

Chapter 19

Rolling With the Flow: Online Faculty and Student Presence in a Post-COVID-19 World

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ABSTRACT

COVID-19 created a paradigm shift in higher education (HE), speeding up a process that was already underway and forcing institutions and instructors to develop the competencies necessary to offer effective delivery and resources online. Student reflections on Spring 2020 suggested that institutions were not always successful in their transitions. Students saw gaps in crucial areas, including online instructor presence, social presence for instructors and peers, and instructor immediacy. The purpose of this chapter is to propose best practices for instructional practice and technology in the online virtual education space to increase student engagement, instructor immediacy, and online social presence. HE institutions must embrace or enhance a variety of techniques that will improve the student experience. HE continues its shift toward cutting-edge technology to scale, streamline, and improve student engagement and interaction while creating new ways of establishing instructor presence and immediacy.

INTRODUCTION

The COVID-19 pandemic was an unprecedented disruptive force impacting every facet of modern life. While the world still feels the effects profoundly, attention has turned toward predicting a post-COVID-19 environment. Thoughtful experts can disagree about the new world created by the virus, but they unanimously predict that it will not return to normal. Education in general and higher education (HE) specifically experienced a seismic paradigm shift in spring 2020 as 86% of HE programs moved online within three weeks (Patch, 2020). That transition rapidly accelerated a trend in the growth of online delivery that

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began years prior (Lederman, 2018). This shift is part of a more significant trend away from traditional classroom teaching toward online modalities with the latest technologies and represents “a digital disruption from within” (Thomas & Thorpe, 2018, p. 63). Once the Spring 2020 semester concluded, most of HE remained online for fall 2020 and spring 2021. Although all the universities and colleges rolled with the flow and made strides toward improving their online delivery, not every university or college moved its programs online successfully from the viewpoint of its students. COVID revealed the strengths and weaknesses of an education system facing the challenges of digitalization (Valverde-Berrocso, 2020).

Students expressed disappointment in the engagement with both faculty and peers while expressing a positive view of the attempts by their institutions to provide valuable learning experiences (Patch, 2020). These opinions resulted in an opportunity for HE professionals, educators, and administrators to create a larger community of care around students, take stock of what is valuable, transform and improve online delivery. As the consumers of education, students’ views of online delivery and interactions drive that change. Understanding instructors’ and peers’ online presence and immediacy in the virtual classroom are critical. This chapter presents a discussion of student views of the online delivery of HE programs in a post-COVID-19 environment, instructor and student presence, instructor immediacy, and a glimpse into the future of applied HE technology as a mode of delivering on these promises.

Student Views of Online Learning Experiences

Many surveys conducted during 2020 provided insight into students’ feelings about the quality of the education they received during COVID-19. The findings revealed that although 65% of students felt that their university was handling the crisis well, only 15% of respondents felt that online classes were at least as practical as in-person classes (Patch, 2020). A survey of 955 college students showed that a third of student respondents were concerned about losing contact with their instructors, and 31% were concerned about being isolated from their classmates (Pinkus, 2020). Pinkus (2020) found that 87% of students rated instructor virtual office hours as at least somewhat beneficial or very beneficial. This finding is counterintuitive as the authors note that instructors who hold virtual office hours often find themselves sitting alone in a virtual meeting space. Other findings included that video/chat conferencing is ranked as the second most popular option for communication with instructors and peers, while email ranked number one for instructors and texting ranked number one for peers (Pinkus, 2020). In April 2020, a one-question survey found that 75% of students felt they were not receiving a quality e-learning experience from their HE institutions (75% of College Students Unhappy..., 2020). Supporting that 75% figure, a survey of 3,000 students by tophat.com found that 78% of students rated the online class experience as unengaging, 75% missed the face-to-face interactions with students and faculty, and 38% did not enjoy or see the value in synchronous online learning (Top Hat Staff, 2020).

Additionally, McCleskey and Gruda (2020) conducted an online survey of 500 college students across various HE institutions. The findings showed that 45% of students did not think they received a quality learning experience from their university or college. Further findings included 59% of student respondents rated online learning as less effective than in-person learning, 17% were dissatisfied with instructor preparation, 20% were dissatisfied with the quality of instruction, 26% were dissatisfied with student engagement, and 22% were dissatisfied with the overall learning in their recent courses (McCleskey & Gruda, 2020). What does this mean for the future of HE programs?

Implications of the Student Responses

The various survey results present a view of student dissatisfaction regarding interaction and engagement with their instructors and fellow students. This theme emerges across multiple surveys and, while percentages may vary, the overarching concept is a lack of engagement with resources, faculty, and other students. Students want engagement and opportunities to interact. However, they also want flexibility and to access resources and information asynchronously. They want resource flexibility *and* interactivity online.

Prior research (conducted before COVID-19) also reveals students' satisfaction and overall feelings about online engagement. Martin and Bollinger (2018) found that higher levels of student engagement increased student satisfaction, student motivation, and student performance in online settings. Thomas and Thorpe (2018) posited that effective online course facilitation depended on the presence and expertise of the facilitator rather than on the adoption of the most recent technological tool of the trade. Students care about social interaction, discussion, accessibility, and collaboration more than they do about the latest technology. Faculty and peer presence in online settings matters to students.

