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## Research Article

# Digital and Interpersonal Skills in Higher Education: A Qualitative Analysis of International Teaching Practices

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**Abstract.** This study explores the integration of digital and interpersonal skills in higher education through a qualitative analysis of international teaching practices. Based on interviews with five professors from various academic institutions around the world, the findings reveal major challenges, such as unequal access to technology, resistance to pedagogical change and the erosion of interpersonal skills due to excessive use of digital communication. Educators recommend mixed strategies such as project-based learning, gamification, mentoring and interactive tools to develop these two skills in parallel. The study concludes that these skills are not only complementary, but also essential to student adaptability and success in hybrid learning and professional environments, prompting universities to adopt integrated pedagogical approaches and strengthen faculty development.

**Keywords:** Digital skills, Interpersonal skills, Higher education, Pedagogical strategies, Skill integration.

## INTRODUCTION

In the increasingly digital landscape of higher education, the importance of both digital and interpersonal competencies continues to grow. To succeed academically and professionally in today's environment, students must acquire strong digital communication abilities as well as interpersonal skills. The ongoing shift toward digital education underscores the crucial role of integrating technological tools and communication methods to promote student interaction and engagement. As Popovici observes, the automation of various industries and the incorporation of digital communication within educational frameworks highlight the necessity of cultivating digital communication skills, especially via cloud-based technologies (Popovici, 2022). This serves as a cornerstone for nurturing students' communication proficiency. Equally, interpersonal skills remain essential for success in both personal development and professional contexts in higher education. Liu and Bu emphasize that these skills, along with communication competencies, greatly influence student learning experiences and overall satisfaction (Liu & Bu, 2024). Additionally, collaborative group activities have been shown to strengthen interpersonal communication, which is vital for fostering interdisciplinary cooperation among learners and educators. The critical need for targeted interpersonal communication training is further stressed by Dovhan, who highlights that successful educational outcomes depend on adaptable communication approaches that are mindful of situational factors (Довгань, 2024).

Furthermore, the rise of generative AI tools in education has drawn attention to their potential in enhancing not only digital competencies but also interpersonal abilities. Kangwa et al. identify a beneficial relationship between the application of generative AI and the cultivation of key interpersonal skills such as collaboration and effective communication, contributing to more dynamic learning settings (Kangwa et al., 2025). In the same vein, R discusses how AI-powered tools can support the development of interpersonal competencies among higher education students, particularly in improving communicative effectiveness (R, 2025).

Studies consistently underline the urgent need for higher education institutions to realign their programs with the skills increasingly demanded by the job market. Employers are placing a growing emphasis on interpersonal skills alongside technical know-how, revealing a persistent gap between graduate competencies and workplace expectations (Baird & Parayitam, 2019). Mytsenko and Rusanovska similarly advocate for academic institutions to evolve in response to shifting socio-economic trends by prioritizing soft skills, which are progressively valued for their contribution to employability (Mytsenko & Rusanovska, 2023). Such alignment is crucial in addressing labor market skill shortages and ensuring comprehensive student development.

Beyond technical expertise, the cultivation of emotional intelligence is becoming ever more critical in professional environments. Campos-García et al. contend that the ability to recognize and interpret emotional and social signals is key to enhancing communication and interpersonal relations, thereby improving

students' readiness for professional roles (Campos-García et al., 2025). Consequently, embedding emotional intelligence training within higher education programs can equip graduates to navigate a variety of workplace scenarios successfully.

In this article, we have addressed several key areas. Firstly, a literature review structured into two main sections: digital skills, then interpersonal skills. Next, we detail the methodology adopted for our study, before presenting and analyzing the results in the section dedicated to discussion, with particular emphasis on the interactions and dynamics between digital skills and interpersonal skills.

## LITERATURE REVIEW

### Digital skills

Digital skills represent a diverse set of abilities required for individuals to navigate and make effective use of digital technologies across multiple settings. These competencies are typically divided into various domains, such as information-related skills, communication abilities, and technological literacy. A key component of digital proficiency is the ability to work with information—this includes locating, assessing, and organizing digital content in a meaningful way. Individuals must be able to search for information using digital tools, determine its relevance, and manage it appropriately. Fan and Wang point out that assessing these skills is particularly important among undergraduate students, who frequently deal with extensive digital information in their academic tasks (Fan & Wang, 2022).

