

# Establishing Social, Cognitive, and Teaching Presence in Online Learning—A Panacea in COVID-19 Pandemic, Post Vaccine and Post Pandemic Times

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## Abstract

The COVID-19 pandemic has allowed instructors, academicians, and administrators working at institutions of higher education to re-evaluate and re-envision teaching and learning processes. While literature surrounding issues associated with transition to online learning and students' satisfaction with online courses has started to emerge, there is paucity of work that addresses the gap in research—importance of faculty presence in online classes and how to build strong presence to create meaningful learning experiences for students especially as we continue to adapt to new normal and prepare for post-COVID world. With the primary focus on faculty presence in online classes, this article provides a comprehensive analysis of the effect of the pandemic on teaching and learning and how it influenced academic institutions worldwide. The importance of social, cognitive and teaching presence in online learning and how instructors can work towards building presence in online classes have been presented. The community of inquiry (COI) framework and how instructors

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can integrate this framework to build faculty presence in online classes has been described. Furthermore, research/evidence-based tips to engage learners and provide optimal learning experiences is presented. These findings may help faculty in applying COI to teaching and learning practices in the post-COVID educational world. This work is of value to faculty, administrators, and instructional designers who are preparing to teach and facilitate academic processes during the pandemic, post-vaccine stage and in the post-pandemic world.

### **Keywords**

online learning, social presence, cognitive presence, teaching presence, community of inquiry, COVID-19/pandemic, post-COVID/pandemic, technology/education/pedagogy

### **Introduction**

Institutions of higher education, faculty and students across the world witnessed the toughest year in their academic journey. To minimize or curtail the rapidly spreading COVID 19 virus, the world nearly came to a standstill and several limitations were imposed on business offices, entertainment venues, and other areas of work and life. Academic institutions ranging from pre-schools to doctoral degree granting institutions had to make a rapid switch to online education, partially or completely to reduce contact and continue education (Özüdoğru, 2021). This rapid transition with limited or no training led to additional challenges for students, faculty and families. Many individuals faced these difficulties while they were struggling with the new public health crisis. Permanent loss of family members, friends, and financial hardships further added to the already complex situation. Educationally, evidence suggests that students might misunderstand/misread the course and assignment expectations, struggle to manage their time due to work and family commitments (Davis et al., 2019), and experience loss of real connections with student, colleagues and their faculty, which in turn leads to poor performance in exams and course assignments.

Students' performance issues can be exacerbated if instructors lack training, have weak technological skills, and limited time to create engaging learning resources while teaching in an online medium of instruction (O'Doherty et al., 2018). The barriers to participate in face-to-face learning, engage in team projects, presentations and other tasks, may lead to frustration and contribute to growing anxiety, apprehension and loss of personal connection with faculty and students (Gillett-Swan, 2017). As COVID hit, faculty and staff were provided with a plethora of resources within a very short period. Faculty struggled to pivot to online teaching and efficiently use different technology tools. Similarly, learners felt they were in an isolated place trying to find solutions and completing the work assigned as well as possible.

Shift to completely online medium of instruction, institutions, struggle with online course material, and lack of equipment to work on online courses left a deep

psychological impact on students (Apriyanti, 2020). The COVID-19 crisis has had an unprecedented and extensive impact on delivery of education/academic programs impacting a wide number of students' across the globe (UNICEF, 2020; United Nations, 2020). Data from recent reports suggest that the pandemic has affected approximately 1.6 billion learners in more than 150 nations and globally. Worldwide closure of institutions have had adverse impact on 94percent of students' and more importantly up to 99percentof students' in "low and lower-middle income countries" (United Nation, 2020). COVID-19 is here to stay, and it has become increasingly clear that students need support and a strong instructor's presence in classes to succeed in their academic endeavors. Thus, faculty must adapt to new ways of teaching to engage students and build a strong presence in the classroom (online or face-to-face) so they can successfully continue or complete their education and graduate to pursue their career.

