposed to uncover the rules of a language system through exposure to language input within their environment (Lightbown & Spada 2001). Later on, this theory of learning became the basis of Communicative Language Teaching aimed to develop communicative competence of the students. Cognitivism views the role of technology as a tool which is employed to enhance capabilities and efficiencies of the students and teachers in their respective roles (Levy 1997). Contrary to behavioristic CALL, Communicative CALL does not replace teachers with self-contained tutorials, rather it assumes an active role of the teacher in the delivery of materials, task setting, technological facilitation, development of materials, assessment, and feedback (Levy 1997). In a Communicative CALL design, learning activities may include drill- practice formats but the main objective of activities remains on students' needs and interaction (Warschauer, 1996). In this regard, the emergence of microcomputers and desktop computers played a critical role in providing stimuli to stimulate discussions, writing, and critical thinking (Levy 1997). These technologies enabled students to use word processing, spelling and grammar checking, desktop publishing, and concordance that helped students develop understanding and language use (Warschauer, 1996). Computer-based activities in Communicative CALL provided use of target language forms in context, learning grammar implicitly,

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and producing original utterances with creativity and flexibility in language use (Warschauer & Healey, 1998). The invention of videodiscs, as highlighted by Levy in 2008, boosted high-speed and storage capabilities for learners while instrumentalizing listening skills as a higher priority over speaking, promoting immersion in the target language, and facilitating correct language use through modeling, thereby reducing anxiety among learners and fostering an interactive learning environment. Warschauer & Healey (1998) name this as Communicative CALL which continued between 1970s to the 1980s (Beatty 2010, Levy 1997).

Integrative CALL

Piagetian constructivism and digital expansion provided the ground for integrative CALL. For example, Piagetian constructivism assumed that learning does not happen through behavioristic imitation or cognitive absorption of information from external sources, but it is acquired through active participation, self-experimentation and observation (Mayes & de Freitas, 2004). According to this perspective, technology should not be used in a transmission-based didactic mode of teaching (Mayes & de Freitas, 2004). It means the design of CALL should provide a learning environment where learners actively engage in constructing knowledge by seeking understanding rather than merely receiving information (Ibid). This involves using their existing knowledge and abilities while promoting self-regulation, self-driven, and goal-oriented learning (Ibid). Moreover, it should support the continuous and cumulative process of building new knowledge based on past learning experiences (Ibid). When technology works according to the actions of the learners letting them participate in the process of constructing and building knowledge, technology plays the role of a tutee (Levy 1997). Warschauer and Healey (1998) suggested this featured use of technology as Integrative CALL that seamlessly incorporates various language skills and technological tools together throughout the learning process not as a sporadic and disconnected use of computers in previous CALLs. This integration include that students employ a variety of technological tools to learn English language through technology rather than an isolated and superficial activity of using technology (Warschauer & Healey, 1998). This CALL received significant support from technological inventions such as multimedia and internet technologies that characterized asynchronous and synchronous communication, reading, writing, and learning activities (Warschauer & Healey, 1998).

Social CALL

Learning is a complex process influenced by the epistemological beliefs of both learners and teachers. In language teaching, more focus is likely on the "acquisition of knowledge and skills," than other perspectives like 'learning as participation' or 'learning as knowledge creation' (Goodyear, 2017). As described in the previous paragraph, Integrative CALL extended legacy of the cognitivism backed CLT method in ELT to constructivism. According to constructivism, transmission of learning materials no matter if it is multimedia, does not lead to better learning until learners' experiences and background knowledge do not collaborate (Mayes & de Freitas, 2004). Social CALL a very different dimension to these different perspectives of CALL.

Social CALL adds the aspect of collaboration and social interaction within the learning environment and contribution of students in construction and co-construction of knowledge (Thomas, Reinders, and Warschauer, 2013). This view receives its theoretical basis from neo-Vygotskian conceptual framework (Socio-cultural constructivism) (Bax 2011).

