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DIGITAL PLATFORMS AND ONLINE TOOLS AS A MEANS OF DEVELOPING STUDENTS' PROFESSIONAL COMMUNICATION SKILLS

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Abstract

Employers consistently rank communication among the most valued graduate competencies, yet much of students' academic and early professional communication now takes place through digital channels. This article examines how digital platforms and online tools can be used deliberately, rather than incidentally, to develop students' professional communication skills.

The study combines an integrative review of theoretical and empirical literature on computer-mediated communication, online learning and skills development with conceptual modelling. Sources were selected purposively from peer-reviewed journals, meta-analyses and international competence frameworks published mainly between 2000 and 2025.

Seven groups of digital tools were identified and matched with the components of professional communication they are best suited to develop: synchronous video, asynchronous discussion, collaborative writing, professional messaging, simulation and role-play, video recording with feedback, and AI-assisted practice. The tools do not develop skills on their own; their effect depends on task design, feedback and reflection. A five-stage framework (diagnose – model – practise – feedback – reflect and transfer) is proposed, based on a gradual move from low-stakes asynchronous tasks to high-stakes synchronous ones.

The framework gives university teachers a sequence for embedding communication training into existing courses and a checklist for choosing tools.

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The article links tool affordances to specific skill components and pedagogical conditions, a connection often missing in research that treats "online learning" as a single variable.

Keywords: professional communication skills; digital platforms; computer-mediated communication; online learning; higher education; feedback; social presence; digital competence

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Introduction

Ask any employer what graduates lack, and communication will appear somewhere near the top of the list. Qualitative work with managers shows that employers understand communication skills broadly: as the ability to write appropriate documents, to interact and present, to run meetings and, increasingly, to communicate well by e-mail and other electronic channels (Coffelt et al., 2019). The World Economic Forum's latest survey of more than 1,000 employers across 55 economies describes a labour market in which a large share of core skills is expected to change by 2030 and in which skills gaps remain the main barrier to transformation (World Economic Forum, 2025). Communication is one of the few skills that is not made obsolete by this change; it is made more complex by it.

The complication lies in the channel. A graduate entering a hospital, a ministry, an engineering firm or a military unit today will write more messages than letters, attend more video calls than formal meetings, and coordinate work through shared documents and team platforms. The norms of these channels are not obvious. Many students are fluent users of social media but have little idea how to write a request to a supervisor, how to disagree politely in a group chat, or how to hold the attention of colleagues on a video call. After two decades of teaching, I see this gap every semester: the same student who speaks confidently in the classroom may switch off the camera and fall silent online, while another who rarely speaks in person writes long, thoughtful posts in a discussion forum.

Higher education systems have responded to the digital shift mainly at the level of infrastructure. In Uzbekistan, the Concept for the Development of the Higher Education System until 2030 and the "Digital Uzbekistan – 2030" strategy made digitalisation a national priority (President of the Republic of Uzbekistan, 2019, 2020). Platforms, learning management systems and video services are now available in most universities. However, availability of tools does not by itself mean that students' communication skills improve. Reviews of technology-enhanced learning have repeatedly warned that technology is often used to replicate

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existing practice rather than to transform it, and that claims of "enhancement" are rarely backed by clear evidence of what exactly was enhanced (Kirkwood & Price, 2014).

Research on online learning is extensive, but most of it treats the online format as a whole and measures achievement or satisfaction (Martin et al., 2020; Means et al., 2013). Far less attention has been paid to the question of which digital tools, used in which way, develop which components of professional communication. Answering this question is the aim of the present article. It addresses three research questions:

- **RQ1.** What theoretical frameworks explain how digital environments shape communication and its development?
- **RQ2.** Which groups of digital platforms and tools can be used to develop specific components of students' professional communication skills?
- **RQ3.** Under what pedagogical conditions do these tools contribute to skill development rather than merely host communication?

Literature review

In this article, professional communication skills are understood as the ability to exchange information, build working relationships and resolve problems in ways that suit the norms of a profession and the situation. Drawing on research on communication culture and interpersonal perception (Ruziev, 2024; Ruziyev, 2024), this article distinguishes four components: a motivational component (readiness and willingness to communicate), a cognitive component (knowledge of genres, norms and channels), an emotional-regulatory component (managing one's own emotions, empathy, interpreting others' intentions) and a behavioural component (actual oral, written and interactive performance). Spitzberg's (2006) model of computer-mediated communication competence follows a similar logic: motivation, knowledge and skill must all be present, and each can be weak independently of the others. This distinction matters for teaching, because a student who knows the rules but avoids communicating needs different support from one who communicates eagerly but ignores the rules.