Increasingly, the body of evidence indicates problems faced by faculty in online teaching, issues surrounding adoption of online learning methods, and challenges encountered when quick transition occurred to online or hybrid medium of instruction. However, there is a scarcity of literature that addresses the importance of strong faculty presence in online classes and how to build strong social, cognitive, and teaching presence to enhance teaching and learning opportunities for students. This article examines the effect of the COVID-19 public health crisis on teaching and learning processes across the globe and presents a discussion on the importance of faculty presence and how instructors can work toward building presence in online classes.

## **Effect of COVID-19 Pandemic and Adoption of Online Learning Methods**

COVID-19 pandemic has drastically changed how education is delivered across the world. The pandemic has resulted in an almost universal move to online learning to continue education. As things continue to evolve, universities and schools must adapt to new realities and move forward with caution to meet the needs of learners. Said (2021) reported interesting statistics about growth in online and distance education. In 2019, the number of students taking at least one distance learning class was reported to be 34.7percent (DAAD, 2020), however, once COVID hit and nearly 1.2 billion students were out of the classroom, there was a universal rise in online learning. It has been estimated that global investment in online education will reach \$350 billion by 2025 (Said, 2021; World Economic Forum, 2020).

The National Council for State Authorization Reciprocity Agreements (NC-SARA), a private nonprofit organization reported that there is a 93 percent growth in student population that enrolled in completely online classes. When compared to 2019, data clearly shows that 5,825,723 students enrolled in exclusively online medium of instruction/classes which is a significant increase from 3,016,944 in 2019 (Lederman, 2021). A recent survey of 1702 faculty members and administrators at

more than 950 academic institutions found that with COVID crisis, 71percent of participants reported increased use of e-learning material and 81percent indicated that use of digital material will either increase or remain same post-pandemic. This is a significant increase given only 25percent of institutions utilized digital resources. Approximately 70percent of the faculty reported change in teaching and learning methods and nearly 47percent felt that post pandemic teaching will look a lot more different and they may not return to their pre-pandemic approach (Cengage Group, 2021). It is also important to note that faculty has undergone training programs and are more comfortable using digital tools and interactive technology (such as learning management system, zoom, MS Teams, and other tools) which they intend to continue even when pandemic is over. Another study reported that students clearly feel the need to take ownership of their own learning so they can continue to utilize e-learning tools and other resources available to them to continue learning (Singh et al., 2021).

With growth in online education during the pandemic, in the post vaccine stage and once the pandemic is over, there is an increased need to examine effective methods to provide meaningful and engaging learning opportunities for students. Major factors that have an impact on students' experiences in online classes include (a) instructor involvement and feedback in online courses (b) online tutorials on how to use class platform and how to complete group work (c) timely communication and clear instructions (d) variety of assessment methods and tools being used in classes (e) informing students how to get support if needed, and (f) support to students and providing them with opportunities so they are able to interact virtually in an online environment (Hjelsvold et al., 2020; Said, 2021).

There are a multitude of studies that have emphasized the importance of students' mental health and how faculty can work towards creating a system of support for students in online classes/environment (Singh et al., 2021; Terada, 2020). Educational institutions are the de facto mental health systems for students. Closure of these institutions in combination of student isolation, unfavorable economic conditions and increasing COVID cases has exacerbated mental health issues for students along with a surge in mental health cases. It is noteworthy that mental health issues and stress can alter the chemical and physical structure of the brain which may lead to loss of attention, ability to grasp and memorize details and concentrate on important topics. This may have adverse impact on academic achievement of students (Terada, 2020).

Faculty across academic institutions (and the world) have to adopt a very methodical approach to build presence in their classroom (online/virtual) to support their students both academically and emotionally. This is particularly important because some students are ready for the new academic year while others may still be struggling and recovering from the loss and anxiety caused by the pandemic. As the battle with COVID-19 continues, several accommodations need to be made to traditional face-to-face course delivery methods. Universities and other institutions will have to accept the new norm and adopt digital and virtual content delivery methods in their day-to-day practices. Online learning especially hybrid and blended medium of instruction is expected to emerge as a panacea

or a favorable solution to problems that instructors face as they work on making the course content accessible via online as well as face-to-face.

