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| RESEARCH ARTICLE

Exploring 21ST-Century Skills among Undergraduate Students in Moroccan Tertiary Education: Two English Studies Departments as a Case Study

Anouar Mohamed El Kasri[1] ✉ Imad Messouab[2], Brahim El Yousfi[3], Abdelaziz Ouchaib[4] and Imad Hamdanat[5]
[145]Faculty of Letters and Humanities, Moulay Ismail University, Meknes, Morocco
[2]Hassan II Institution of Agronomy and Veterinary Medicine, Rabat, Morocco
[3]National Institute of Agricultural Research (INRA), Morocco
Corresponding Author: Anouar Mohamed El Kasri, **E-mail**: Anouar.elkasri@yahoo.com

| ABSTRACT
The demands of the 21st century have prompted educational stakeholders to equip students with the essential skills needed to thrive in a rapidly globalizing and interconnected world. Consequently, Moroccan higher education faces continuous pressure to prepare university students with the competencies necessary to succeed in today's knowledge-based, global society. This study explored the 21st-century skills of undergraduate students in Moroccan tertiary education, drawing on a sample of 129 participants from two schools of Letters and Humanities at Moroccan public universities: Moulay Ismail University in Meknes and Hassan II University of Ain Chock in Casablanca. Data were collected using the 21st-Century Skills Inventory (21 CSI), which was adapted for the study. The findings revealed that students struggled with applying essential skills such as ICT skills, leadership, critical and creative thinking, communication, and English language proficiency. While participants expressed limited confidence in their ability to develop ICT skills, the results highlight the need for urgent interventions. These findings suggest significant implications for Moroccan university students and call on educational stakeholders to prioritize enhancing 21st-century skills in higher education.

| KEYWORDS

21st-century skills, autonomy, critical thinking, ICT skills, leadership

| ARTICLE INFORMATION

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1. Introduction

The 21st century has ushered in the Digital Age, characterized by rapid technological advancements and an unprecedented expansion of information (El Bakkali, 2020). Digital tools have become ubiquitous, transforming how individuals' access, manage, and disseminate information across professional, educational, and social contexts. This continuous evolution demands adaptability, as emerging technologies quickly replace outdated ones (El Jemli et al., 2024). Consequently, researchers and policymakers have sought to identify the core competencies necessary for individuals to navigate this shifting landscape effectively (Agliz, 2024). Beers (2011) categorizes these as creativity and innovation, critical thinking and problem-solving, communication, collaboration, technology literacy, and intercultural competence. As studies highlight, these competencies are central to educational frameworks, especially within English Language Teaching (ELT) (Ekizer & Yıldırım, 2023; Beckett, 2023).

In knowledge-based economies, economic competitiveness increasingly depends on cultivating and applying these critical skills. Modern societies require educational systems that equip individuals with the competencies necessary to thrive in evolving work environments and address complex global challenges (Brown et al., 2008; Trilling & Fadel, 2021). In response, educational institutions worldwide have been refining frameworks for 21st-century competencies, particularly within English language education. The integration of Information and Communication Technology (ICT) in professional and educational contexts further highlights the need for digital literacy and lifelong learning (Varis, 2007). More recent studies emphasize how digital competency

frameworks are shaping 21st-century learning and professional readiness (Redecker, 2020; Vuorikari et al., 2022; Herlinawati et al., 2024). Technology integration is also seen as critical for fostering 21st-century skills in various domains, including life sciences education, where it plays a significant role in the development of these competencies (Ramaila & Molwele, 2022).

These transformations have significant implications for English as a Foreign Language (EFL) learners, who come from diverse backgrounds with varying learning styles and abilities that influence language acquisition (Ananiadou & Claro, 2009). Beyond linguistic competence, EFL students must develop academic and professional skills, as traditional language teaching methods require re-evaluation to meet modern demands. Shoffner et al. (2010) argue that English language instruction must incorporate digital, visual, and cultural literacies to align with contemporary literacy expectations. This study therefore aims to explore the following research question:

RQ: Do Moroccan undergraduate students possess ICT skills, leadership skills, critical and creative thinking skills, and communication and English language skills?