Social CALL was suggested by Thomas, Reinders, and Warschauer (2013). This approach diverges from traditional instruction-centered learning methods to learner-directed collaborative and participative learning using technology of social learning. It harnesses the power of social technologies and constructivist principles to cultivate higher-order critical thinking and creative communication skills among learners (Thomas, Reinders, & Warschauer, 2013). Social CALL views on integrating social technologies and student-centered methods and environments such as Problem-based learning, Cognitive apprenticeships and Project-based learning in language learning curriculum (Thomas, Reinders, and Warschauer, 2013, Mayes & de Freitas, 2004, Laurillard 2002, Sawyer 2014, Conceição, & Howles 2020). Social technologies may range from blogs, VLEs, to social media, wikis and podcasts depending on learning context.

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Atomized CALL

All previous four CALL pedagogies deal with how shifts of pedagogies in the use of technology shifts instructional design to design for learning – imitating actions and engagement design of learners in a learning environment and design their learning accordingly. Atomized CALL deals with the selection of CALL materials in terms of digital resources and software. According to Gimeno-Sanz (2016) CALL context is constantly being challenged by the high influx of new technologies. The dominance of technology in CALL contexts over the past two decades has led to a unique conundrum: as new technologies emerge, previously developed learning materials swiftly become obsolete, thereby hindering the development of CALL materials (Gimeno-Sanz, 2016).

Addressing this problem, Gimeno-Sanz (2016) introduced the concept of 'Atomized CALL.' This approach signifies a departure from the conventional structured "all-in-one" contents commonly found in textbooks, CD-ROMs, or online courseware. It suggests adopting unstructured, curated and meaningful CALL materials often called resources (ibid). These didactically significant resources are not presented as standalone entities but are skillfully assembled and integrated into the language curriculum by educators or tutors (ibid). In this framework, teachers take on the crucial role of curators, selecting, organizing, and integrating these resources into their daily teaching practices (ibid). This approach allows for a dynamic, adaptable, and personalized learning experience, catering to the unique needs and learning styles of individual students (ibid). Atomized CALL empowers educators to create a more responsive and flexible learning environment through curating resources that align with specific learning objectives, cater to diverse learner needs, and foster a more engaging and interactive language learning experience. Atomized CALL represents a more radical step towards a learner-centered approach, where technology is harnessed to enhance the educational journey and provide students a customized and enriching language learning experience (Gimeno-Sanz, 2016).

The evolution of CALL designs and the corresponding shifts in learning materials represent significant changes in technological innovation and the context of language learning. Three early CALL pedagogical frameworks show that they were constrained by limited technological resources, minimal user involvement, and restricted accessibility but last two CALL pedagogical frameworks exhibit they use advancements in technologies such as portable and mobile devices (Thomas, Reinders & Warschauer, 2013). Similarly, at the level of pedagogies, early three CALLs were focused on learning process within the learners individually but later two CALL pedagogical frameworks seem to consider technological facilitation in connected network of knowledge as Simon (2005) indicated; they tend to be more interactive and collaborative learning environments.

The contemporary context of English language learning is characterized by rich technological resources and a learner-centered approach, where the experiences of learners are directly influenced by their own actions and engagement (Sun, 2017). Active participation in digital network enables learners to collaborate with more knowing nodes and create their learning experiences in self-regulated and collaborative environments (Youde 2020, Simon 2005). In CALL materials, the important questions are how English language teachers identify appropriate CALL materials, how they adapt it in their EFL practices, what strategies they employ to design authentic learner-centeredness. Furthermore, it is also worth to find how CALL materials contribute to developing knowledge of English language, language skills and 21st-century skills. Addressing these inquiries is vital for enhancing the effectiveness of English language teaching.

This literature review analyzed conceptualization of CALL materials, historical and pedagogical development and their implications on the practices of English language teaching in TESOL context. As ELT and technology continue to intertwine, there is a compelling demand to investigate dynamics of English language learning and teaching in digital space. This study holds immense significance as it explores the complexities of EFL teachers' awareness, perceptions, and practices regarding CALL materials in the context of ELT in Saudi Arabia. By using academic basis in CALL materials as discussed in literature review, this research attempts to offer valuable insights that are not only timely but also indispensable for comprehending the diverse dimensions of teaching and learning in the digital space. Through a targeted examination of how CALL materials are perceived and utilized, this study aims to

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enhance the discourse on English language education in digital environment and pave the way for more effective and innovative teaching methodologies.

