

A Meta-Analysis of Research on the Integration of Twenty-First-Century Skills into EFL Syllabus in the Middle East and North Africa

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Abstract

21st century is characterized by the proliferation of digital technologies and globalization. These characteristics have led the international community to recognize the importance of global understanding and intercultural communication. In order to effectively function in such a world, people should develop 21st-century skills as they are central to participating in a globalized, knowledge-based economy. In this context, this study aims to highlight the methods used in integrating 21st-century kills into the existing EFL syllabus, and to understand the rationale for integrating 21st-skills into the EFL syllabus in the Middle East and North Africa (MENA), among others. To achieve these objectives a meta-analysis of 17 data-driven studies on 21st-century skills in the MENA was conducted. The results showed positive attitudes towards 21st -century skills and positive perceptions of the integration of 21st -century skills into EFL syllabus, as well as the use of 21st-skills as a teaching strategy. The results also showed that critical thinking was the main focus of research conducted in different contexts in MENA countries. It was examined both separately and in conjunction with other 21st-century skills in over 56% of the studies in six countries. apart from two examples from the Moroccan and Omani contexts, meta-analysis revealed no institutional recognition of 21st-century skills in the MENA region. It was concluded that most research conducted in the MENA was due to the interest of individual researchers in integrating 21st-century skills into the EFL syllabus.

Keywords: 21st-century skills, 4Cs, creativity, critical thinking, information literacy, digital literacy, life skills, career skills, globalisation, EFL syllabus.

المستخلص:

يتميز القرن الواحد والعشرين بانتشار التقنيات الرقمية والعلوقة. وقد أدت هذه الخصائص بالمجتمع الدولي إلى الاعتراف بأهمية التفاهم العالمي والتواصل بين الثقافات. من أجل العمل بفعالية في مثل هذا العالم، يجب على الناس تطوير مهارات القرن الواحد والعشرين لأنها تلعب دوراً مركزاً في المشاركة في الاقتصاد العالمي القائم على المعرفة. في هذا السياق، تهدف هذه الدراسة إلى تسليط الضوء على الأساليب المستخدمة في دمج عمليات مهارات القرن الواحد والعشرين في منهج اللغة الإنجليزية باعتبارها لغة أجنبية، وفهم الأساس المنطقي لدمج المهارات القرن الواحد والعشرين في منهج اللغة الإنجليزية كلغة أجنبية في الشرق الأوسط وشمال إفريقيا من بين أمور أخرى. ولتحقيق هذه الأهداف، تم إجراء تحليل تجمعي لسبعة عشر دراسة قامت على بيانات أولية تم إجراؤها في منطقة الشرق الأوسط وشمال إفريقيا. أظهرت النتائج وجود ميول إيجابية وسط اساتذة اللغة الإنجليزية تجاه مهارات القرن الواحد والعشرين وتصورات إيجابية حول دمج مهارات القرن الواحد والعشرين في منهج اللغة الإنجليزية كلغة أجنبية، فضلاً عن استخدام مهارات القرن الواحد والعشرين باعتبارها استراتيجية تدرس. أظهرت النتائج أيضاً أن التفكير النقدي كان المحور الرئيسي للبحوث التي أجريت في سياقات مختلفة في بلدان الشرق الأوسط وشمال إفريقيا. تم فحص مهارة التفكير النقدي بشكل منفصل وبالاقتران مع مهارات القرن الواحد والعشرين الأخرى في أكثر من 56٪ من الدراسات في ستة بلدان. وبصرف النظر عن السياقين المغربي والعماني، كشف التحليل التجمعي عن عدم وجود اعتراف مؤسسي بمهارات القرن الواحد والعشرين في منطقة الشرق الأوسط وشمال إفريقيا. وخلص إلى أن معظم الأبحاث التي أجريت في منطقة الشرق الأوسط وشمال إفريقيا كانت بسبب مبادرات الباحثين الأفراد بدمج مهارات القرن الواحد والعشرين في منهج اللغة الإنجليزية كلغة أجنبية.