2. Literature Review

The literature surrounding 21st-century skills emphasizes the importance of integrating key competencies such as critical thinking, problem-solving, communication, and collaboration into higher education curricula. These skills are not only essential for academic success but also critical for employability in an increasingly digital and interconnected world (Van Laar et al., 2020; Beckett, 2023). The widespread recognition of these competencies across various educational frameworks, including the Partnership for 21st Century Skills (P21, 2007) and the Assessment and Teaching of 21st Century Skills (ATC21S) initiative (Binkley et al., 2012), underscores the need for an educational system that prepares students with both cognitive and technological skills. These frameworks promote the integration of cognitive, technological, and social skills to ensure students are well-equipped to navigate contemporary challenges (Ledward & Hirata, 2011; Novia et al., 2024).

However, challenges remain in effectively embedding these skills into curricula. While frameworks like P21 and ATC21S emphasize the integration of digital literacy and ICT skills, studies by Ferrari (2012) and Kain et al. (2024) reveal that the translation of these frameworks into practical, actionable teaching strategies is often inconsistent. This gap highlights the need for clearer, more systematic approaches to embedding these competencies into everyday teaching practices. Problem-solving and critical thinking, for instance, are emphasized in the context of project-based learning (PBL), but challenges persist in aligning these practices with real-world application (Zhao et al., 2021).

Research on project-based learning (PBL) consistently supports its effectiveness in fostering essential 21st-century skills, particularly collaboration, communication, and leadership. Studies by Beckett (2023) and Elouaali et al. (2024) confirm that PBL helps students develop teamwork and problem-solving abilities through real-world projects. This aligns with global findings, which emphasize the positive impact of collaborative and problem-based learning on student development (Anazifa & Djukri, 2017; Hasanah & Malik, 2022). However, the successful implementation of PBL in Morocco, as highlighted by Elouaali et al. (2024) and Moustadraf (2021), depends on institutional support and teacher preparedness. Without proper professional development, the full potential of PBL may not be realized.

Additionally, higher education reforms have increasingly focused on integrating soft skills alongside academic knowledge. Competencies such as leadership, adaptability, and collaboration are now seen as essential for employability, with employers prioritizing candidates who can work effectively in teams and demonstrate leadership skills (Robles, 2012; Facione & Gittens, 2015). This perspective is echoed in Moroccan higher education, where universities are incorporating soft skills into curricula to enhance graduate employability (Elouaali et al., 2024; Moustadraf, 2021). However, as Odabaşı et al. (2023) and Avdiua et al. (2024) argue, the integration of these skills requires consistent, strategic implementation across educational systems to align with evolving global needs.

In a nutshell, the literature highlights a broad consensus on the importance of 21st-century skills, particularly critical thinking, problem-solving, collaboration, and communication, for both academic and professional success. While frameworks and studies universally emphasize the integration of these competencies, challenges persist in translating them into actionable, consistent strategies in curricula. Project-based learning and digital literacy are promising solutions, yet their success depends on the effective training of educators and institutional support. The synthesis of these studies underscores the need for more research and clear, actionable strategies to integrate these competencies into educational practices, ensuring that students are well-prepared for the challenges of the Digital Age.

3. Theoretical Framework

The 21st-Century Skills Framework (P21, 2007; Trilling & Fadel, 2009) serves as the foundation for this study, emphasizing the essential competencies required for success in an increasingly globalized, knowledge-based society. This framework categorizes

21st-century skills into three primary domains: learning skills, literacy skills, and life skills. Learning skills, including critical thinking, communication, creativity, and collaboration, are fundamental for students to engage effectively in complex problem-solving and decision-making (Partnership for 21st Century Skills, 2009). Literacy skills, such as information, media, and ICT literacy, ensure students can navigate and critically assess digital and informational resources (Voogt & Roblin, 2012). Life skills, which encompass leadership, flexibility, initiative, social skills, and autonomy, are crucial for adapting to dynamic professional and academic environments (Binkley et al., 2012). As Moroccan university students struggle with these competencies, the framework provides a structured approach to assessing their skill gaps and proposing necessary pedagogical interventions.