3. RESEARCH DESIGN

Research philosophy

The research adopts a positivist epistemological stance, utilizing a quantitative approach with statistical data obtained from a closed-ended questionnaire administered to 77 EFL teachers in Saudi universities. This method aligns with the objective and research questions of this study to investigate the realities objectively without bias and ensure reliability and validity in the findings in EFL teachers' experiences and practices in CALL materials within their context.

Research methodology and methods

The study used survey research methodology to collect statistical data from a substantial number of participants and utilize it to make an objective analysis of the findings (Denscombe, 2010). Data was collected from 77 EFL teachers through a closed-ended questionnaire comprising 17 items, each offering multiple response options. The questionnaire was prepared on Google Forms and was emailed to EFL teachers across various universities in Saudi Arabia. Subsequently, the collected responses were subjected to rigorous statistical analysis to draw meaningful conclusions.

Participants of the study

The study included 77 EFL teachers serving as lecturers, assistant professors, and associate professors within English departments and English Language Centers (ELCs) across various universities in Saudi Arabia. These faculty members represented diverse nationalities, including Saudi Arabia, Yemen, Jordan, Sudan, India, Pakistan, Turkey, and Bangladesh.

Data Collection & Presentation

The research data was gathered during the first academic semester of 2023-2024, spanning from September to October 2023, through an online survey created on Google Forms. The survey comprised 17 questions categorized into three sections: Table-1 represented 'Awareness of EFL teachers about the nature of CALL materials,' further divided into three subcategories: Table-1.1 for Sources of CALL materials, Table-1.2 for Types of CALL materials, and Table-1.3 for Pedagogies of CALL materials. Each sub-table allowed participants to select multiple responses. Category 2 focused on 'Perceptions of EFL teachers regarding CALL materials' and was presented in Table 2. This section included six closed-ended questions using Likert scale formats. Category 3, displayed in Table 3, outlined 'EFL teachers' practices in CALL materials' and contained eight close-ended questions with Likert scale formats. The collected responses were statistically analyzed using IBM SPSS Statistics (version 21). Mean and standard deviation values were utilized to facilitate comparisons among different choices related to CALL materials, perceptions, and practices.

Validity and reliability

In this study, rigorous measures were taken to ensure the validity and reliability of the research. The questionnaire was carefully designed and reviewed by the researcher and colleagues from the University of Hail, Saudi Arabia to ensure content validity by aligning questions with established TESOL theories and CALL materials. Piloting the questionnaire with two participants facilitated refinements by addressing ambiguities. Construct validity of the study was also ensured by using closed-ended questions so quantifiable responses may be measured through statistical tools. Ethical considerations, including confidentiality and informed consent, were strictly followed to maintain credibility of the study. These comprehensive measures collectively provide the validity and reliability of the study's outcomes.

Limitations:

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In spite of careful consideration of validity and reliability, this study may have some limitation coming from sampling bias, where surveyed EFL teachers might not fully represent the entire population (Denscombe, 2010). Response bias could impact results if participants provide socially desirable answers, affecting the study's validity. Similarly, Closed-ended questions, while quantifiable, may limit detailed responses, hindering the depth of insights (ibid). To address these limitations, future research could incorporate mixed-method approaches, integrating open-ended questions and qualitative methods. These adjustments may enhance the accuracy of the findings in this study.

4. DATA AND ITS ANALYSIS:

Category-1 Table: 1.1 Sources of CALL Materials				
Q1: What are the sources of CALL materials in your English language courses?	N	Sum	Mean	Std. Deviation
1. Prepared by me	77	132.0	1.714	.4547
2. Supplied by the University	77	109.00	1.4156	.49605
3. Open online resources	77	113.00	1.4675	.50222
4. Adapted from existing materials	77	78.00	1.0130	.11396
5. Supplied by the vendor companies	77	87.0	1.130	.3384
Valid N (list wise)	77		Average=1.348	

Data Analysis:

The data in table 1.1. reveals different sources of CALL materials used by EFL teachers in Saudi Arabia in their courses of English language. EFL teachers predominantly craft their own materials, as evidenced by the notably high mean (1.714) and low standard deviation (0.4547), reflecting a common practice among surveyed teachers. This highlights a scarcity of readily available, specialized materials tailored explicitly for online CALL instruction. Additionally, teachers heavily rely on open online resources (M=1.4675, SD=0.50222). It exhibits dependence of the teachers on diverse external sources that might not consistently align with specific course objectives and outcomes. University-supplied materials (M=1.4156, SD=0.49605) are also included among the highly used materials which lack explicit tailoring for CALL instruction and subsequently causes the necessity for teachers to create their own materials.