In addition, as digital environments become increasingly sophisticated, it is essential to develop a deeper understanding of how to interact with information. Laar et al. introduce a framework that incorporates both technical proficiencies and higher-level cognitive abilities as essential elements of digital competence (Laar et al., 2020). Another core area of digital skills lies in communication—specifically, using digital platforms to engage with others.

This involves not only exchanging messages but also distributing content effectively within digital ecosystems. According to D'Angelo et al., communication skills play a crucial role in professional contexts, where individuals often act as digital advocates who enhance knowledge exchange and internal communication within their organizations (D'Angelo et al., 2024).

In educational settings, digital awareness enables learners to make better use of online tools to support their learning journeys; however, it remains important to ensure these efforts inclusively reach varied student demographics (Telaumbanua & Nurmalina (2021) is not sufficiently relevant to this claim, so it has been removed). Technological literacy, too, forms a central aspect of digital competence. It involves the preparedness and capacity to operate a range of digital tools and applications effectively. Recent research shows that many students already exhibit a high degree of technical readiness, implying that educational systems are succeeding in nurturing these capabilities (A et al., 2024).

Moreover, given the fast-paced evolution of the digital world, it is increasingly vital to cultivate advanced skills that support creativity and adaptability—traits that are crucial in both personal and professional spheres (Ayob et al., 2022). Within the digital economy, Kivunja stresses the need for modern education systems to embed

digital competencies in their curricula, ensuring that learning outcomes are aligned with 21st-century demands (Kivunja, 2015).

As Weritz discusses, the accelerating pace of digital transformation across industries calls for a deep understanding of core digital skills that help employees keep up with emerging technologies (Weritz, 2022). Beyond individual benefits, digital skills also carry broader societal implications. Ahmad et al. emphasize that unequal access to digital competencies can widen the digital divide, limiting opportunities for those lacking technological access or proficiency (Ahmad et al., 2019). This highlights the need for inclusive digital literacy strategies that help mitigate these gaps, as shown by the ongoing challenges certain demographic groups continue to face (Ramli et al., 2023).

The proposed competency framework is structured around 12 core dimensions (Figure 1) (Karsenti et al., 2020). At its center are two pivotal components: Exercising ethical citizenship in the digital era and Developing and applying technological skills, which serve as foundational axes around which the remaining dimensions are organized.

**Figure 1:** Graphic representation of the 12 dimensions of the Digital Competency Framework



## Interpersonal skills

Interpersonal skills encompass the set of abilities that support effective communication and collaboration between individuals. These include key behaviors such as active listening, empathy, clear expression, and adaptability—skills that are particularly valuable in sectors like healthcare, business, and education. Studies have shown that strong interpersonal abilities enhance consultation outcomes in clinical

settings, as they are fundamental for clear and compassionate exchanges between practitioners and patients (O’Keefe, 2001; Bell, 2024). Moreover, the importance of interpersonal skills is being increasingly acknowledged across a broad spectrum of professional fields.

Dewanti and Novitasari, for instance, found that students enrolled in guidance and counseling programs tend to develop stronger interpersonal communication capabilities as they advance through their coursework, implying that such competencies improve with academic and practical experience (Dewanti & Novitasari, 2020). Likewise, in corporate environments, both interns and newly graduated professionals have identified listening and teamwork as essential communication skills, underlining the central role of interpersonal interactions in career growth (Dunn & Lane, 2019).

The value of these skills also goes beyond surface-level communication—they are deeply connected with emotional intelligence and leadership. Core components of emotional intelligence, such as self-awareness and social awareness, contribute significantly to effective leadership and the ability to resolve conflict, particularly under pressure (Cavaness et al., 2020). Research further demonstrates that strong interpersonal competencies can help reduce tensions in the workplace, highlighting their role in managing complex organizational situations (Zhang & Huo, 2015).