Furthermore, Self-Determination Theory (Deci & Ryan, 1985, 2000) provides insight into the motivational factors influencing students' development of 21st-century skills. This theory posits that individuals are driven by three core psychological needs: autonomy, competence, and relatedness. Studies have shown that when students perceive themselves as competent and in control of their learning process, they are more likely to engage with and develop essential skills for academic and professional success (Niemiec & Ryan, 2009). The findings of this study, which highlight students' lack of confidence in ICT skills and leadership, may reflect an educational context that does not sufficiently foster autonomous learning or self-efficacy (Dörnyei, 2005). Research indicates that autonomy-supportive learning environments, where students have greater control over their educational experiences, significantly enhance motivation, persistence, and skill development (Reeve, 2012). Thus, promoting student-centered learning approaches that enhance intrinsic motivation could play a critical role in improving 21st-century skill acquisition among Moroccan university students.

By integrating the 21st-Century Skills Framework, Constructivist Learning Theory, and Self-Determination Theory, this study provides a comprehensive theoretical lens for examining the skill deficiencies among Moroccan university students. The combination of these frameworks highlights the interplay between skill acquisition, learning environment, and motivational factors. Prior studies have emphasized the need for curricular reforms that align higher education with 21st-century demands (Griffin, McGaw, & Care, 2012; Scott, 2015). Given the growing demand for graduates equipped with ICT literacy, leadership, and critical thinking abilities, Moroccan higher education must shift towards innovative, student-driven pedagogical models. This theoretical foundation not only contextualizes the study's findings but also underscores the urgent need for pedagogical shifts that prioritize active learning, autonomy-supportive instruction, and interdisciplinary skill development.

4. Research Methodology

4.1 Research Approach and Design

The main objective of the present study was to explore undergraduate tertiary students' perception of 21st-century ICT skills, leadership skills, critical and creative thinking skills, and communication and English language skills. The study adopted a quantitative approach with a descriptive quantitative design. Rather than testing specific activities or investigating relationships between variables, the primary aim was to describe patterns in attitudes, opinions, behaviors, and characteristics. To accomplish this, a survey was administered to a sample of individuals, enabling the researchers to draw inferences about the wider population.

4.2 Research cites

The study was conducted in the faculties of letters and humanities at Moulay Ismail University and Hassan II University. These two institutions were selected due to their accessibility, which facilitated data collection and participant engagement. More importantly, they represent distinct academic environments within Moroccan higher education, offering valuable insights into the diverse socioeconomic and sociocultural contexts that shape students' educational experiences. By including institutions from different regions, the study captures a broader perspective on how factors such as economic background, cultural influences, and institutional resources affect students' perceptions and learning outcomes. This comparative approach enhances the study's validity and ensures a more comprehensive understanding of the research problem.

4.3 Population and sampling

Undergraduate students enrolled in Moroccan higher education institutions specializing in letters and human sciences constituted the population of this study. To recruit participants, the study employed a convenience sampling method, chosen primarily due to the ease of access and proximity of the target population to the researchers. This non-probability sampling technique facilitated the inclusion of students who were readily available and willing to participate in the research.

4.4 Sample

A total of 129 students voluntarily took part in the study. The sample comprised 62 students from the first and third semesters of the undergraduate program at one institution and 67 students from a comparable program at another institution. This selection provided a diverse representation of students at different stages of their academic journey, offering insights into their perceptions and experiences within the context of assessment and learning.

4.5 Data Instruments

To gather data for this study, the researchers adopted and adapted the 21st Century Skills Inventory (21CSI) developed by Fong et al. (2013). The instrument was carefully selected for its comprehensive approach to assessing essential 21st-century skills. The adapted version used in this study consisted of four main sections, encompassing 18 items designed to measure the skills mentioned above. For more details, the instrument used in this study is provided in the appendix.