Three classic theories remain useful for understanding what happens when communication moves online. Social presence theory holds that media differ in how strongly they convey the presence of the other person, and that weaker presence makes interaction less personal (Short et al., 1976). Media richness theory adds that rich channels, which carry immediate feedback and multiple cues, suit ambiguous tasks, while lean channels suit routine ones (Daft & Lengel, 1986). Both theories predict that text-based communication will be harder for complex, emotionally loaded exchanges.

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Walther's (1996) hyperpersonal model complicates this picture. Given time, people compensate for missing cues through language, and asynchronous communication can even become more carefully crafted and more intimate than face-to-face talk, because senders can edit their messages and present themselves selectively. Suler (2004) described the darker side of the same mechanism: anonymity, invisibility and delayed responses weaken self-restraint, which can lead both to greater openness and to rudeness. For teaching, the lesson is that digital channels do not simply make communication "worse"; they change which skills are needed. Students must learn to create presence through words, to choose the channel that fits the task, and to control impulses that the medium no longer checks.

Moore (1989) distinguished three types of interaction in distance education: learner–content, learner–instructor and learner–learner. A meta-analysis by Bernard et al. (2009) found that designs that strengthened these interactions were associated with higher achievement. The Community of Inquiry framework placed social presence alongside cognitive and teaching presence as a condition of meaningful online learning (Garrison et al., 2000), and a later meta-analysis confirmed that social presence is related to students' satisfaction and perceived learning (Richardson et al., 2017).

At the same time, research on computer-supported collaboration has shown that putting students in an online group does not guarantee interaction. Kreijns et al. (2003) identified two common pitfalls: taking social interaction for granted, and restricting it to cognitive tasks while neglecting the social and emotional side of group work. Both pitfalls are directly relevant to communication training, where the social side is the target of learning rather than a by-product.

Evidence on particular practices is uneven but instructive. A meta-analysis of simulation-based learning in higher education pooled 145 empirical studies and found a large positive overall effect on complex skills, with instructional support such as examples and reflection phases adding to the benefit (Chernikova et al., 2020). A synthesis of research on oral presentation competence derived seven design principles, three of which concern formative assessment: feedback from teachers, feedback from peers and self-assessment (van Ginkel et al., 2015). Feedback research more broadly shows that its effect depends on whether it tells students where they are going, how they are doing and what to do next (Hattie & Timperley, 2007), and that good feedback practice supports self-regulation (Nicol & Macfarlane-Dick, 2006). Peer assessment can extend feedback beyond what one teacher can provide (Topping, 1998).

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Videoconferencing introduced its own difficulties. Bailenson (2021) argued that videoconferencing causes "nonverbal overload" through prolonged close-up eye gaze, constant self-view and reduced mobility. A survey of 276 students at Cornell University found that most kept their cameras off, often because of concerns about appearance or the home environment, and recommended encouraging rather than requiring camera use (Castelli & Sarvary, 2021). Generative artificial intelligence has added a new layer: it can provide individual practice and instant feedback on writing and dialogue, but raises concerns about over-reliance, accuracy and academic integrity (Kasneci et al., 2023; Zawacki-Richter et al., 2019).

European frameworks already treat communication through digital technologies as part of the digital competence of citizens and educators (Redecker, 2017; Vuorikari et al., 2022), and models such as TPACK remind teachers that technology, content and pedagogy must be integrated (Mishra & Koehler, 2006). What is still missing is a practical link between three elements: the affordances of particular tools, the specific components of professional communication, and the pedagogical conditions that turn tool use into skill development. This article attempts to build that link.

Methodology

The study is conceptual. It combines an integrative literature review with conceptual modelling. An integrative review was chosen because it allows theoretical and empirical sources of different designs to be brought together in one analysis, which is necessary when a topic spans communication theory, educational technology and skills research (Whittemore & Knafl, 2005). Conceptual modelling was used to synthesise the findings into a framework that can guide practice; Jaakkola (2020) describes this as a "model" type of conceptual article, whose purpose is to explain relationships between constructs and predict how they work together.

Source selection. Sources were selected purposively rather than through an exhaustive database search. Three groups of sources were included: (1) seminal theoretical works on computer-mediated communication and online interaction; (2) meta-analyses and systematic reviews on online learning, simulation, feedback and presentation skills; and (3) international competence frameworks and employer studies. Priority was given to peer-reviewed publications in journals indexed in Scopus or Web of Science, with most sources published between 2000 and 2025. Classic works published earlier were retained when they remain the main reference point in their field.

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Analysis. The analysis proceeded in three steps. First, the components of professional communication were defined on the basis of the reviewed models (Section 2.1). Second, digital tools discussed in the literature were grouped by their main communicative affordance – synchronous or asynchronous, oral or written, individual or collaborative, real or simulated – and each group was matched with the components it supports and with the evidence or mechanism behind this link. Third, recurring conditions of effectiveness (task design, feedback, reflection, progression) were extracted and organised into a staged framework.