To better understand the structure and scope of interpersonal communication skills, it is helpful to categorize them into core dimensions. Each dimension reflects a distinct aspect of interpersonal competence that contributes to effective and respectful interaction in both personal and professional environments. The following table presents a refined classification of these skills, offering a detailed explanation of each category.

**Table 1** Refined Classification of Interpersonal Skills

Skill Dimension	Expanded Description
<b>Communication</b>	Encompasses the ability to convey ideas clearly and effectively through both verbal and written forms. It includes active listening, clarity in expression, non-verbal communication awareness (such as body language and tone), and the capacity to adapt one's message to different audiences or contexts. Effective communicators also ensure mutual understanding and encourage open dialogue.
<b>Collaboration</b>	Involves working cooperatively with others to achieve shared goals. This includes establishing meaningful professional relationships, fostering mutual trust, supporting team cohesion, and contributing positively to group dynamics. Collaboration also requires openness to feedback, respect for diverse opinions, and the ability to compromise when necessary.
<b>Conflict Resolution</b>	Refers to the ability to manage and resolve disagreements constructively within the workplace or in group settings.

	This includes identifying sources of conflict, engaging in respectful dialogue, applying negotiation techniques, and finding mutually acceptable solutions. Conflict resolution skills also encompass emotional regulation, patience, and the ability to mediate tensions calmly and fairly.
<b>Cultural Awareness</b>	Reflects the understanding and appreciation of cultural differences and the ability to interact effectively with people from diverse backgrounds. This involves developing cultural sensitivity, practicing inclusivity, recognizing and respecting varied beliefs and practices, and fostering tolerance. Cultural awareness is crucial for minimizing bias, reducing misunderstandings, and promoting respectful global or multicultural interactions.

## METHODOLOGY

A qualitative study was conducted in the form of semi-structured interviews with five university professors. The participants were selected for their expertise in higher education, digital skills, and interpersonal skills. Each interview lasted an average of 20 minutes and was conducted online via the LinkedIn platform.

The questions focused on the importance of digital and interpersonal skills for students, the challenges faced in developing these skills, and best practices for integrating them into academic curricula.

The informants for this study were five university professors, chosen based on their expertise in higher education, digital skills, and interpersonal skills. They were recruited through purposive sampling to ensure a diversity of experiences and perspectives.

Data were collected through individual semi-structured interviews, each lasting approximately 20 minutes. The interviews were conducted online via LinkedIn, allowing for the inclusion of participants from various geographic regions. An interview guide was used to maintain a certain level of consistency while allowing flexibility to explore emerging topics.

The interviews aimed to gather insights into the importance of digital and interpersonal skills for students, the challenges associated with developing these skills, and effective pedagogical practices for their integration into academic programs. The following six open-ended questions were posed to all participants:

1. In your opinion, what are the essential digital and interpersonal skills that students need to succeed in their future careers?
2. What are the main challenges you face in developing these skills among students?
3. How does your university integrate the learning of digital and interpersonal skills into the academic curriculum?
4. What best practices or teaching approaches would you recommend for effectively delivering these skills?
5. Have you observed any evolution in students' digital and interpersonal skills over the years? What do you think explains these changes?

6. Do you believe that digital and interpersonal skills are complementary? How does their interaction manifest in the context of higher education?

During the interviews, detailed notes were taken, and with the participants' consent, the conversations were digitally recorded to support accurate transcription and facilitate further thematic analysis.

The following table provides a general overview of the participants involved in the qualitative research. The participants are faculty members from various institutions, representing different academic positions and genders. This diversity allows for a more comprehensive analysis of the relationship between digital skills and soft skills in higher education settings.