Conversely, materials from vendor companies (M=1.130, SD=0.3384) and adapted materials from existing sources (M=1.0130, SD=0.11396) are less frequently utilized. It hints that there is lack of availability of adopted CALL materials and available materials and materials from vendors are potentially inadequate or limited in their relevance or suitability within the CALL context. Overall, this emphasizes the urgent need for tailored, readily accessible resources explicitly designed for online CALL environments. The lower utilization of vendor-supplied and adapted materials underscores potential areas for improvement or gaps in availability and relevance within the particular educational context of Saudi universities.

Category-1 Table: 1.2 Types of CALL Materials				
Q2: What type of CALL materials have you used in your English language courses?	N	Sum	Mean	Std. Deviation
1. Video materials.	77	121.00	1.5714	.49812
2. Multimedia materials	77	131.00	1.7013	.46069

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3. Plain text materials	77	124.00	1.6104	.49086
4. Audio materials	77	120.00	1.5584	.49983
5. Software materials	77	90.00	1.1688	.37706
6. Podcast materials	77	81.00	1.0519	.22338
Valid N (list wise)	77		Average = 1.4437	

Data analysis:

The data in Table 1.2 reveal a diverse array of CALL materials utilized by EFL teachers in their English language courses. Multimedia materials (M=1.7013, SD=0.46069) emerge as the most utilized and preferred learning resources, indicating a notably higher mean compared to plain text materials (M=1.6104, SD=0.49086). The popularity of multimedia materials signifies their widespread adoption in learning environments, capitalizing on the engaging nature of text and visuals. However, it's crucial to note that high utilization doesn't inherently equate to the most effective learning tool if used solely for transmitting information without encouraging constructive learner engagement (Mayes & de Freitas, 2004; Mayer, 2009). In contrast, while plain text materials hold significance, their slightly lower mean suggests a marginally lower preference and potential engagement challenges due to the absence of visuals. Videos (M=1.5714, SD=0.49812) and audio materials (M=1.5584, SD=0.49983) maintain moderate importance, aligning closely in mean scores. However, their effectiveness may vary based on production quality and alignment with learning outcomes and course objectives. Notably, different types of software used as CALL materials (M=1.1688, SD=0.37706) and podcast materials (M=1.0519, SD=0.22338) exhibit considerably lower means, indicating limited utilization and potential challenges in relevance, accessibility, or alignment with course objectives. The prominence of multimedia and plain text materials, reflected in their higher means, emphasizes their effectiveness in combining text and visuals for engaging learning experiences. This underscores the necessity to refine and enhance video, audio, software, and podcast materials to better cater to the diverse needs of online English language learners within the CALL framework.

Category-1 Table: 1.3 Pedagogy of CALL Materials

Q3: Which pedagogies do you want to associate with your CALL materials?	N	Sum	Mean	Std. Deviation
1. Behavioristic materials	77	86.00	1.1169	.32339
2. CLT materials	77	109.00	1.4156	.49605
3. Constructivist materials	77	99.00	1.2857	.45472
4. Scaffolded materials	77	92.00	1.1948	.39865
5. Collaborative materials	77	123.00	1.5974	.49364
6. Self -regulated materials	77	98.00	1.2727	.44828
7. Self-guided materials	77	97.00	1.2597	.44137
8. Problem based materials	77	88.00	1.1429	.35222
9. Project based materials	77	88.00	1.1429	.35222
Valid N (list wise)	77		Average=1.2698	