الكلمات المفتاحية:

مهارات القرن الواحد والعشرين، الاتصال والتفكير النقدي والتعاون، الإبداع، محو الأمية المعلوماتية، محو الأمية الرقمية، المهارات الحياتية، المهارات المهنية، العولمة، منهج اللغة الإنجليزية بصفتها لغة أجنبية.

1. Introduction

The global economy of the 21st century is to be driven by technology, supported by information, and controlled by knowledge (U.S. Secretary of Labour's Commission on Skills Acquisition, 1991). This has led to recognition of the importance of global understanding and cross-cultural communication in promoting inter/national security, economic competitiveness, and social well-being (Haley et al., 2013). Similarly, it is argued that the proliferation of digital technology has facilitated communication and business across borders. This situation, it is argued, has led to a shift in the skills required to participate in modern work environments. Recognising such a shift, educational institutions have "worked toward a common understanding of the so-called 21st -century skills that students should develop as they prepare for their futures" (Black, 2009, p. 688), as they are central to participation in a globalised, knowledge-based economy. As a result, education systems are recommended to do more than just prepare students to "take academic tests and improve their test scores as they need to become engaged thinkers, resilient and resourceful learners, creative problem solvers, and active members of their communities" (Lamb et al., 2017, p. 3). Skills needed to achieve this goal include creativity and innovation, critical thinking, problem solving, learning to learn, communication, collaboration, information literacy, ICT literacy, life and career skills, and personal and social responsibility (North Central Regional Educational Laboratory and Metiri Group, 2003; Partnership for 21st Century Skills, 2007; Harvard University Advanced Leadership Initiative, 2014, Chu et al, 2017). According to the Global Partnership for Education (2020), these skills have become the core of international education discourse. Moreover, more and more countries are now striving to ensure that their education systems provide students with these skills to improve the way they think, learn, work, and live. In this context, Delors et al. (1996) propose a comprehensive four-dimensional framework for learning in the 21st century that includes learning to know (cognitive

dimension), learning to do (instrumental dimension), learning to be (individual dimension), and learning to live together (social dimension). The following table (1) summarises the skills expected of these four learning types.

Table 1: Learning dimensions of 21st century Skills.

Learning dimensions	Skills	Areas
Cognitive dimension	creativity, critical thinking, problem solving	curricular discipline
		vocational disciplines
		career education
Instrumental dimension	cooperation, negotiation, decision-making	entrepreneurship education
		computer literacy
		health education
		career education
		environmental education
Individual dimension	self-management, resilience, communication.	emergency education
		computer literacy
		peace education
		Civic education
Social dimension	respect for diversity, empathy, participation	culture, arts, sports, etc.
		peace education

As can be seen in the table 1, these 12 skills serve different functions at home, at school, at work and in the society at large. While some of them are part of existing education systems (e.g., language skills, critical thinking, and career education), others are emerging (e.g., civic education, peace education and computer literacy) (Chu et al, 2017). Taken together, these skills can add up to the concept of “education pursued throughout life, with all its advantages in terms of flexibility, diversity and availability at different times and in different places ...” (Delors, 1996, p. 19).

Despite the urgency of 21st-century skills, it is widely recognised that education systems have not evolved in terms of infrastructure and pedagogy to prepare students for the current and future world described above as knowledge-based, geographically mobile, and collaborative (Chu et al., 2017). UNICEF MENA Office (2017, p. 1) discusses the situation in the region, noting that all learners “face unprecedented challenges in learning, employment, and social cohesion, exacerbated by political instability and conflict.” As a result, education systems are not delivering the outcomes needed for individual and social development. It is also reported that previous research confirms that instructional practises in formal education in MENA countries are based on teacher-centred instruction and do not provide opportunities to develop skills such as creativity, problem solving, and collaboration. Examination of the EFL, authored by major MENA research platforms such as TESOL ARABIA, KSAALT (King of Saudi Arabia Association of language Teachers), ATEL (Association of Teachers' of English in Lebanon), and TESOL Sudan, shows that 21st-century skills were not prioritised as a conference theme. In addition, Khartoum University (Sudan) organised a conference on its revitalization and development in 2022. The conference papers stemmed from the university's vision, mission, and goals. They addressed a variety of topics, including undergraduate and postgraduate degree programmes, scientific research, community

service, human resources, and professional development, to name a few. Although 21st-century skills are central to all of these activities, they were conspicuous by their absence in the papers presented at the conference.