BACKGROUND

Faculty and Student Online Presence

Students' interactions between faculty and fellow students constitute presence. Prior research revealed that students reported being more satisfied and learning more in online courses when the instructor and the students created more social presence (Anagnostopoulos, 2005). This trend has continued and intensified. The concept of *presence* suffers from theoretical pluralism, having various meanings and definitions. One early concept of presence involved a literal representation online through websites, URL addresses, or blogs. The term *presence* in this chapter refers to the presence of the instructor and students in the online course room or online learning environment and is a subcategory of social presence.

Social presence is the "degree to which a person is perceived as a 'real person' in mediated communications" (Gunwardena & Zittle, 1997, p. 9). The first published mention of *social presence* describes it as the salience of another in a mediated communication and the corresponding salience of the interaction (Short et al., 1976). In other words, *social presence* refers to the sense that a person is a natural person and that their communication online is genuine and authentic. Although primarily a perceived phenomenon, creating social presence in online settings requires deliberate actions from instructors and students (Anagnostopoulos, 2005). Prior literature suggests that increased social presence in online settings correlates with increased learning outcomes for students and higher levels of student satisfaction (Hostetter & Busch, 2013; LaPointe & Gunawardena, 2004; Lee et al., 2011; Picciano, 2002; Swan et al., 2008). Social presence is also associated with comfort, reduced anxiety, emotional connections (Aragon, 2003), and increased peer social interaction, immediacy, and group cohesion (Sung & Mayer, 2012). Evidence suggests that social presence positively affects students' learning, participation, retention, and motivation (Oh et al., 2018). Recently, Daigle and Stuvland (2021) suggested that universities should provide high-quality digital experiences, both synchronous and asynchronous, and prioritize social presence in digital environments. The evidence for the value of enhanced online presence is substantial. HE

professionals should understand how to utilize social presence in online educational settings effectively. How can instructors and institutions improve social presence in online digital environments?

Evidence-Based Practices for Improving Presence

Prior research confirmed several best practices for online instruction (Roddy et al., 2017). These included training and development for online instructors, recognizing the unique competencies required for online teaching effectiveness, online instructor readiness as an institutional agenda item, practical communication skills, and adequate technology comfort, knowledge, and ability. Other best practices for online instruction included the ability for instructors to acclimate quickly to new tools and digital environments, diagnose student barriers to learning in real-time, command asynchronous and synchronous content delivery methods, and monitor multiple online synchronous communication channels simultaneously. Additionally, the authors recommended establishing and maintaining student rapport in digital settings, clear communication of assessment practices, and mastery of instructional competencies (Roddy et al., 2017). Other competencies that require mastery by online instructors include communication skills, technical competence, providing detailed and informative feedback, administrative skills, responsiveness, and providing real-time student support (Beaudoin, 2015).

While the modern instructor may view the previous list and think, “yes, these are the same skills that I utilize in my traditional classroom,” the answer to that claim is “yes and no.” There is considerable overlap between the competencies needed to succeed in the digital course room and the traditional classroom; however, the online instructor faces added challenges. Successful execution of social presence in online courses requires an intuitive blending of asynchronous and synchronous content that includes small-group discussions via video conferencing, available instructor virtual office hours, and live lectures in short form (Daigle & Stuvland, 2021). Social presence is also essential for successful asynchronous discussion forums and small group interactions (Akcaoglu & Lee, 2016). Both environments require tailored email communication; however, the online setting may require a greater focus on being genuine, authentic, and approachable. Successful online teaching requires an expanded set of competencies and an increased emphasis on delivering content and resources in dynamic digital environments.

Poll et al. (2014) recommended six instructional practices to increase online engagement and student retention. These included: 1) building an online community of students, 2) clarifying course expectations and objectives, 3) employing the best online tools for interaction, 4) promoting the exchange of information, 5) providing timely and actionable student feedback, and 6) creating a student-centered environment. Collaborative learning, respectful discourse, dialogue, and engaging online conversation foster a sense of community online. Additionally, the instructor’s presence in the online space is crucial for community development, student learning, and satisfaction. Effectively clarifying course expectations and objectives requires the use of a carefully constructed syllabus, meticulous course planning, frequent communication through multiple channels, electronic reminders for critical due dates and other deadlines in the course, and clarity regarding grading criteria and assessment in the course through communication, transparency, and the use of assignment rubrics. Asynchronous collaboration utilizing software tools, forums, discussion postings, well-designed topics, small group discussions, icebreakers, and personal reaction questions that require student reflection facilitates the exchange of ideas and information in the online course room. Feedback provided on student work should be constructive, actionable, and highly personalized. Students should receive concrete steps for improvement designed for application to future

assignments in the course. Therefore, the students' need to receive timely feedback places crucial accountability on the online instructor to quickly assess submitted assignments.

As it relates to instructor participation in online discussions, the instructor must balance the need for facilitation and providing information with encouraging student interaction and engagement. Instructors should rely on learner-initiated and led activities such as small group discussions, projects, presentations, and individual student responses through online forums to drive increased student engagement and interaction (Poll et al., 2014). Creating a student-centered environment requires flexibility, sensitivity to students' work-life demands, and awareness of adult learner challenges. Further, it requires judgment to weigh presence against the practical issues of time and meeting intended outcomes. Both student-to-student and faculty-to-student interactions are essential in the online educational setting and require various facilitation methods.