Trustworthiness. To reduce the risk of selective reading, each link between a tool group and a skill component was accepted only when it was supported either by empirical evidence or by an explicit theoretical mechanism in the cited literature. The author's teaching experience in higher military education was used to illustrate the findings, not as evidence. Because the review was not systematic, its conclusions should be treated as a theoretically grounded proposal that requires empirical testing (see Section 5.3).

Results. Digital tools and the skill components they support (RQ2)

The analysis produced seven groups of digital tools. Table 1 summarises what each group offers for communication training, which component of professional communication it mainly supports, and what the literature says about the mechanism or evidence.

Table 1. Groups of digital tools and their contribution to professional communication skills

Tool group	Examples	Main skill components developed	Mechanism or evidence
Synchronous video communication	Zoom, Microsoft Teams, Google Meet	Behavioural (oral interaction, turn-taking, presenting); emotional-regulatory	Rich channel with immediate feedback suits complex tasks (Daft & Lengel, 1986); risk of nonverbal overload and camera avoidance (Bailenson, 2021; Castelli & Sarvary, 2021)
Asynchronous discussion	LMS forums (Moodle), discussion boards	Cognitive (argumentation, written register); behavioural (written interaction)	Time to plan and edit messages supports careful expression (Walther, 1996); social presence linked to learning (Garrison et al.,

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Tool group	Examples	Main skill components developed	Mechanism or evidence
			2000; Richardson et al., 2017)
Collaborative writing	Shared documents, wikis	Behavioural (co-authoring, negotiating meaning); motivational (shared responsibility)	Visible contributions and comments make collaboration observable; interaction must be designed, not assumed (Kreijns et al., 2003)
Professional messaging and team platforms	E-mail, Teams/Slack channels, Telegram groups	Cognitive (genre and netiquette); emotional-regulatory (tone, restraint)	Lean channel requires explicit wording; disinhibition increases the need for self-control (Suler, 2004)
Simulation and role-play	Virtual patients or clients, scenario-based role-play, VR	Behavioural and emotional-regulatory (difficult conversations, conflict)	Large effects of simulation on complex skills when combined with support and reflection (Chernikova et al., 2020)
Video recording with feedback	Recorded presentations, video annotation, peer review	Behavioural (presentation); cognitive (self-assessment)	Teacher feedback, peer feedback and self-assessment are core design principles for oral presentation competence (Hattie & Timperley, 2007; van Ginkel et al., 2015)
AI-assisted practice	Conversational agents, writing assistants	Cognitive (register, clarity); behavioural (rehearsal)	Individual practice and immediate feedback; risks of over-reliance and inaccurate output (Kasneci et al., 2023)

Three observations follow from Table 1. First, no single tool covers all four components. Synchronous video is strongest for oral interaction but weakest for reflection; asynchronous forums are the reverse. A course that relies on one platform will therefore train only part of the skill. Second, the motivational component is rarely developed by the tool itself; it

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depends on whether students see the task as meaningful and safe. Third, several tools carry built-in risks – fatigue, disinhibition, over-reliance on AI – that must be managed as part of the training rather than ignored.

Conditions of effectiveness (RQ3)

Across the reviewed studies, the same conditions appeared repeatedly when digital tools led to better communication rather than simply more of it:

1. **Explicit communicative goals.** Tasks state which communication skill is being practised, not only which content is being learned.
2. **Modelling of norms.** Students see examples of good and poor practice in the relevant genre before they are assessed.
3. **Graded progression.** Tasks move from low-stakes, asynchronous, written formats to high-stakes, synchronous, oral ones.
4. **Structured feedback.** Feedback comes from the teacher, peers and, where useful, recordings, and tells the student what to do next.
5. **Reflection and transfer.** Students analyse their own performance and connect it with situations they will meet in their profession.

A staged framework

These conditions were organised into a five-stage framework (Table 2). The principle of graded progression is central. Many students experience online speaking as a threat; asking them to present on camera in the first week can reinforce avoidance. Starting with written, asynchronous tasks gives them time to prepare and to build confidence, consistent with the hyperpersonal model (Walther, 1996), before they move to live interaction.