However, these capabilities have been studied in depth by individual academics in MENA countries. Specifically, research focused on various combinations of skills, including critical thinking (Chouari & Nachit, 2016; Mrah, 2017; Salehi, 2019; Alamri, 2020; Alghamdi, 2020; Alzahrani et al, 2022; Chana, 2022); core competencies (Alzuoud & Gaudel, 2020), life skills (Bouzid, 2016); creativity, critical thinking, problem solving, communication skills, information, media, and technology literacy (Khatri, 2019); communication, collaboration, critical thinking, and creativity (Aben, 2022; Alghamdi, 2022); critical thinking, collaboration, and cooperation (Chehimi & Alameddine, 2022), creativity, innovation, and ICT skills (Alqudah & Altweissi, 2020), collaboration, critical thinking, communication, problem solving, creativity, and innovation (Amr, 2020).

These studies are expected to provide evidence for MENA academies' attempts to integrate 21st -century skills into the EFL curriculum. In search of such evidence, this study applies a meta-analysis to a set of published articles to achieve three goals: to highlight the most important findings of research on 21st century skills; to examine the most prioritised 21st century skills; and to explore the rationale for integrating 21st century skills. To achieve these goals, the study seeks to answer three research questions: 1. What are the most important research findings related to the integration of 21st century skills into the curriculum of EFL in MENA countries? 2. What information do the research findings provide about the most prioritised 21st century skills? 3. What information does the meta-analysis provide about the reasons for integrating 21st century skills into the curriculum from EFL?

2. Methodology

As of July 2021, an extensive search for literature on integrating 21st-century skills into the EFL syllabus in MENA countries was conducted. Specifically, the search was conducted through Google, Google Scholar, Researchgate.net and academia.edu, Arab World English Journal, ERIC, and Social Science Research Network (SSRN). The initial search terms including “21st century skills in EFL syllabus in the MENA”, “21st century skills in EFL classroom in the MENA”, “integration of the 4Cs in EFL Syllabus in MENA”, and “integration of 21st century skills in EFL syllabus/classroom in the MENA” were not very productive. As a result, MENA was replaced with the names of each country to create the bulk of the studies used for this meta-analysis. Extensive research was conducted in most countries. However, because the study aims to apply meta-analysis to data-driven research, many conceptual research articles were excluded, leaving 17 (quasi-experimental) studies as the basis for the meta-analysis. It was not possible to select only studies published in high-impact journals (e.g., ISI- or Scopus-indexed journals), otherwise no studies could be included in this analysis. Except for a few studies published in Arab World English, which is listed in the Emerging Sources Citation Index (ESCI), most studies appeared in journals not published by well-known academic institutions.

Although most studies used a quantitative research design, they analysed their data in terms of percentages. This statistical procedure leaves no room for conducting a quantitative meta-analysis using a treatment mean, control mean, and standard deviation (i.e., subtracting the control mean from the treatment mean and dividing the result by the standard deviation) to measure the extent of treatment, as claimed in the studies used for meta-analysis. Thus, the most relevant alternative is qualitative meta-analysis. Fortunately, there are reasonable grounds for conducting a qualitative meta-analysis. That is, the studies selected for this purpose provide a solid basis for

highlighting methods, common findings, developing new insights, and suggesting future areas of research (APA Publication manual, 2020). These are precisely the factors that were considered in formulating the questions for this study.