Publishing their observations from two courses taught online in spring 2020, Theodosiou and Corbin (2020) noted that paring back the content (from a pre-COVID on-ground course) and ensuring that it aligns better with the learning objectives for the course is appropriate before transferring the course to an online platform. The authors also posited that a predictable schedule and division between synchronous and asynchronous activities and some built-in flexibility could help improve the design of these online courses. In terms of engagement, the authors noted that students preferred live Zoom meetings, short weekly writing assignments, and weekly quizzes and felt more connected to their peers and instructors through live Zoom meetings, breakout sessions, and group blogging (Theodosiou & Corbin, 2020). In other words, these activities increased students' feelings of social presence and instructor immediacy. Mehrabian (1971) defined *immediacy* as physical and verbal behaviors that reduce the psychological and physical distance between instructors and students. A later section of the chapter includes a further discussion of instructor immediacy.

Martin and Bollinger (2018) conducted a study with 150 online students that examined learner-to-learner, learner-to-instructor, and learner-to-content engagement strategies. The authors suggested that, according to students, the most highly valued engagement strategies are learner-to-instructor engagement, including referring to students by name in discussion forums, sending regular posts, announcements, and email reminders, and creating a forum where students can contact the instructor with questions. Additional highly-valued strategies included creating a course orientation for students, including a checklist at the end of each instructional unit, creating short content videos that featured instructor presence, and providing feedback using multiple modalities, including text, audio, video, and visuals. Students also preferred it when faculty provided students with an opportunity to reflect on the course resources and their learning, posted grading rubrics for all assignments, and used various synchronous tools to interact with students, including polls, emoticons, whiteboards, text, audio, and video chat. These strategies engendered an increased level of engagement between instructors and students and, in many cases, an increased level of instructor immediacy and online presence. The concepts of instructor immediacy and online presence are closely related.

Instructor Immediacy Online

Immediacy is the students' perceptions of the instructor's abilities to communicate and to reduce the psychological distance between the instructor and the student (Ramlatchan & Watson, 2020). Research suggests that relationships exist between immediacy and learning outcomes, including perceived learning, affective learning, and cognitive learning (Witt et al., 2004). Witt et al. (2004) examined previous

studies about the relationship between immediacy and positive perceptions and outcomes for students and distinguished between instructor nonverbal immediacy and verbal immediacy. Nonverbal immediacy may include eye contact, smiling, affirmational head nods, gestures, relaxed body posture, leaning forward, and vocal variety. In contrast, verbal immediacy comprises word choices, syntactic structures, and explicit expressions of liking or closeness. The meta-analysis by Witt et al. (2004) revealed a substantial positive relationship between overall instructor immediacy and overall student learning. The authors also discovered positive correlations between instructor nonverbal immediacy and overall learning as well as between instructor verbal immediacy and overall learning. However, the authors point out the strong possibility of one or more moderating variables present in these studies.

Some techniques related to increased immediacy and student perceived engagement among student peers include virtual student lounges, student introductions/icebreakers, students' collaboration on assignments, student peer-reviews, student interactive presentations, student-led or student-moderated discussion, student profiles, and students posting audio or video discussions rather than written discussions (Bollinger, & Martin, 2018). Other techniques designed to increase immediacy and presence for instructors include the instructor appearing on camera, providing instructor photographs in posted profiles, and including the instructor on video while presenting content in live sessions and recorded interactions with students (Ramlatchan & Watson, 2019). Other research has revealed additional best practices for increasing online engagement, immediacy, and social presence.

Thorpe (2016) presented a group of critical competencies for online group facilitators, including the development of a shared purpose for the group, setting and maintaining a shared group culture, planning and preparing group interactions, knowledge of and ability to work with a wide range of online collaboration tools, knowledge of and ability to work with a range of group processes or methodologies, effective communication with online presence despite separations of time, distance, and culture, and the ability to reflect on professional practice. Specifically, Thorpe (2016) related online presence to the ability to facilitate online groups at a "deeply creative and generative level" (p. 83) and to introduce techniques and practices that reduce the effects of differences in time, geographical distances, and separations of culture. These practices require working actively to reflect the group's learning and process back to the group members and to improve the awareness of others by the participants (Thorpe, 2016). The concept of reflecting on practice has two elements that are relevant to instructor immediacy and online presence. First, best practices require online facilitators to reflect on their facilitation, seek evaluation and feedback from online group participants, and use those reflections to acknowledge and address identified areas for improvement. Faculty engaged in online facilitation must be willing to recognize gaps between their espoused values and beliefs about online facilitation and instructor efficacy and the feedback provided by their online students (Thorpe, 2016).

In addition to the need to be receptive to ongoing evaluation and feedback about online instructor facilitation, the second aspect of reflecting on practice relevant for instructors is "finding your online facilitator voice," enhancing the visibility of other participants in the group (Thorpe, 2016, p. 87). The objective is to invite them to create a social presence, transitioning participants from nonparticipation to active engagement as part of an identifiable group or team. Therein lies the opportunity for genuine collaboration as student peers (Thorpe, 2016).