Data Analysis

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The data in Table 1.3 provides distinct insights into the pedagogical preferences concerning CALL materials among EFL teachers within online courses on Blackboard. 'Collaborative materials' (M=1.59, SD=0.493) emerged as the dominant choice, indicating a strong inclination toward fostering collaborative learning environments. This was closely followed by 'CLT materials' (M=1.41, SD=0.496), which garnered significant attention by emphasizing the integration of communicative language teaching methodologies in the online learning context. Furthermore, 'constructivist materials' (M=1.28, SD=0.45472), 'self-regulated learning materials' (M=1.27, SD=0.44828), and 'self-guided learning materials' (M=1.25, SD=0.44137) exhibited comparable preferences, underlining a prevalent pedagogical orientation rooted in constructivism and learner autonomy among EFL teachers. These findings suggest a noticeable trend wherein EFL teachers lean toward adopting learner-centered pedagogies, specifically connecting CLT materials with social constructivism and constructivism, as supported by Nunan (1992, cited in Beatty, 2013) who linked collaborative learning with the communicative approach to language learning.

Conversely, 'scaffolded materials' (M=1.19, SD=0.39865), 'problem-based learning materials' (M=1.14, SD=0.35222), and 'project-based learning materials' (M=1.14, SD=0.35222) received relatively lower ratings, indicating a reduced adoption of scaffolded and problem/project-based learning strategies within this context. The comparatively lower ratings for scaffolded, problem-based, and project-based learning materials suggest a lack of awareness among EFL teachers regarding the adoption of more radical learner-centered pedagogies.

Remarkably, 'behavioristic materials' (M=1.11, SD=0.32339) garnered the lowest response, signifying a discernible departure from behaviorism in contemporary EFL pedagogy among surveyed educators. This collective preference signifies a noticeable shift toward more learner-centered, collaborative, and constructivist approaches in the implementation of CALL materials, thereby delineating the evolving pedagogical landscape within the EFL domain.

Category-2 Table 2: Perceptions about CALL Materials				
	N	Sum	Mean	Std. Deviation
Q1: Do you find engaging, interactive, and collaborative CALL materials for conducting your online teaching on Blackboard?	77	289.00	3.7532	.87593
Q2: Do CALL materials in the course help students gain deep conceptual understanding?	77	303.00	3.9351	.87866
Q3: Do your present CALL materials in simple and clear design that help students in regulating their learning independently?	77	297.00	3.8571	.89904
Q4: How significant is it for you to have interactive, engaging, and collaborative CALL materials for your students?	77	337.00	4.3766	.68899
Q5: How much do CALL materials give learners an opportunity to test their knowledge and understanding against clearly defined learning outcomes in the course specification?	77	326.00	4.2338	.68626
Q6: Do CALL materials focus on developing subject-knowledge as well as higher order skills equally (critical thinking, inference, problem solving) in the course?	77	277.00	3.5974	.97683
Valid N (list wise)	77		Average= 3.9589	

The data in Table-2 unveils the perceptions of EFL teachers and their experiences with CALL materials used in online teaching through Blackboard. These insights shed light on various aspects of CALL materials and the teachers' viewpoints.

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Question 4 received the most responses, highlighting teachers' emphasis on interaction, engagement, and collaboration within CALL materials (M=4.3766, SD=0.6889). This underscores their focus on creating dynamic and engaging learning environments. Conversely, Question 1 garnered relatively fewer responses (M=3.7532, SD=0.87593), indicating potential disparities between teachers' aspirations for more engaging CALL materials and the current offerings. This discrepancy reveals an area where traditional instructional practices persist despite desires for change and improvement.

The analysis is supported by responses to Questions 5, 2, 3, and 6, indicating that EFL teachers' perceptions tend to align more with traditional learning paradigms. Question 5 received substantial attention (M=4.233, SD=0.68626), showcasing teachers' dedication to aligning CALL materials with specified learning outcomes, indicating a consensus to adhere to formal educational standards embedded in the curriculum. Similarly, responses to Question 2 (M=3.935, SD=0.87866) reflect EFL teachers' confidence in their CALL materials' ability to facilitate deep learning while promoting subject knowledge acquisition within university learning structures. Additionally, positive responses to Question 3 (M=3.8571, SD=0.89904) underscore teachers' commitment to ensuring that their CALL materials boast a simple and learner-friendly design, facilitating independent learning through clear instructions and guidance. However, the diverse responses to Question 6 (M=3.5974, SD=0.97683) regarding the integration of subject knowledge and higher-order skills reveal varying expectations among EFL teachers. This diversity reflects an ongoing debate within traditional education aiming to bridge the gap between subject-centric knowledge acquisition and the development of higher-order skills like critical thinking and problem-solving within instructional materials.