3. Results

Table 2: 21st skills research in the MENA

Study	Country	Instrument(s)	Participant(s)	Major findings
Aben (2022)	Saudi Arabia	Questionnaire	College instructors	Teachers have positive perceptions of the 4Cs.
Alghamdi (2022)	Saudi Arabia	Questionnaire	Saudi university students	No statistically significant difference between male and female participants' competencies of the 4Cs skills.
Chehimi & Alameddine (2022)	Lebanon	Questionnaire & interview	Instructors in four Lebanese Universities	The participants have positive attitudes towards 21st century skills particularly critical thinking.
Baghoussi (2021)	Algeria	Classroom observation report and interview	Secondary school teachers	Classroom practice is mainly based on direct instruction rather than on reflective and problem-solving learning; therefore, they are not conducive to developing learners' critical thinking.

Sihem (2021)	Algeria	Observation & interview	University teachers and students	Participants have the potential to address global issues, to develop communication skills, and to nurture global values and attitudes.
Alamri (2020)	Saudi Arabia	Questionnaire & interview	School EFL teachers	Majority of participants used concept mapping in teaching critical writing skills.
Alamri (2020)	Saudi Arabia	Questionnaire	Saudi college students	Participants have positive attitudes towards integration of 21 st century skills in EFL syllabus.
Alzahrani et al (2022)	Saudi Arabia	Interview	EFL College teachers	Participants perceived learning to learn and critical thinking as the most important competencies for students to learn.
Al-Jabri (2020)	Oman	Content analysis of a textbook	N/A	Activities in EFL textbooks do not provide enough support for creativity.
Alzuoud & Gaudel (2020)	Saudi Arabia	Questionnaire interview and classroom observation	University instructors	Language skills and core skills are closely intertwined
Salehi (2019)	Libya	Questionnaire	University instructors	The majority of the participants implemented critical thinking in different aspects of their teaching.
AlKhatri (2019)	Oman	Questionnaire interview and	School teachers	Participants perceive positively of the

		classroom observation		integration of the skills into the EFL curriculum.
Tuzlukova et al (2018)	Oman	Questionnaire	University instructors	Participants perceive the importance of employing critical thinking skills in their teaching.
Mrah (2017)	Morocco	Content analysis	N/A	Textbook does not effectively enable learners to be autonomous lifelong critical thinkers.
Chouari & Nachit, (2016)	Morocco	Interview & observation	University professor	Professors were not trained to teach critical thinking.
Bouzid (2016)	Morocco	Content analysis of a textbook	N/A	Textbooks tend to present these skills in a traditional way that does not cater for the 21st century context.
Abdalla (2022)	Sudan	Questionnaire & interview	University students	Participants have positive attitudes towards integration of 21 st century skills

As shown in the previous section, 60% of the studies summarised in table (1) above used quantitative measures to explore the integration of 21st century skills into EFL classroom in the MENA. It was also indicated that the use of percentage to analyse data did not provide grounds for quantitative meta-analysis. As a result, meta-analysis has been conducted qualitatively to provide information about methods, common findings, new insights and thus to propose future research areas (cf. APA Publication manual, 2020). There are at least three general statements that can be made about these findings. First, Saudi Arabia is the MENA country with the highest frequency of studies on the integration of 21st skills into EFL classroom. This fact is attributable in

part to the high online visibility of the Saudi academia as evidenced by the distinguished ranking of the Saudi universities. Needless to say, the Saudi academia is an attractive work environment that hires active researchers from different parts of that world, whose rich contributions adds significantly to the online visibility of their academic institutions. It was natural therefore that online search results in such a frequency. A piece of evidence in support of this reasoning comes from the fact that most general search terms (i.e., 21st century skills in the MENA, 21st century skills in MENA EFL classroom) produced studies that were most likely conducted in Saudi Arabia or another Arabia Gulf state. Second, most studies focused on their participants' perceptions/attitudes towards the integration of 21st century skills into EFL syllabus. These findings might reveal that it was left to individual instructors and academic departments to decide to integrate 21st century skills into the EFL syllabus in the MENA. A possible reason for this conclusion is that major 21st century skills are already part of the English syllabus. These include communication, critical thinking, collaboration and creativity, which are technically referred to in the literature as the 4Cs; further elaboration on this issue will be given in section 4 below. Even other skill categories such as professional literacy, ICT literacy, information literacy, social responsibility, etc.) are already included in the quality assurance standards in many MENA higher education institutions. Now given the fact the latter skill categories can be developed through sustained professional development programmes, higher education institutions might not consider them as a matter of urgency. A further reading into the results will be given in the next section under three subheadings corresponding to the research questions; i.e., major meta-analysis finings, most prioritised 21st century skills and rationale for integrating the twenty-first-century skills into EFL syllabus.