Violanti et al. (2018) replicated several previous studies in a sample of over 1100 students in higher education settings. This study highlights immediacy behaviors, including smiling, body language, eye contact, vocal variety, and a relaxed posture. Prior research suggested that these behaviors positively correlated with student responsiveness and assertiveness, student perception of understanding, cogni-

tive learning, and reduced apprehension and anxiety (Violanti et al., 2018). The authors found that students' responses to perceptions of instructor's immediacy behaviors, i.e., the students' perceptions of the relative quality of the instructors' verbal and nonverbal communication behaviors, led to positive outcomes including student responsiveness, perceived understanding, positive learning, and reduction of apprehension and anxiety (Violanti et al., 2018).

Another aspect of instructor immediacy relates to recorded sessions rather than live student-instructor interactions. In recorded sessions, researchers examined the use of eye level versus high angle camera position and the availability of eye contact between the recorded instructor and the viewing student. Ramlatchan and Watson (2020) studied these phenomena in a sample of 108 randomly selected university students. The results showed that viewers perceived eye-level recordings that included direct eye contact with the instructor as better feedback (Ramlatchan & Watson, 2020). The implication for the online instructor is that recorded feedback and recorded presentations delivered asynchronously for students are impactful. Additionally, the high camera angle approach to recordings was considered less effective by students. Students prefer to look their instructors in the eyes.

MAIN FOCUS OF THE CHAPTER

Improving Instructor Immediacy and Online Presence

Johnson (2013) provided advice for improving instructor immediacy and online presence. His suggestions include the following: instructors being available to students through multiple communication methods, sending out a customized welcome message, responding to and engaging with student introductions in the course room, and using emoticons in communications with students. Additional tips included addressing students by name during interactions with them, conducting outreach with struggling students or those who have not engaged with the course materials, inviting students to dialogue with instructors, actively facilitating online discussion threads, and communicating with students using a unique online voice. In other words, students notice and remember particular catchphrases that are specific to someone's teaching; giving texture and dynamics to the instructor's voice creates interest and a lasting impression. Finally, instructors should consistently look for opportunities to improve engagement and interactions with their students (Johnson, 2013).

Another critical aspect of instructor immediacy online is behaving like a human being. While instructors do not have to be funny (but it does not hurt) and should not be friends with the students (to avoid potential conflicts of interest), instructors must be approachable and authentic with their students (Bowen & Watson, 2017). Students want to know that the instructor genuinely supports them and their learning. Instructors communicate this through learning their names, pronouncing them correctly, or asking for help to do so, talking about oneself as a person and not just as an instructor. Students enjoy stories and stories help facilitate learning, so ideally, instructors should be storytellers. The use of current events, community or campus happenings, local sports teams, or other areas of intersection between instructors and students allows instructors to utilize relevant, real-world examples in their meetings, discussions, forums, or blogs (Bowen & Watson, 2017).

Another aspect of immediacy and presence involves engaging students during synchronous online activities. Bowen and Watson (2017) suggested a few tips for use in online synchronous course rooms. Instructors can call on individual students randomly after an activity or short lecture and ask them to share

about the previous material. Instructors can ask students to submit a brief report in writing to reflect on an activity in the course room. These need not be submitted for a grade because the activity itself invites student participation. Other activities include using a digital or traditional whiteboard and a camera. Instructors should avoid running a virtual class with a predictable schedule involving the same activities every course meeting and every week. If the instructor varies the content and the types of activities provided, the course avoids becoming stale and predictable for the students (Bowen & Watson, 2017). These suggestions help make online course meetings more enjoyable, less predictable, more engaging, and increase the likelihood that students will avoid multitasking.

Instructor Immediacy and Credibility

The concept of instructor immediacy is closely related to instructor credibility (Ramlatchan & Watson, 2020). Credibility consists of the students' perceptions of the instructor's cognitive ability or competence, personal character or trustworthiness, and positive outlook toward the student or goodwill (Miller et al., 2014; Teven & McCroskey, 1997). Teven and McCroskey (1997) suggested that when students perceive their instructor cares about them, they are more likely to care about the course and more likely to pay attention to and learn the course material. This relationship emphasizes a need for the instructor to communicate in a caring manner and engenders the students' perception of care. Perceived care on the part of the instructor is an essential component of instructor credibility. Accordingly, Klebig et al. (2016) defined instructor credibility as a combination of "competence, caring, and trustworthiness" (p. 152). The authors verified a positive relationship between instructor nonverbal immediacy and instructor credibility. Self-disclosure and friendliness during student engagement increase perceived instructor immediacy and also increases instructor credibility (Miller et al., 2014).