Overall, the data suggests a strong inclination among EFL teachers to align CALL materials with formal learning parameters, including specified learning outcomes, subject knowledge acquisition, and a learner-friendly design. Yet, differing opinions on the balance between subject knowledge and higher-order skills signal ongoing discussions about the evolution of traditional learning approaches within CALL materials in Saudi universities.

Category-3 Table 3: EFL Teachers' Practices in CALL Materials				
	N	Sum	Mean	Std. Deviation
Q1: Do you scaffold CALL materials through models, multimedia, tasks, discussions, blogs, and assessment activities?	77	304.00	3.9481	.93042
Q2: Do you provide interactive and collaborative opportunities to learners while they process CALL materials?	77	312.00	4.0519	.90170
Q3: Do your learning environment essentialize for learners to engage in learning materials and take activities, tasks and projects?	77	265.00	3.4416	1.01946
Q4: How often do you interlink each unit of CALL materials with tests and assignments leading students to complete the test through processing the materials?	77	297.00	3.8571	.88428
Q5: How often do you flip CALL materials on Blackboard?	77	293.00	3.8052	.81174
Q6. Do you use cognitive trails in CALL materials facilitating learners to engage in learning environment	77	293.00	3.8052	.97386
Q7: Do your CALL materials involve students in challenging tasks in term of language learning content?	77	295.00	3.8312	.87963
Q8: Are your learning materials interlinked with all components of blackboard environment like assessment, discussions, blogs, wikis etc?	77	306.00	3.9740	.90283
Valid N (list wise)	77		Average= 3.8392	

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The data from Table 3 reveals information about the practices and experiences of Saudi EFL teachers in employing CALL materials in their online teaching environment. The high response rate in Question 2 (M=4.05, SD=0.90170), followed by Question 8 (M=3.9740, SD=0.90283), indicates a significant emphasis placed by EFL Saudi teachers on providing interactive and collaborative opportunities within CALL materials. This aligns with their earlier responses across various tables (Table 1.1, 1.2, 1.3, and 2), underscoring their consistent commitment to fostering active student engagement and collaboration. Question 8's results further reinforce this commitment, reflecting an integrated CALL design that interconnects assessment, discussions, blogs, and wikis. Both these higher-rated questions, Question 2 and Question 8, underscore the teachers' strong dedication to fostering interactivity, collaboration, and integration within the CALL materials, highlighting their commitment to incorporating these elements across different components on the Blackboard platform.

The responses to Question 1 (M=3.9481, SD=0.93042) indicate substantial agreement among EFL teachers regarding the use of scaffolding techniques. These methods include employing models, multimedia, tasks, discussions, blogs, and assessments within their online learning environments. The intent behind these scaffolding techniques is to provide robust support for students in comprehending complex concepts and tasks. This highlights the teachers' dedication to fostering a learner-centered approach and enhancing engagement within the learning process.

Other strategies, such as those outlined in Question 4 (M=3.8571, SD=0.88428), focusing on assessment-backed material processing, and Question 7 (M=3.8312, SD=0.87963), which involve challenging tasks beyond students' current proficiency levels in language learning content, received notably positive responses. These responses suggest that EFL teachers appreciate utilizing strategies like incorporating challenging tasks, tests, and assignments within CALL materials to actively engage learners, offer feedback, and evaluate their progress. Such approaches aim to cultivate self-evaluation skills among learners. These practices align with contemporary assessment methods that prioritize fostering qualitative engagement and deeper comprehension among students.

Similarly, other strategies, like those in Question 5, focusing on flipping CALL materials, and Question 6, involving incorporating cognitive trails (M=3.8052, SD=0.81174 for both), indicate endeavors to enhance learner engagement, yet with room for refining the guidance through cognitive trails effectively. While the standard deviation for Question 5 is lower, signifying confidence in delivering materials early, Question 6 demonstrates a slightly higher standard deviation, hinting at the requirement for enhanced guidance through cognitive trails.