**Table 2:** Participants Profile for the Study on Digital and Interpersonal Skills

NO.	FACULTY	SEX	POSITION
1	Abdelmalek Essaadi University of Morocco	Male	Assistant Professor
2	University of Greenwich of Royaume-Uni	Female	Assistant Professor
3	Chandigarh University of India	Male	Associate Professor
4	Texas A & M University, USA	Male	Professor and Researcher
5	National School of Architecture of Morocco	Male	Assistant Professor

## RESULTS

The data collected from the five semi-structured interviews provided valuable insights into the role and perception of digital and interpersonal skills in higher education. Through thematic analysis, several recurring patterns and perspectives emerged, reflecting both commonalities and nuances among the participants. The diversity of the professors' backgrounds enriched the findings, offering a multifaceted view of the integration and challenges of fostering these essential skills in academic settings. The results are organized around the main themes explored during the interviews, namely: the identification of key digital and interpersonal skills, the challenges encountered in their development, the strategies for their integration into curricula, best teaching practices, the evolution of students' competencies, and the interplay between digital and interpersonal skills in higher education.

### Fluid summary of qualitative study results

The qualitative analysis of the interviews revealed rich insights across the six research questions.

### Essential Digital and Interpersonal Skills

All professors emphasized the dual necessity of both digital and interpersonal competencies for career success.

- **Digital skills:** Professors consistently mentioned digital literacy, data fluency, AI tools, and cybersecurity awareness as critical. For example, the professor from the University of Greenwich stressed the importance of mastering platforms like Moodle, Canva, and SPSS, while Texas A&M highlighted adaptability in rapidly changing digital environments.
- **Interpersonal skills:** Communication, teamwork, empathy, emotional intelligence, and conflict resolution emerged as essential interpersonal abilities. The participant from Chandigarh University specifically emphasized active listening and teamwork as indispensable soft skills.

**Observation:** There is a global consensus that while technical competencies are essential, they must be paired with human-centric abilities for workplace effectiveness.

### Challenges in Developing These Skills

Common challenges were identified:

- **Technological inequality:** Professors from Abdelmalek Essaadi University and Texas A&M mentioned disparities in students' access to devices and reliable internet.
- **Resistance to change:** Several participants noted a reluctance from both students and faculty to adopt new technologies and pedagogical approaches.
- **Faculty training gaps:** Some professors highlighted that educators themselves may lack the necessary digital literacy to effectively teach these skills.
- **Over-reliance on digital communication:** Professors observed that excessive use of digital platforms risks eroding face-to-face interpersonal abilities.

**Insight:** There is a clear need for systemic institutional support, teacher training, and curriculum reform to bridge these gaps.

### Integration of Skills into Curricula

Integration approaches vary widely among institutions:

- **Formal strategies:** Use of interactive tools (Kahoot, Mentimeter), digital badges, peer mentoring programs, and workshops.
- **Project-based learning:** Simulated real-world tasks to develop both skill sets simultaneously.
- **Industry collaboration:** Texas A&M and Greenwich emphasized the importance of industry mentorship and partnerships for applied learning.

**Trend:** Institutions worldwide are moving towards more experiential learning models that blend digital proficiency with interpersonal development.

### Best Practices and Pedagogical Approaches

Best practices shared by professors include:

- **Interactive learning:** Use of simulations, role-play, and real-world problem-solving.
- **Mentorship and peer learning:** To bridge gaps between advanced and beginner learners.

- **Gamification:** Recognition of achievements through badges and micro-credentials.
- **Reflective practices:** Portfolios and self-assessment to promote awareness of skill growth.

**Conclusion:** There is a shift towards active learning and reflective practices to make skill acquisition more engaging and relevant.

### Evolution of Skills Over Time

Professors observed:

- **Digital proficiency** is generally improving, driven by smartphone use and exposure to online learning.
- **Interpersonal skills** are declining in quality, attributed to reduced face-to-face interaction and reliance on quick digital communications.
- **Generational factors:** Younger students are digitally adept but may struggle with patience and deep engagement in interpersonal exchanges.

**Key driver:** Rapid technological evolution and changing modes of education (e.g., remote learning).

### Complementarity of Digital and Interpersonal Skills

All professors unanimously confirmed the **complementarity** of digital and interpersonal skills:

- **Hybrid work environments** require both technical fluency and human-centric collaboration.
- **Group projects** blend technical platforms with communication and teamwork.
- **Digital communication etiquette:** Professionalism in emails and virtual meetings depends on both skill sets.