4.6 Validity and reliability

Although the instrument used in this study had been previously validated, assessing its reliability and suitability within the Moroccan context was essential. To achieve this, a pilot test was conducted with a sample of 15 participants drawn from the target population at Hassan II University of Ain Chock in Casablanca. This preliminary testing phase ensured that the instrument was comprehensible and contextually appropriate for Moroccan students. The results of the pilot study demonstrated strong internal consistency, as indicated by a Cronbach's Alpha coefficient of 0.861. This high reliability score suggests that the 18-item scale effectively measured the intended constructs with minimal measurement error, reinforcing its appropriateness for full-scale implementation in the study.

4.7 Data Analysis

Descriptive statistics and Multivariate Analysis of Variance (MANOVA) were employed to analyze the collected data systematically. Descriptive statistics provided a comprehensive overview of participants' performance across various skill domains. Besides, MANOVA was utilized to assess the potential impact of multiple independent variables—namely, faculty, gender, semester, and age—on the measured skill domains. This multivariate technique was particularly suitable for examining whether significant differences existed across these demographic and institutional factors, offering deeper insights into how different student groups develop and perceive 21st-century competencies. By integrating both descriptive and inferential statistical methods, the analysis ensured a robust examination of the research question, enhancing the validity and interpretability of the findings.

5. Results

The primary focus of this study was to assess students' proficiency in 21st-century skills. Using the self-reported 21CSI questionnaire, participants evaluated their own success in developing these skills, with responses measured on a 5-point Likert scale ranging from 1 (very low) to 5 (very high). The findings are presented in Tables 1 and 2 below.

5.1 Ain Chock Faculty of Letters and Humanities

Table 1. Descriptive statistics of the four skills at Ain Chock Faculty of Letters and Humanities

Items	Semester 1			Semester 3		
	Num	Mean	SD	Num	Mean	SD
1. I have the necessary skills to learn online.	49	3.14	1.000	17	2.94	0.748
2. I can use innovative technology in learning.	49	2.59	0.911	17	2.41	0.870
3. I can use software applications in learning.	49	3.29	1.099	17	2.88	1.219
4. I regularly engage in discussions about learning with technology with my teachers.	49	3.06	1.049	17	2.94	0.966
5. I feel I have good leadership skills.	49	2.14	1.137	17	2.06	1.249
6. I feel confident in guiding and leading others.	49	2.31	1.045	17	2.24	0.562
7. I can influence the strength of others accomplish a goal.	49	2.33	1.088	17	2.29	1.213
8. I can inspire others to do their best.	49	2.47	1.138	17	2.29	0.985
9. I can demonstrate integrity and ethical behaviour in using influence and power.	49	2.35	1.052	17	2.00	1.173
10. I can use brainstorming techniques and create new ideas.	49	3.00	1.099	17	3.18	0.728
11. I can refine and evaluate ideas.	49	2.94	1.029	17	3.24	0.752
12. I can use reasoning and make logical conclusions.	49	1.78	0.771	17	2.06	1.197
13. I can interpret, explain and make predictions.	49	1.88	0.726	17	1.71	0.686
14. I can make inferences using inductive and deductive reasoning.	49	1.88	0.726	17	1.71	0.686

15. I am satisfied with my communication and English language skills.	49	2.86	0.736	17	3.12	0.781
16. I can speak confidently and effectively in English.	49	2.55	0.914	17	2.59	0.870
17. I can express my thoughts and ideas effectively using oral English.	49	2.10	0.941	17	2.00	0.866
18. I can read, comprehend and analyze English language materials read.	49	1.90	0.963	17	1.82	0.951

The values in Table 1 showed that apart from the mean values of ICT items, which reached acceptable means (M = 3.02 for S1 and M = 2.79 for S3), all the other skills generated means below the average (M = 2.50).