Self-disclosure may suggest vulnerability and allow an instructor to discuss overcoming a challenge or struggling on an assessment. Communicating in this way creates a shared experience and may help students persist. Previous research suggested that relevant and timely instructor self-disclosure positively correlated with student participation and engagement (Cayanus & Martin, 2008). Instructor credibility played a critical role in facilitating successful instructor-student engagement and interaction (Finn et al., 2009). Wombacher et al. (2017) found that online presence and instructor credibility affect attitudes toward learning rather than affecting the learning outcomes. Unfortunately, it is somewhat difficult to disentangle the relationships between instructor immediacy, online presence, and instructor credibility based upon a handful of studies. Vallade and Kaufmann (2020) found that instructor credibility acts as a critical factor through which instructor behaviors affect student learning outcomes in the online classroom. Increased instructor competence, goodwill, and trustworthiness positively relate to student learning outcomes. The evidence suggests that these relationships exist, but the nature of these relationships is not fully apparent. The current evidence indicates that instructor self-disclosure, positive regard towards students, friendliness and encouragement, and intentional immediacy and online presence impact student perception of instructor credibility, learning, cognitive learning, and affective learning (Vallade & Kaufmann, 2020). More research is needed to clarify the relationship between instructor immediacy, instructor credibility, and student positive learning outcomes.

Student Online Presence and Student-to-Student Engagement

Students expressed strong preferences for peer interaction and engagement in online educational settings (Patch 2020, Pinkus, 2020; Theodosiou & Corbin, 2020). More significant commitment to learning occurs when students engage with and work in partnership with their peers (NSSE; 2014). Haug et al. (2019) stated that social interactions create learning in the online course room. The social construction of online learning allows students to create knowledge and gain meaning through a social constructivist process using example-based discussions, more complex group projects, mandatory participation exercises, team-based learning, cooperative learning tasks, and small-group or whole-class discussions. One common approach to student engagement with peers is through an asynchronous discussion, allowing students and facilitators to interact in the social environment outside of the boundaries of time limits, distance, or geography (Thomas & Thorpe, 2019). Online discussions encourage social interaction, allow discussion between peers, make it possible for individuals to collaborate on group projects, and constitute a central teaching strategy for online instructors.

When group facilitators posted frequently, instructor engagement positively predicted student engagement, and some students preferred instructor-led discussions over peer-only discussions because they perceived instructors as content experts more capable of keeping discussions on topic (Thomas & Thorpe, 2019). The ability to create a compelling student social presence in an online environment requires creating a supportive climate that encourages questions, skepticism, and the contribution of explanations by students. Kaufmann et al. (2016) suggested that students perceived a positive climate when instructors created a social presence, displayed availability, provided support, gave clear instructions, provided well-understood expectations, and possessed a solid command of technology. Instructors play a vital role in developing student social presence, but students also positively or negatively affected social presence online (Thomas & Thorpe, 2019). Research by Cole et al. (2019) suggested that peer communication and collaboration are critical aspects of online course engagement and indicated a connection between student interaction and student engagement in those courses. The instructor's role and the student's role are vital elements to the successful execution of online education. Another important element is the effective leverage of technology resources.

Technology as a Bridge

If students expect instructor online presence and immediacy, then it behooves instructors to improve their skill sets continuously. Upskilling is an essential requirement for HE instructors and technology is a critical bridge that connects the student and the instructor. It is the equivalent of the classroom, the office during office hours, or even the walk across the campus quad.

Advancements in technology impacts the online student in numerous ways, including increasing engagement, enhancing learning, increasing student focus and attention, and increasing student self-efficacy. The adoption of technology in the virtual classroom also drives the message with students that instructors care enough about them to learn continuously; despite stumbling a bit while learning a new platform or program, it denotes instructor vulnerability and transparency. Transparent instructor responses to technology can further enhance perceived online presence and immediacy, and technology adoption within the community of care contributes to student perception of presence and immediacy.

Technology and the Way Forward

Another critical area where instructors need to roll with the flow is the ongoing development of newer and more powerful HE technologies. While the current level of available technology makes live event webinars, virtual classrooms, shared communications, and increased levels of social presence and instructor immediacy possible, HE has only touched the tip of the technological iceberg. A variety of disruptive technologies have begun to impact HE today, including Augmented Reality/Virtual Reality (AR/VR), Artificial Intelligence (AI), Internet Based Learning (IBL) platforms, and Chatbots. While this list is inexhaustive, each of these technologies already impacts the HE online course room to some extent, and the effects are about to accelerate (Allen, 2020). While IBL platforms include Massive Open Online Courses (MOOCs) for reasons of brevity and focus, the authors deliberately ignored the subject of MOOCs in this chapter. For a review of MOOCs, see Valverde-Berrocoso et al. (2020). The current web-based virtual learning environments (VLEs) that many universities adopted set the stage for these innovative technologies. These tools improve digital literacy, foster creative thinking, facilitate communication, improve collaboration, and enhance problem-solving (Papanastasiou, 2019). These constitute the 21st-century skills required to transform information rather than merely receive it.