In contrast, the lower response for Question 3 suggests a potential gap in establishing mandatory learner engagement in the online environment. It reflects the teachers' perception that learners' commitment to learning remains crucial in digital environments rather than enforced participation. It means that Saudi learners' own commitment to learning remains paramount in the digital learning environment. EFL teachers feel that they do not find the online environment very suitable to emphasize the performance of students in their online learning experiences.

Overall, the data in table 3 shows that EFL teachers have a commitment to integrating interactive, collaborative, and engaging elements within CALL materials. Their practices align with modern pedagogical approaches, emphasizing active student involvement, integration with various learning components, scaffolding techniques, and effective assessment strategies. However, further training and support might be necessary, particularly in designing authentic learning environments and guiding learners effectively through cognitive trails. Overall, the responses indicate a shift from traditional, behavioristic CALL designs to more integrative and social CALL in CALL materials.

5. FINDINGS OF THE RESEARCH:

The study investigated the awareness, perceptions, and practices of EFL teachers in Saudi Arabia regarding CALL materials in online education, illuminating the digital landscape of EFL teaching. In response to research question 1: "How familiar are teachers with the various sources, types, and pedagogical background associated with CALL materials used in online education?" the findings of this study suggest that EFL Saudi teachers primarily rely on self-created materials, revealing a common practice. There's also a heavy dependence on open online and university-supplied resources, highlighting the scarcity of specialized materials for online CALL instruction. The

limited use of vendor-supplied and adapted materials suggests gaps in relevance. While multimedia materials are highly favored, emphasizing the effectiveness of text and visuals, plain text materials, videos, and audio maintain moderate importance. However, software and podcast materials exhibit considerably lower utilization. Pedagogically, teachers strongly prefer collaborative and communicative language teaching materials, indicating a shift towards learner-centered, collaborative, and constructivist approaches. Despite this, there's room for improvement in implementing problem-based and project-based learning approaches, suggesting areas for enhancement in digital EFL pedagogy. These insights underscore a pressing need for tailored, accessible resources specifically designed for online CALL environments to enhance material diversity and cater to diverse learning needs.

In response to research question 2: What are the perceptions of EFL teachers regarding the CALL materials they employ in online teaching? this study reveals that EFL Saudi teachers prioritize dynamic, engaging learning environments via interaction and collaboration in CALL materials. However, a notable disparity exists between desired and available engaging materials, suggesting an area for improvement. Emphasis on aligning these materials with specified learning outcomes and subject knowledge displays commitment to formal learning parameters. Yet, diverse views on integrating subject knowledge and higher-order skills signify ongoing debates in CALL materials' educational philosophies at Saudi universities. Overall, this underscores teachers' efforts to blend modern pedagogy with evolving approaches in CALL materials for online education.

In response to research question 3, "How do EFL teachers implement CALL materials in their online teaching practices?" the findings of this study indicate a consistent emphasis among EFL Saudi teachers on fostering interactive and collaborative opportunities within CALL materials. These educators demonstrate a commitment to engaging learners and integrating learning content across various components of the Blackboard platform. Moreover, there's a substantial consensus among teachers in employing scaffolding techniques such as models, multimedia, discussions, and assessments to support learners in comprehending complex concepts. Practices involving assessment-backed material processing and challenging tasks showcase the efforts of EFL Saudi teachers to actively engage students and cultivate self-evaluation and self-reflection skills. However, there's room for improvement in areas related to establishing active learner engagement and refining guidance through cognitive trails. The study identifies a potential gap in creating an environment conducive to active participation, underscoring the importance of Saudi learners' intrinsic commitment to online learning. It also highlights the need for improved guidance through cognitive trails to effectively enhance learner engagement. Overall, the findings suggest that Saudi EFL teachers are committed to incorporating interactive and engaging elements within CALL materials to achieve active learner participation. Nonetheless, they require further support and training to design more engaging and participatory learning environments. The perception among Saudi EFL teachers indicates a shift from traditional CALL designs to more integrated and socially engaging designs for CALL materials.