5.2 Moulay Ismail Faculty of Letters and Humanities

Table 2. Descriptive statistics of the four skills at Moulay Ismail Faculty of Letters and Humanities

Items	Semester 1			Semester 3		
	Num	Mean	SD	Num	Mean	SD
1. I have the necessary skills to learn online.	42	3.31	1.093	20	3.55	1.099
2. I can use innovative technology in learning.	42	3.05	1.081	20	2.85	0.875
3. I can use software applications in learning.	42	3.07	1.022	20	3.25	1.070
4. I regularly engage in discussions about learning with technology with my teachers.	42	3.26	1.083	20	3.40	0.821
5. I feel I have good leadership skills.	42	1.93	1.197	20	2.20	1.240
6. I feel confident in guiding and leading others.	42	2.48	0.833	20	2.60	0.940
7. I am able to influence the strength of others accomplish a goal.	42	2.05	1.209	20	2.35	1.268
8. I can inspire others to do their best.	42	2.33	0.979	20	2.50	1.147
9. I can demonstrate integrity and ethical behavior in using influence and power.	42	2.17	1.102	20	2.40	1.231
10. I can use brainstorming techniques and create new ideas.	42	2.45	1.194	20	2.15	0.875
11. I can refine and evaluate ideas.	42	2.38	1.011	20	2.30	1.081
12. I can use reasoning and make logical conclusions.	42	1.64	0.618	20	1.60	0.681
13. I can interpret, explain and make predictions.	42	1.64	0.618	20	1.70	0.657
14. I can make inferences using inductive and deductive reasoning.	42	1.69	0.643	20	1.65	0.671
15. I am satisfied with my communication and English language skills.	42	2.95	0.492	20	2.85	0.745
16. I can speak confidently and effectively in English.	42	2.57	0.801	20	2.50	0.827
17. I can express my thoughts and ideas effectively using oral English.	42	1.88	0.889	20	2.10	1.071
18. I can read, comprehend and analyze English language materials read.	42	1.83	0.935	20	2.10	1.071

The values generated from Moulay Ismail University, as displayed in Table 2 above, were similar to the ones in Table 1 from Hassan II University of Ain Chock. All the scores were below M = 2.50 except the ones measuring ICT skills, which were M = 3.17 for S1 and M = 3.26 for S2.

5.3 Multivariate Analysis of Variance (MANOVA)

To evaluate the impact of Faculty, gender, semester, and age, a Multivariate Analysis of Variance was conducted. The results showed that Faculty is the only independent variable in this analysis with a statistically significant effect on the dependent variables, as indicated by the p-value of 0.007 across all four test statistics in the table below. Note that Faculty is used in this study as a synonym for institution:

Table 4. Multivariate analysis of variance (MANOVA) test

Effect		Value	F	Hypothesis df	Error df	Sig.
Faculty	Wilks' Lambda	0.890	3.724[b]	4	120	0.007
Gender	Wilks' Lambda	0.969	0.956[b]	4	120	0.434
Semester	Wilks' Lambda	0.990	0.298[b]	4	120	0.879
Age	Wilks' Lambda	0.991	0.277[b]	4	120	0.892

Using the same analysis **(**Multivariate Analysis of Variance—MANOVA)**,** Tests of Between-Subjects Effects were conducted to provide information about the impact of various independent variables (like Faculty, Gender, Semester, and Age) on multiple dependent variables (like ICT, Leadership, Critical thinking, and Communication), as indicated in Table 5 below.