4. Discussion

4.1 Major meta-analysis findings

The rightmost column shows that the findings fall roughly into two broad categories: attitudes/perceptions and pedagogical practices. All the studies included in the first category reveal positive attitudes/perceptions of 21st-century skills. However, they did so from a number perspectives. These include positive perception of the integration of 21st century skills into EFL syllabus (AlKhatri, 2019; Alamri, 2020); positive attitudes/perceptions of 21st century skills in general (Abdalla, *in press*); positive attitudes/perceptions of specific 21st century skills (Aben, 2022; Chehimi & Alameddine, 2022; Alzahrani et al, 2022) and employment of 21st skills as a teaching strategy (Tuzlukova et al, 2018). On the other hand, the second category of the results (i.e., pedagogical practices) relate to individual and official initiatives to integrate 21st-century skills into the EFL syllabus. That is, while many studies reported teachers' attempts to teach 21st skills (Baghoussi, 2021; Sihem, 2021; Alamri, 2020; Salehi, 2019), others focused on the inclusion of similar skills into EFL textbooks (Al-Jabri, 2020; Alzuoud & Gaudel, 2020; Mrah (2017); Bouzid, 2016). Most results subsumed under this category are conflicting to a large extent as evidenced by two studies conducted in the same context (Algeria). That is, Sihem (2021) revealed that participants had the potential to address global issues, to develop communication skills, and to nurture global values and attitudes. By contrast, Baghoussi (2021) reported Classroom practice was mainly based on direct instruction rather than on reflective and problem-solving learning; therefore, they were not conducive to developing learners' critical thinking. Since there were no official policies to oblige teachers and academic institutions to integrate 21st-century skills into the EFL syllabus, it would be natural to encounter similar situations elsewhere in the MENA region. However, there is evidence to support the position that teachers have the potential to address global issues,

to develop communication skills, and to nurture global values and attitudes. That is, because many features of communicative language teaching are suitable for the development of global skills, English language teachers are particularly suitable to incorporate the 4Cs into their lessons to varying degrees (Gales et al, 2020), where learners can be encouraged to share knowledge and skills so that they can collaboratively learn from each other. Also, classroom activities can use materials that bring creativity into the lessons by training the students to share personal experiences and new ideas. What is more, such classes can promote critical thinking through report writing tasks that address controversial issues such as climate change and immigration. Another piece of evidence to substantiate the centrality of language learning to the 4Cs comes National Security Language Initiative taken by President George W. Bush in 2006; which aimed at increasing the number of Americans speaking world languages, "particularly what the initiative referred to as critical need languages, including both Arabic and Chinese" (Haley et al, 2013, p. 865).

4.2 Most prioritised 21st-century skills

Table 1 shows that critical thinking is the major focus of research conducted in the MENA. It was investigated both separately and in connection with other 21st century skills in over 56% of the studies in six countries. The question that should be addressed in this connection is why critical thinking was rendered significant in most 21st century skills research in the MENA. In an attempt to answer this question, it could be maintained that this research option seems to have do with the significance attached to critical thinking in EFL syllabus long before the introduction of the 21st century skills. Indeed, English majors are usually trained to write critical essays in different components of the syllabus, i.e., literature, writing and linguistics. More specifically, critical thinking could help language learners to perform a variety of tasks including giving reasons for or against a particular point of view,

evaluating alternative proposals, participating in academic discussions, speculating about causes, consequences and hypothetical situations, evaluating solutions to a problem, and synthesizing information and arguments from a number of sources (Kazaoglu, 2022). Al Zahrani & Elyas (2012) add a religious dimension to the need to integrate critical thinking into EFL syllabus. Arguing against Atkinson's (1997) view that critical thinking is limited to the Western World, they maintain that critical thinking is a religious requirement. That is, Muslims should think critically about the outside world as a way to recognize the existence of Allah, the Almighty. Also, based on a number of correlational studies, they concluded that the use of critical thinking in pedagogy could facilitate L2 learning.