Augmented Reality/Virtual Reality and Professor Avatars

Fourtane (2021) described the concept known as *Classroom 3.0* as the transformation of university education for the 21st century and predicted that Augmented Reality/Virtual Reality (AR/VR) and 3D technologies such as holograms represented the next generation of digital learning. These technologies constitute the latest tools to assist the instructors of tomorrow. Medicine, physical sciences, engineering, and other areas adopted AR/VA in the course room for teaching hands-on skills (Rajeswaran et al., 2018). In addition, AR/VR applies to formal lecture-based teaching in Immersive Virtual Environments (IVEs). In IVEs, the Embodied Agent (EA), a *Professor Avatar* who acts as a virtual mentor, plays the instructor's part and can be customized to suit student preferences (Fitton et al., 2020). These anthropomorphized avatars emulate instructors and can simulate surprisingly complex social behaviors (Schiff, 2021). Previous research suggested that E.A.s could help students learn math and reduce math anxiety for high anxiety learners (Kim et al., 2017). These E.A.s were previously known as "pedagogical agents," and Schroeder and Adesope (2015) described them as virtual characters presented through multimedia environments to facilitate student learning. The authors noted that appropriate design is required for pedagogical agents to enhance student learning effectively and that prior research showed mixed results within learning systems. Nonetheless, these pedagogical agents can model or demonstrate skills, coach students, provide learning scaffolding, and be used in various instructional settings (Schroeder & Adesope, 2015). Pedagogical agents were the predecessors to E.A.s or *Professor Avatars*.

AR/VR in HE settings positively relates to student learning, student satisfaction, enhanced pedagogy, and improved content delivery. Plans are underway to integrate AR/VR learning applications through situated learning, inquiry-based learning, and gamification of learning (Saltan & Arslan, 2017). Prior research revealed that AR/VR improved learning retention, enhanced collaboration, improved student satisfaction, engendered learning performance, and increased student engagement (Saltan & Arslan, 2017).

AR/VR Impact on Immediacy and Presence

AR/VR (such as avatars) has increased student perception of presence. Non-verbal communication through eye contact, facial expressions, and gestures impacted the reported sense of the instructor being in the room (Gautam et al., 2018; Makransky & Lilleholt, 2020). Students could ask questions and be acknowledged and praised for their efforts in real-time. Further, when avatars of participants from varying locations were projected on the stage, many students commented that they “forgot they were not together in person.” The collaboration increased group problem-solving and learning outcomes. Although immediacy was not explicitly measured, the speaker’s nonverbal cues conveyed a majority of the communication. Accordingly, increased eye contact, gesturing, and facial expressions correlate to students’ perceptions of instructor competence in communication.

Similarly, holographic videoconferencing (HVC) increases instructor-student presence. Leuvano, DeLara, and Castro (2015) reported that 93% of students in an accounting course with an HVC instructor felt a presence similar to their expectations of a live instructor. Attendees also commented that it was easier to maintain attention throughout learning because the HVC heightened their enjoyment of the process and content.

Artificial Intelligence

Artificial Intelligence (AI) refers to computers performing cognitive tasks usually associated with human beings, particularly those involving learning or problem-solving (Baker & Smith, 2019). AI is not a single technology and frequently appears alongside machine learning, a technology used for the unsupervised classification and editing of large volumes of data or information (Zawacki-Richter et al., 2019). AI in HE, sometimes referred to as AIEd, is a fast-growing and emerging subfield of education technology. Many of the current applications originated in the computer science field. However, the use of AIEd in other parts of education is increasing. AIEd applications include intelligent tutoring systems, assessment and evaluation, and profiling and adaptive systems. Intelligent Tutoring Systems (ITSs) simulate one-to-one personal tutoring and make decisions about the learning path of an individual student (Luckin et al., 2016). In a meta-analytic review of fifty studies of ITSs, Kulik and Fletcher (2016) found positive results for learning outcomes, with 92% of participants receiving higher posttest scores than their counterparts who did not receive ITS tutoring.

Another application of AIEd includes big data and analytics to provide just-in-time feedback and assessment of student work. AIEd is integrated into learning activities to provide an ongoing analysis of student performance. This technology also allows for the use of predicted algorithms to establish probability of a student failing to complete an assignment or dropping out with surprising levels of accuracy (Bahadir, 2016). Students get near real-time feedback on assignments and submissions and can quickly adjust their future work or submission without waiting for an instructor’s marks or comments. Students appreciate this level of responsiveness, and it reduces the workload for instructors. In the context of on-line learning, this technology is also highly scalable because automated assessment allows for virtually unlimited growth in student enrollment.

Other AIEd systems include software to assist learning specific subject matter, personalized learning management systems, and ITS systems. Instructor-facing applications include software to automate administration, assessment, feedback, and detection of plagiarism. At this stage in AIEd, most of the work on teaching course content takes place in the Computer Science content area. AIEd also applies to

mathematics, statistics, medicine, writing, and reading comprehension. To provide one example, MetaTutor is the name of an AIED ITS designed to teach the human circulatory system (Duffy & Azevedo, 2015). Schiff (2021) argued that AIED is similar to online education itself because both utilize software and technology platforms, see technology as well-suited to providing high-quality instruction, challenge the role of instructors, and potentially disrupt traditional views on class size, pedagogy, andragogy, and other existing HE traditional wisdom. The use of AIED continues to accelerate with new applications in math tutoring through ITSs in China (Hao, 2019), and AIED applications have begun entering mainstream HE contexts with larger and more persistent groups of users (Nye, 2016). The use of AIED in applications will make it possible to map the relationships between various student factors and important pedagogical outcomes to ascertain their efficacy. Intense learning around student behaviors and outcomes is already taking place, and AIED should be a “major game-changer for future learning research” (Nye, 2016, p. 768). The changes coming in the next few decades will significantly shape both HE and society.