Table 2. Framework for developing professional communication skills with digital tools

Stage	Teacher's task	Suggested tools	Expected outcome
1. Diagnose	Identify each student's strong and weak components	Short online questionnaire, analysis of first forum posts and e-mails	Individual profile of communication skills
2. Model	Show norms of the genre and channel	Annotated examples of e-mails, posts, recorded presentations	Students know what "good" looks like
3. Practise (graded)	Assign tasks from low to high stakes	Forum → collaborative document → messaging tasks → video role-play → live presentation	Gradual growth of confidence and skill

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Stage	Teacher's task	Suggested tools	Expected outcome
4.Feedback	Organise teacher, peer and self-feedback	Rubrics, video annotation, comments in shared documents, AI feedback checked by the teacher	Students know what to improve next
5. Reflect and transfer	Link performance to professional situations	Reflective journals, debriefing after simulations	Conscious, transferable skill

The framework is cyclical: after Stage 5, the teacher returns to diagnosis to check progress and adjust the next cycle. In my own practice with cadets, the most noticeable change usually comes at Stage 4. Students who watch a recording of their own presentation together with a peer often see in two minutes what a teacher's comments could not convey in a whole term.

Discussion. Interpreting the findings

The central finding of this review is that digital tools are better understood as environments for practice than as causes of learning. This is consistent with the warning by Kirkwood and Price (2014) that technology is often credited with improvements that actually come from changes in teaching design. A video platform does not teach turn-taking, and a discussion forum does not teach argumentation. They create conditions in which these skills can be practised, observed and given feedback – if the teacher designs tasks that require them.

The framework also offers a way to reconcile two theoretical traditions that are often presented as opposed. Social presence and media richness theories emphasise what digital channels lack (Daft & Lengel, 1986; Short et al., 1976), while the hyperpersonal model emphasises what they make possible (Walther, 1996). In a graded sequence, both are correct at different stages. Lean, asynchronous channels give anxious or introverted students a safe space to prepare and to experience success; rich, synchronous channels then test whether they can communicate under real-time pressure. The goal is not to choose the "best" channel but to move students across channels deliberately.

The proposed framework adds to existing competence frameworks. DigCompEdu and DigComp 2.2 describe what digitally competent educators and citizens should be able to do, including interacting and collaborating through digital technologies (Redecker, 2017; Vuorikari et al., 2022). They do not, however, prescribe a teaching sequence. The present framework can be read as one possible route to these outcomes in the area of professional communication.

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Three risks deserve attention. The first is fatigue and avoidance in video communication. Rather than demanding that cameras be on, teachers can explain why visual contact matters, set shared norms, offer alternatives such as chat and polls, and keep live sessions short and interactive (Bailenson, 2021; Castelli & Sarvary, 2021).

The second is **online disinhibition**. Group chats and forums can quickly become places of sarcasm or conflict (Suler, 2004). Clear, jointly agreed rules of communication, and a teacher who intervenes early and uses conflicts as learning material, turn this risk into an opportunity to train emotional regulation and constructive disagreement.

The third is over-reliance on artificial intelligence. AI tools can help a student rehearse a difficult conversation or check the register of a letter. But if a student lets a model write all their messages, the skill is not developed at all. AI output should be treated as a draft to be critically evaluated, and assessment should include tasks done without it (Kasneci et al., 2023). Questions of equal access to devices and stable internet also remain; tasks should be designed so that students with weaker connections can still take part, for example through asynchronous alternatives.

This study has several limitations. The review was integrative and purposive, not systematic, so some relevant studies may have been missed. Much of the empirical evidence comes from Western universities and from the emergency transition to online teaching during the COVID-19 pandemic, a period that differed from planned online learning (Dhawan, 2020; Hodges et al., 2020). The framework has not yet been tested empirically. Future research should evaluate it in quasi-experimental designs, compare different sequences of tools, and include students from Central Asian universities, whose communication norms and access to technology may differ from those in the studies reviewed here. Validated instruments for measuring computer-mediated communication competence, such as the one proposed by Spitzberg (2006), would need careful adaptation for these contexts.

Conclusion

Digital platforms and online tools have become the everyday environment of professional communication, and universities can no longer treat them as a neutral container for teaching. This article set out to explain how these tools can be used to develop students' professional communication skills. Its answers to the three research questions can be summarised as follows.

First, communication theory shows that digital channels change which skills are required: students must create presence through words, select channels that fit the task and regulate impulses that the medium no

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longer restrains. Second, seven groups of tools – synchronous video, asynchronous discussion, collaborative writing, professional messaging, simulation and role-play, video recording with feedback, and AI-assisted practice – support different components of professional communication, and none of them covers all components alone. Third, tools contribute to skill development only under certain conditions: explicit communicative goals, modelling of norms, graded progression from low-stakes to high-stakes tasks, structured feedback, and reflection linked to professional situations.

Practical implications. For university teachers, the proposed five-stage framework offers a simple sequence that can be embedded in existing subjects without creating a separate course. For curriculum designers, it suggests that communication outcomes should be written into course descriptions alongside content outcomes, and that a mix of tools should be planned across a programme. For institutions in Uzbekistan and similar contexts, where digital infrastructure has expanded quickly, the next step is to invest in teachers' ability to design communicative tasks, not only in platforms. The value of a platform is decided by what the teacher asks students to do on it.

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