4.3 Rationale for integrating 21st-century skills into EFL syllabus

According to the UNICEF MENA Regional Office, there is a general consensus that education systems fail to provide the outcomes required to advance individual and social development, and that the increasing number of education opportunities in the region has yet to translate into economic growth. More specifically, traditional teaching, learning techniques and examination practices characteristic of the MENA are not aligned with contemporary realities and labour market requirements. This situation, the argument goes, calls for a holistic and transformative vision of education that maximizes and equips the students with life skills to face the transitions from childhood to adulthood, from education to work, and from unreflective development to responsible and active citizenship. Apart from two examples drawn from the Moroccan and Omani contexts, meta-analysis did not reveal similar arguments supporting the integration of 21st century skills into EFL syllabus in the MENA region. This, in turn, might reflect lack of institutional recognition of these skills. Thus, it can be argued that most research conducted in the MENA emanates from individual researchers' concern with need for integrating 21st century skills into the EFL

syllabus. As for the Moroccan and Omani examples, both attempts were part of reforms in the educational systems that culminated in the inclusion of 21st-century competencies and skills in the EFL syllabus (Chouari & Nachit, 2016; Alkhatri, 2019). However, some stakeholders might wish to argue that the integration of 21st-century skills in the English textbooks in these two contexts might provide evidence for the institutional recognition of the significance of these skills in facilitating L2 learning. Although textbooks are approved by educational authorities at different levels, it is still legitimate to reject this argument on two grounds. First, the relevant literature does not provide evidence for institutional reinforcement for the application of these skills. As such, it is doubtful if educational authorities are aware of the inclusion of 21st-century skills in the textbook. Second, the relevant findings in the Omani context revealed that activities in EFL textbooks do not provide enough support for creativity (Al-Jabri, 2020). Where the Moroccan context is concerned, the textbook neither effectively enable learners to be autonomous lifelong critical thinkers (Mrah, 2017) nor does it tend to present these skills in a way that cater for the 21st- century context (Bouzid, 2016).

5. Conclusion

This study attempted a meta-analysis of EFL research conducted on 21st-century skills in the MENA. An extensive search on major research platforms such as google Scholar, academic.edu and researchgate resulted in 17 data-driven studies that were needed for meta-analysis. Close examination of these studies revealed positive attitudes towards 21st-century skills and positive perceptions of the integration of 21st-century skills into EFL syllabus on the part of the participants as well as the employment of 21st skills as a teaching strategy. Also, findings showed that critical thinking was the major focus of research conducted in different contexts in the MENA. However, apart from two examples drawn from the Moroccan and Omani contexts, meta-analysis

did not reveal institutional recognition of 21st skills in the MENA region. Thus, it was concluded that most research conducted in the MENA emanates from individual researchers' concern with need for integrating 21st century skills into the EFL syllabus. In the light of the findings a couple of recommendations were made. First, given the relevance of many 21st-century skills to the English syllabus, the study recommended that institutions should consider reinforcing these explicitly as course components with clear content, objectives and learning outcomes. Second, most of the studies focused on the participants' attitudes/perceptions of 21st skills, thus, ignoring vital skills such as intercultural communication which people need to function in a world that is knowledge-based, geographically mobile, and collaborative (Chu et al, 2017). Therefore, it was recommended that theoretical and practical components of such courses as sociolinguistics, language and society and language and culture be appropriately balanced so that students could receive practical training in intercultural communication skills.

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