AI Impact on Immediacy and Presence

AIED will become part of the students’ overall perceptions of online presence and immediacy. The online environment attracts students who embrace learning irrespective of time, as students in the same course may live in multiple time zones and complete asynchronous coursework at unconventional hours of the day. AIED facilitates 24/7 responses, however, instructors still represent the face of the university to the student.

Internet-Based Learning Platforms

Internet-Based Learning (IBL) platforms include blogs, wikis, YouTube, and social media sites. Instructors and students utilize blogs as an effective tool for reflective writing, a journal to record ideas, a collection of resources, and a platform for conversation with instructors and students (Yadav et al., 2017). Blogs can also connect instructors and students in blended and hybrid environments. While Blogs may be confused with discussion forums, there are significant differences between the two platforms since discussion forums are shared community spaces and blogs are personal spaces (Yadav et al., 2017). Wikis are collections of web pages that allow user-generated content and create a space for collaboration, writing, and idea sharing. The use of Wikis allows instructors and students to observe the changes in a written task over time and to comment on and improve it while working in the shared space (Chu et al., 2017). YouTube allows instructors and students to participate in a blended learning environment and utilize rich content to improve engagement in educational settings. YouTube’s free access, accessible format, and searchability make it an essential student-friendly resource (Yadav et al., 2017). YouTube facilitates creation of online shared communities, participation in video co-creation, and engagement and interaction through the video comments section. YouTube increasingly serves as a platform to increase student engagement and practical learning (Orús et al., 2016).

Social Networking Sites

Social networking sites, including Facebook, Twitter, and LinkedIn, can be utilized as IBL platforms. These sites allow students to share knowledge and support resources collaboratively and provide feedback while engaging with other students. The challenges associated with these social networking sites include

professional etiquette, communication issues, technical challenges, and the training and development of instructors (Yadav et al., 2017). Instructors must be willing to take advantage of digital tools and allow students to access technology in the classroom or virtual course room. A 2019 report by Educause found that while most students wanted to access technology from their own devices, few instructors encouraged this access, and “policies that discourage or ban the use of technology in class may disproportionately impact underrepresented groups” (Gierdowski, 2019, para. 6). The use of e-books and reader apps allows any student with a cell phone to conveniently access their textbooks and provides them with cost savings. It is time to reevaluate the *put the distractions away* policies in traditional and virtual settings (Figueras-Maz et al., 2021). Technology and social media are part of students’ everyday lives, and they feel comfortable with technology and social media as part of their education.

Prior research into the relationship between social media and student engagement suggested that social media can play an essential role in online synchronous and asynchronous student engagement (George, 2017; Koranteng et al., 2019; Soffer & Yaron, 2017). The ubiquitous nature of social media site usage has directly impacted how students collaborate and communicate with instructors and peers. Social media site engagement promotes active learning (Seifert, 2016), improves communication (Cunha et al., 2016), and promotes information sharing between peers (Osatuyi, 2013). Social media site usage in HE increases perceived student social presence, instructor immediacy, and online instructor presence. While questions regarding both the safety and the security of social media persist, the efficacy and advantage of utilizing comfortable and familiar platforms to engage students in content-related discussions are compelling (Koranteng et al., 2019). Some popular uses of social media in HE include creating a Facebook page for the course and using it to broadcast updates and information for students, using a Facebook Group to stream lectures and host live discussions, using a Twitter feed as a class message board, and allowing students to utilize Instagram to post photo essays in response to assignments. Other applications include creating a class blog as a discussion board, assigning blog posts as writing assignments, creating a Pinterest board for the class, sharing university events and photos through social media sites, and creating subject-matter-specific interest-based Facebook Groups (West, 2021). Students are already comfortable using social media sites, so the question is, are the instructors comfortable using this technology to engage students?

Chatbots

Chatbots are communication applications that simulate human conversation through auditory or textual delivery. Sometimes known as conversational agents, intelligent agents, or dialogue systems, Chatbots have received an increasing amount of attention in educational settings, and several examples have been deployed (Yin et al., 2020). Chatbots combined AI and natural language processing to engage in conversation with humans through text or voice. While recent improvements in AI facilitated a dramatic increase in the use of Chatbots, the technology is not new, with the creation of the first Chatbot taking place in 1966 (Weizenbaum, 1966). The advantages of a Chatbot for use in educational settings seem apparent. After programming with an almost unlimited amount of knowledge and information on a subject matter of interest, a Chatbot can be available 100% of the time for student accessibility. Students need only log in or open the application, and the omniscient, omnipresent Chatbot appears. The Chatbot called BookBuddy helps learners with English (Ruan et al., 2019) and StudBot interacts with students to answer Academic Advising questions (Vijayakumar et al., 2019), while Chatbot Sammy tutors various courses (Gupta & Jagannath, 2019). Chatbots can engage students in one-to-one dialogues, build student

comprehension, raise student engagement, and increase student motivation to learn. These conversational agents facilitate collaborative learning and dramatically increase knowledge exchange among student participants (Tegos et al., 2019).

Social Media's Impact on Immediacy and Presence

IBL enhances student-student presence. Collaborative learning in group work is impacted by sharing the workload and through effective communication (Hassanian, 2006). Text, Facebook, and LinkedIn communication provide students a fast and often immediate way to set group meeting times, pose and respond to questions, and make decisions (McKinney & Sen, 2016). Student messages were more likely to be seen because students utilized the same platform (e.g., Facebook) for social networking and educational purposes.