Table 5. Tests of Between-Subjects Effect

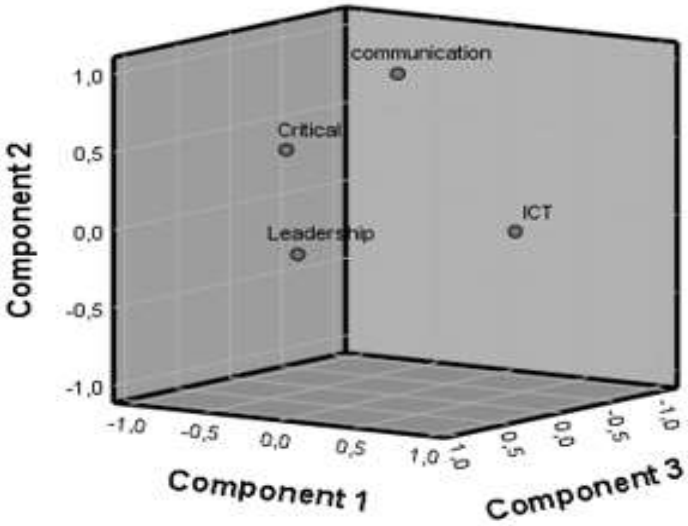
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Faculty	ICT	30.679	1	30.679	2.710	0.102
	Leadership	0.308	1	0.308	0.012	0.913
	Critical thinking	112.981	1	112.981	13.987	0.000
	Communication	0.408	1	0.408	0.057	0.811
Gender	ICT	9.758	1	9.758	0.862	0.355
	Leadership	0.040	1	0.040	0.002	0.969
	Critical	17.613	1	17.613	2.181	0.142
	Communication	0.232	1	0.232	0.033	0.857
Semester	ICT	1.431	1	1.431	0.126	0.723
	Leadership	17.894	1	17.894	0.701	0.404
	Critical	0.044	1	0.044	0.005	0.941
	Communication	1.866	1	1.866	0.263	0.609
Age	ICT	0.026	1	0.026	0.002	0.962
	Leadership	25.264	1	25.264	0.990	0.322
	Critical	0.254	1	0.254	0.031	0.859
	Communication	0.536	1	0.536	0.075	0.784

The results, as displayed, indicate that the variable **Faculty** has a significant effect on **Critical thinking** but does not significantly affect ICT, Leadership, or Communication. The four scales gave three components that explained 81% of variability. These are Critical thinking and ICT, Communication, and Leadership. The values justifying the three components are displayed in Table 6 below:

Table 6. Rotated Component Matrix

	Component		
	1	2	3
ICT	0.894	0.051	0.130
Leadership	0.030	-0.061	0.977
Critical	-0.608	0.430	0.175
Communication	-0.051	0.937	-0.094

The three components are represented in the following graph:



Graph 1. Component lot in ratated space

6. Discussion

This study aimed to explore Moroccan undergraduate tertiary students' 21st-century skills, with a special focus on ICT skills, leadership skills, Critical and creative thinking skills, and their Communication and English language skills. The findings highlight the increasing digital proficiency of today's youth, a trend reflected in the participants' high self-assessments of their ability to learn online through social media. Across the two sampled universities and academic levels, students rated their digital learning capabilities above the midpoint (M = 3.14 for S1 and M = 2.94 for S3 at Hassan II University of Ain Chock; M = 3.31 for S1 and M = 3.55 for S3 at Moulay Ismail University). Other survey items also scored above the average (M = 2.50) across both levels and institutions, indicating students' confidence in using innovative technologies for learning. Furthermore, they demonstrated a strong inclination to engage with their teachers in discussions on technology-driven learning. These findings align with Ramaila and Molwele (2022), who found that technology integration promotes the acquisition of 21st-century skills and competencies in Life Sciences teaching and learning. Similarly, Özeren (2023) established a significant relationship between secondary school students' digital literacy and 21st-century communication skills, reinforcing the importance of digital competence in modern education.

The increasing role of Information and Communication Technology (ICT) in education aligns with broader global trends. While ICT has transformed numerous industries such as business, tourism, engineering, and law, its impact on education, though significant, remains an evolving process. Traditionally, education has been a teacher-centred endeavour, with instructors serving as the primary source of knowledge. However, the integration of ICT is shifting this paradigm, positioning technology as an essential tool for knowledge dissemination and active learning. Ekizer and Yildirim (2023) highlighted that engaging and dynamic learning environments incorporating technology, project-based learning, and real-world applications facilitate the development of critical thinking, problem-solving, collaboration, creativity, and effective communication skills. These findings suggest that technology must be leveraged beyond information dissemination to foster active learning and critical engagement.

Accordingly, teachers must rethink their pedagogical approaches to technology to move beyond a mere conduit of information and become a transformative educational partner. As Jonassen et al. (1999 cited in Doolittle & Hicks 2003) emphasized, technology should evolve from being a "teacher" to a "partner" in learning. This shift requires educators to teach technological functionality and to reinovate their instructional practices (CDW-G, 2006, cited in Ertmer & Leftwich, 2010). Consequently, teacher knowledge is a crucial factor in successfully integrating technology into education. As Borko et al. (199, cited in Ertmer & Leftwich (2010) noted, supporting teachers in changing their practices requires expanding and refining their knowledge systems. In Morocco, El Mokhtar et al. (2023) found that teachers' awareness of 21st-century skills was moderate, emphasizing the need for in-service and pre-service teacher training to reinforce digital teaching-learning competencies.