**Implication:** The future of education lies in designing integrated learning experiences that develop both competencies harmoniously.

This qualitative study highlights the strong complementarity between digital and interpersonal skills in contemporary university education. The teachers interviewed insist on the need for an active and inclusive pedagogy to meet the challenges of access to digital tools and evolving communication practices. They advocate the integration of experiential and collaborative practices, and recognize a positive evolution in digital skills, but a persistent fragility in interpersonal skills.

### DISCUSSION: INTERACTIONS AND DYNAMICS BETWEEN DIGITAL AND INTERPERSONAL SKILLS

The findings of this study highlight a critical interdependence between digital and interpersonal skills in higher education. While both competencies are essential in isolation, their true value emerges through their integration, particularly in response to the evolving demands of the modern workplace.

## Complementarity as a Response to Hybridization of Learning and Work Environments

The global shift towards hybrid and remote learning models has accelerated the need for students to master both digital tools and interpersonal dynamics. Digital platforms enable collaboration across distances, yet effective communication, empathy, and cultural awareness remain indispensable for meaningful engagement. The integration of these competencies fosters students' ability to navigate virtual teams, remote internships, and cross-cultural professional contexts.

**Insight:** Digital proficiency enables connection, but interpersonal skill ensures the depth and quality of that connection.

## Addressing the Risk of Skills Imbalance

While digital skills have advanced rapidly due to technological saturation and pandemic-driven remote learning, interpersonal skills have conversely declined. This imbalance presents risks for graduates, who may excel in technical tasks but struggle with conflict resolution, leadership, or persuasive communication in both virtual and face-to-face settings.

**Interpretation:** Educational strategies must counterbalance this trend by creating deliberate opportunities for interpersonal development within digital learning environments (e.g., structured debates, peer review, live discussions).

## Synergistic Pedagogical Practices

The analysis suggests that the most effective pedagogical approaches are those that intentionally blend both skill sets. Examples include:

- **Project-based learning:** Students use digital tools to co-construct knowledge while practicing teamwork and communication.
- **Simulations and role-play:** These activities replicate real-world scenarios, requiring both technical application and human interaction.
- **Reflective practice:** Encourages students to critically assess not just their digital outputs but also their collaborative processes.

**Conclusion:** Curriculum design should not treat these skills as separate domains but as interwoven strands of a single learning experience.

## Implications for Educational Policy and Faculty Development

Faculty readiness emerged as a significant barrier to effective skill integration. Without adequate professional development, educators may perpetuate siloed teaching approaches, focusing solely on theoretical digital competencies or neglecting soft skills entirely.

**Recommendation:** Institutions should invest in comprehensive faculty training to ensure educators can model and facilitate integrated skill development.

## Preparing Students for Future Workplaces

Finally, the interplay between digital and interpersonal skills is increasingly reflected in employer expectations. Job postings now commonly list requirements such as "digital fluency," "virtual collaboration," and "cross-cultural communication,"

underscoring the need for graduates who are equally comfortable with data dashboards and dialogue.

**Projection:** Equipping students with a balanced skill set enhances not only their employability but also their adaptability in a rapidly changing professional landscape.

## CONCLUSION

This study highlights the essential complementarity between digital and interpersonal skills in higher education. Through the analysis of international teaching practices, it becomes clear that mastering digital tools must go hand in hand with the development of human capacities such as empathy, communication, and collaboration. Although technological advances have strengthened students' digital literacy, they have also, paradoxically, weakened their interpersonal abilities. The interviewed educators unanimously emphasize the need for integrated and active pedagogical approaches, combining project-based learning, mentoring, and reflective practices to ensure a sustainable balance between these skill sets. This dual development is crucial to prepare graduates for the demands of the contemporary professional world, characterized by hybrid and intercultural environments. Finally, faculty training remains a critical lever to ensure the successful integration of these competencies, thereby enhancing graduates' employability.

Building on this reflection, the next study will focus on exploring the tools and indicators that can effectively assess these hybrid competencies throughout university programs: how can institutions reliably and continuously measure the joint development of digital and interpersonal skills among students?

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