Important Considerations

The increased use of emerging technologies such as AR/VR or AI increases online presence and immediacy and increases university and instructor ability to gather valuable data. What percentage of students choose a particular role in a discussion about ethics? What questions appeared in Chatbot most often, and how can the specific information be infused into the provided syllabus or learning community? The information gathered will allow the instructor to identify gaps in individual and aggregate student learning (Ji and Han, 2019). Further, emergent technologies may allow more immediate tracking of the impact of curriculum changes.

Administration-wide tools help monitor attrition patterns, retention, and risk of dropout across faculties, colleges, or the entire university (Zawacki-Richter et al., 2019). Many AIED systems specifically deal with concepts related to profiling and prediction, including predicting student dropout, predicting admissions decisions, predicting academic achievement, other classification and modeling, or other systems related to the use of educational data mining.

Technology brings a world of possibilities in online presence and instructor immediacy, along with the need to proceed cautiously. The perception of distance and anonymity in some social media formats may result in oversharing personal information (Williams, 2021). The increased use of social media with students creates a need for the administration to establish clear expectations. It is essential to determine the benefits of increased use along with ways to mitigate the risks involved. Training will be needed not only on the novel technologies to facilitate competence but also on the privacy and professional behaviors associated with the modalities (Li & Lefevre, 2020).

FUTURE RESEARCH DIRECTIONS

Additional research can help examine the efficacy of new technologies, online practices, social presence activities, and the various best practices outlined in this manuscript. If no other salient point emerges from this writing, let it be that evidence-based practices in online and virtual environments are the key to continued success in HE. New technology, new tools, and new practices must be proven effective through research and meaningful scholarship.

Online social presence, instructor presence, instructor immediacy, peer social presence, and the effective use of available technology are vital to higher education success. In a post-COVID-19 world, every HE professional's responsibility is to improve their professional practice, emphasize student-centered engagement strategies, and make online synchronous and asynchronous education more authentic, personable, interactive, and rewarding for students. Higher education has changed and will continue to change. The pandemic only increased the speed of a process already underway and brought sharp scrutiny to the traditional approaches in higher education that have remained essentially unchanged for more than 100 years. These include the sit-down, eyes-front classrooms, the instructor as a sage on the stage, students who feel disengaged, and technology platforms that trail behind the current standards for the industry and the students' everyday lives.

CONCLUSION

This chapter does not provide all the answers. Instead, it provides a starting point for essential questions, some suggestions for improvement based upon the current literature, and areas where a thoughtful and well-meaning instructor can pick up the thread and pull on it in order to progress to the next level of online social presence, instructor immediacy, peer interactions, and the use of the next wave of higher education technologies. AR/VR, EAs, AIEd, social media sites, and chatbots represent the next wave of technology-enhanced instructor immediacy and online social presence.

COVID-19 and the resulting paradigm shift in higher education and the subsequent disappointment felt by college and university students taught two important lessons. First, the instructor in the classroom engaging with students either in person, virtually, synchronously, or asynchronously is still vitally important to student engagement, satisfaction, and meaningful learning outcomes. Second, the effective utilization of technology is essential for scaling the delivery of higher education, connecting with students in dynamic and meaningful ways, enabling interactions, establishing peer and online instructor presence, and the mastery of vital 21st-century skills. Higher education has been changed forever and will not be returning to normal. Embracing higher education with a heightened instructor and online student presence and integrating the latest technological tools is the new normal, and higher education needs to roll with the flow.

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KEY TERMS AND DEFINITIONS

Artificial Intelligence (AI): Refers to computers performing cognitive tasks that are usually associated with human beings, particularly those involving learning or problem-solving.

Artificially Intelligent Education (AIEd): Is the application of various artificial intelligence technologies in educational settings and contexts.

Asynchronous Learning: Is the online delivery of education in an available anytime format with no prearranged meeting schedule. Examples include recorded videos that are available for access on-demand by students.

Augmented Reality/Virtual Reality (AR/VR): Refers to a group of technology tools including A.R. and V.R. A.R. typically includes a real-life view of something and then projects or inserts images onto a screen or viewer. V.R. immerses people in experiences, often utilizing additional technology hardware such as headsets.

Chatbots (or Bots): Are communication applications that simulate human conversation through auditory or textual delivery. Sometimes known as conversational agents, intelligent agents, or dialogue systems, Chatbots have received an increasing amount of attention in educational settings.

Embodied Agents (EAs), a.k.a. Pedagogical Agents: Are a kind of *Professor Avatar* who acts as a virtual guide or mentor for students and can be customized to suit their preferences.

Instructor Immediacy: Is the students' perceptions of the instructor's communication ability and ability to reduce the psychological distance between the instructor and the student.

Online Presence: Is the presence of the instructor and students in the online course room or other aspects of the students' online learning environment. Online presence is a subcategory of social presence.

Social Presence: Is the degree to which a person is perceived as a real person in mediated communications.

Synchronous Learning: Is the online delivery of education in real-time that typically involves a prearranged class meeting schedule. Examples include online required class meetings.