Beyond pedagogical and technological expertise, effective technology integration also requires an understanding of students' cultural and social contexts. Zhao and Frank (2003) asserted that technological innovations are unlikely to succeed if they conflict with teachers' and administrators' existing values, beliefs, and practices. This underscores the importance of fostering social

interactions among all stakeholders, including teachers, students, and administrators, who contribute diverse cultural perspectives to the educational environment. The importance of socio-cultural factors in education is further supported by Oubadi et al. (2024), who found that Moroccan university students perceive learner autonomy as crucial in developing soft skills. Their study also highlighted the need for students to enhance key skills such as communication and time management, which are fundamental to success in both academic and professional contexts.

Despite their technological proficiency, students in this study reported deficiencies in leadership skills. Their self-assessments revealed limited confidence in their ability to inspire others, demonstrate integrity in positions of influence, or lead effectively (M = 2.32 for S1 and M = 2.17 for S3 at Hassan II University of Ain Chock; M = 2.19 for S1 and M = 2.41 for S3 at Moulay Ismail University). This aligns with Johnson and Johnson's (2018) conceptualization of leadership as fostering an environment where individuals feel valued and motivated. Leadership entails setting clear expectations, promoting accountability, and encouraging open communication (Northouse, 2018). While debates persist on whether leadership is an innate trait or a learned skill, research increasingly supports the idea that leadership abilities can be cultivated through education (Adair, 2009; Sinek, 2009; Wilson, 2010). The challenge lies in designing effective instructional methods for developing these skills (Petre, 2020). Studies have shown that this issue is prevalent in the Moroccan context. For example, Mraha and Messaoudi (2022) found that Moroccan doctoral students were unprepared for the transition from university to the workplace, as many of the skills acquired during doctoral training did not correspond with industry demands, further underscoring the importance of integrating leadership and professional skills into higher education curricula.

Critical thinking, another essential 21st-century skill, is actively promoted in Moroccan higher education through courses such as "Critical Thinking & Analysis." However, findings from this study suggest that while students at Hassan II University of Ain Chock demonstrated moderate proficiency in brainstorming and idea evaluation (M = 3.00–3.24), they struggled with logical reasoning and problem-solving. Additionally, faculty affiliation significantly influenced students' critical thinking skills, with those at Moulay Ismail University reporting lower mastery levels. Research on critical thinking development in Moroccan universities highlights several challenges. Chouari and Nachit (2016) identified inadequate instructor training, students' prior educational backgrounds, and systemic educational policies as barriers to teaching critical thinking. They found that many instructors relied on traditional lecture-based methods, a practice reinforced by large class sizes (often exceeding 180 students per group) and students' limited prior exposure to critical thinking. Similarly, Aouaf et al. (2020) categorized barriers into three domains: teaching-related, learning-related, and systemic. Teaching methods, particularly lecture-based instruction, discouraged reflective thinking. Learning-related obstacles included language proficiency issues, dependence on teachers, and rote memorization. Systemic barriers, such as the lack of practical application and inadequate infrastructure, further hindered students' ability to apply critical thinking skills in real-world scenarios.

These findings align with broader discussions on 21st-century skills and the integration of digital literacy, critical thinking, and leadership into higher education curricula. As highlighted in the literature review, 21st-century education frameworks emphasize cognitive, technological, and social competencies as essential for academic and professional success (Van Laar et al., 2020; Beckett, 2023). While models like P21 (2007) and ATC21S (Binkley et al., 2012) advocate for embedding these skills into curricula, practical implementation remains inconsistent (Ferrari, 2012; Kain et al., 2024). Project-based learning (PBL) has emerged as a promising approach for fostering collaboration, problem-solving, and leadership (Beckett, 2023; Elouaali et al., 2024), yet its success in Morocco depends on institutional support and teacher preparedness (Moustadraf, 2021).