6. CONCLUSION

This research aimed to investigate awareness, perceptions, and practices of EFL teachers concerning CALL materials in the online learning environment of Saudi Arabia. The study focused on three pivotal research questions around the familiarity of Saudi EFL teachers with CALL materials, their perceptions and experiences, and the strategies for their implementation. It was evident that while Saudi EFL educators possess a comprehensive awareness of CALL materials, relying primarily on self-created content indicates a scarcity of specialized digital resources tailored for EFL courses. Despite the prevalent use of multimedia materials, their effectiveness in ensuring constructivist and creative engagement among learners in CALL materials remains uncertain. Pedagogically, a noticeable shift towards collaborative and communicative language teaching approaches signifies a progression towards learner-centered and constructivist methodologies. However, areas for growth persist, particularly in implementing problem-based and project-based learning strategies, highlighting the potential for enhancement in the digital EFL pedagogical landscape.

Regarding the perceptions of EFL teachers, the study revealed a significant concern in designing dynamic and engaging learning environments through interaction and collaboration within CALL materials. However, the

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disparity between desired and available engaging materials signifies an area required for further enhancement. While aligning materials with specified instructional objectives and learning outcomes, focusing on higher-order skills, knowledge building, and creativity through interconnected knowledge networks, their commitment seems more oriented towards the formal learning parameters of their institution resulting then towards instructional design which may have negative impact on developing authentic self-regulated and collaborative engagement in CALL design.

Regarding the practices of Saudi EFL teachers in utilizing CALL materials, the research indicates significant emphasis on fostering interactive and collaborative opportunities in the online environment. There is a notable consensus in using scaffolding techniques and an integrated design of learning in courses. However, there appears to be a deficiency in promoting reflective and self-guided learning environments in their online EFL courses which may not result into optimum active learning environment of Saudi EFL learners.

In conclusion, this study suggests that Saudi Arabia's EFL education is undergoing a transformative phase, gradually transitioning from traditional instructional designs to more student-centered learning approaches. To achieve this transformation, systemic improvements are essential, including tailored digital competence training programs, institutional support, and collaboration with online educational experts. Bridging the gap between intention and implementation is crucial to ensure students receive authentic and engaging learning experiences, aligned with the demands of Saudi Vision 2030, emphasizing employability skills. A holistic approach, encompassing training, support, and collaborative efforts, is proposed to ensure Saudi learners receive exemplary digital learning experiences tailored to their needs, nurturing real-life learning skills for their career development in the job market.

7. RECOMMENDATIONS

The study offers several key recommendations for developing effective practices in CALL Materials in Saudi universities:

1. **Tailored CALL Resources:** There's an urgent need to create tailored, accessible CALL materials designed explicitly for online environments. Institutions should invest in developing specialized resources that align with diverse learning needs within the CALL framework.

2. **Digital Collaborations:** Explore partnerships with the providers of Massive Open Online Courses (MOOCs) or specialized digital teams to address challenges in creating impactful CALL materials. Collaboration with external partners can leverage expertise, enriching the development of compelling and interactive materials.

3. **Collaboration with e-Learning Experts**: Collaborate closely with e-Learning organizations to craft tailored CALL materials aligned with unique institutional requirements. This collaboration can maximize the expertise of educators and e-Learning specialists to enhance the efficacy of these materials.

4. **Professional Content Development**: Institutions can ease the workload on EFL teachers by hiring professional content developers for online courses. This approach ensures quality and relevance in digital learning materials, allowing teachers to focus on instructional delivery. Simultaneously, educators should receive training in crafting digital learning materials tailored specifically for online platforms.

5. **Educator Expertise Enhancement:** Prioritize dedicated training programs to equip EFL teachers with comprehensive skills in utilization of software and digital content from the perspective of ESL/EFL pedagogy in virtual learning environments. Establish on-campus digital studios as support hubs to enhance educators' skills in utilizing various digital tools effectively for CALL material creation and delivery.

8. IMPLICATIONS FOR THE FUTURE RESEARCH

Future research from this study is twofold. Firstly, examining the challenges obstructing the integration of learner-centered design within Saudi university education provides an area for further studies. Investigating the role of digital educational spaces in overcoming these obstacles becomes pivotal. Additionally, there is a pressing need for extensive research on content development in higher education within Saudi Arabia. Understanding its impact on

fostering self-regulated, collaborative learning, and achieving learning outcomes is crucial to be studied. Secondly, complementing this quantitative study, qualitative research is imperative. A broader investigation into the engagement of EFL teachers and students in digital learning environments can unveil insights into fostering authentic and effective EFL learning experiences.

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