Higher education reforms across the world increasingly emphasize soft skills alongside academic knowledge and call for the integration of competencies such as leadership and adaptability in curricula to respond to the requirements of employers (Robles, 2012; Facione & Gittens, 2015). In Morocco, universities have begun integrating these skills into curricula, yet studies indicate that effective implementation requires strategic, system-wide reforms (Odabaşı et al., 2023; Avdiua et al., 2024). In summary, while Moroccan university students exhibit confidence in digital learning, they face leadership and critical thinking challenges. These findings underscore the need for enhanced pedagogical strategies, including project-based and cooperative learning, to bridge skill gaps. Given the increasing demand for 21st-century competencies in education and the workforce, future research should explore systematic approaches for integrating these skills into curricula, ensuring that students are adequately prepared for the demands of the Digital Age.

7. Conclusion

This study highlights a significant concern: undergraduate students in Moroccan higher education report feeling inadequately prepared in key areas such as leadership, critical and creative thinking, and communication skills, including proficiency in English. These findings underscore a notable gap between the goals of ongoing reforms in Moroccan tertiary education—designed to

equip graduates with the essential skills for today's globalized world—and the actual skill levels of students. Despite various efforts to improve educational outcomes, students struggle to acquire and apply these crucial competencies.

In the 21st century, integrating learning and innovation skills, ICT competencies, and life and career skills is vital. Consequently, educational institutions, particularly English language classrooms, must prioritize teaching methods that foster creativity, critical thinking, collaboration, initiative, self-direction, and social and cross-cultural competencies.

8. Limitations and suggestions for further research

While the results of this study provide valuable insights, they would have been more robust if the sample size had been larger and if additional Moroccan universities had been included. Furthermore, the study could have explored a broader range of soft skills. In light of these limitations, future research should aim to gather data from a larger and more diverse group of participants, incorporating more institutions to ensure the representativeness and reliability of findings.

To effectively address these challenges, English language classrooms must be designed to engage students in intellectually stimulating, real-world tasks that improve their ability to communicate effectively—both orally and in writing, as well as through nonverbal means. Additionally, these environments should encourage students to develop a deeper understanding of complex issues, utilize a variety of media and technologies, make informed decisions, and collaborate creatively with others. Ultimately, it is crucial for educators to recognize the importance of 21st-century skills and to adapt curricula to meet the demands of this ever-evolving era.

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Bio data

Dr Anouar Mohamed El Kasri, PhD in Applied Linguistics from Moulay Ismail University in Meknes, Morocco, has been a teacher of English for over 14 years. He has actively participated in many national and international conferences. His primary research interests include Teaching English as a Foreign Language (TEFL), assessment and testing, and soft skills.

Dr Imad Messouab is an assistant professor at Hassan II Institute of Agronomy and Veterinary Medicine in Rabat, Morocco. His research areas and expertise include language teaching and learning, AI in education, and media studies.

Dr Ibrahim El Yousfi is a former Scientist at Plant Pathology Lab, National Institute of Agricultural Research (INRA), Morocco. He got his Engineer's degree in phytopathology from Minnesota University, USA in 1995 before he got his PhD in phytopathology from Hassan II University, Rabat, Morocco. He published more than 30 peer-reviewed papers and served as an expert for several projects and organizations.

Mr. Abdelaziz Ouchaib is an English high school teacher. He holds a master's in Applied Language Studies from the School of Arts and Humanities at Moulay Ismail University in Meknes, Morocco. Currently, he is a PhD candidate at the same university. His primary interests include Language Language Planning and Policy, TEFL, and Discourse Analysis. His current research evaluates the effectiveness of higher education reforms in Morocco.

Mr. Imad Hamdanat is a public English educator. Currently, he is a doctoral candidate in 'Applied Linguistics' doctoral program at Moulay Ismail University, Meknes Morocco. He obtained a Master's degree in 'Applied Language Studies' from the same university. He contributes to his fields of interest by participating in many national and international conferences.