## **The Importance of an Instructor's Presence in Online Instruction**

The relationship between faculty and student is extremely important for the students' success in most educational situations including online. Prior research highlights negative consequences associated with psychological remoteness or relational distance between faculty and students in a classroom environment. This also holds true for online environments where physical distance between faculty and students can further aggravate the situation (University of North Texas, n.d.). The authors of this study have distilled evidence from literature that demonstrates the importance of instructors' presence in online instruction.

### *Building a Sense of Online Community*

It is widely recognized that in a virtual learning environment, merely forming a discussion group, providing reading materials, assignments, and the technology for it to function does not lead to a deep and meaningful learning experience. To enhance students' learning in an online learning environment, instructors need to create an effective learning community where students feel connected with their peers and the faculty/teacher, and engage in well-designed collaborative learning assignments/tasks (Feng et al., 2017; Sanders & Lokey-Vega, 2020; Tolu & Evans, 2013). Scholars/advocates in online learning stress that a strong feeling of community among students is crucial, not only to increase academic benefits but also to encourage cooperation and commitment among students and for achieving student goals (Dixson, 2015). Berry (2019) suggests that students who collaborate actively in the group space, as part of the learning approach, are able to better explore concepts in depth, have enhanced learning experience, increased confidence, participation, satisfaction, and greater sense of achievement.

### *Dealing with a Sense of Isolation*

As COVID-19 cases continued to increase and students had to move to online instruction, they were cut-off from in-person face-to-face interaction. This not only led to feelings of isolation but also resulted in poor performance on class assignments and exams. Instructors' presence in online classes can help in bridging the distance and reduce feelings of isolation among students (Creasman, 2012; Martin et al., 2018). Evidence suggests that students appreciate clear directions on course assignments and value prompt feedback from faculty (Martin et al., 2018; Sheridan & Kelly, 2010) and team members in case there are group projects. Advancements in technology can help increase the feeling of connectedness even if students are attending classes online. This ability to connect with students

virtually also builds a sense of being there or being present for students when they need support. It is important to note that strong faculty presence can reduce feelings of isolation and help them in improving their academic performance (Samuel, 2015).

Recent research suggests that students are frustrated and express disappointment when faculty fails to establish presence in online classes. They feel that faculty does not care and report being isolated when faculty did not build stronger bonds in the virtual setting. Students reports feeling a greater sense of faculty presence when technology enabled tools are used to communicate in online classes. Students also reported higher levels of engagement when faculty included audio and video chats or live presentations using zoom or other web conferencing tools. Students also felt connected when faculty posted regularly in online chat rooms, encouraged students to ask questions and provided detailed responses on student course work (Jaggars et al., 2013).

### *Interpersonal Interaction Enhances Quality of Course*

Interpersonal interaction between faculty and students may enhance students' academic performance on assignments and tasks. Students in courses/classes where faculty had minimal or low interaction with class had a lower grade when compared to classes where faculty interacted with students in a more regular fashion. Clarity of instructions, ability to use technology, and well written assignments led to improvement in quality of courses (Jaggars et al., 2013).

Research suggests that students appreciate integration of learning management systems and other technologies that could provide a variety of teaching and learning methods (Jaggars et al., 2013). Beginning in spring 2020, instructors have utilized technology to support interpersonal interaction as it allows students to virtually meet and be with their instructor even if they are not physically present in the same classroom. Interpersonal interaction facilitated by technology enables students to achieve optimal academic outcomes in online classes. Such interactions also help in establishing a "knowledgeable and welcoming" presence in online classes (Jaggars et al., 2013). Due to rapid transition when COVID hit, many faculty struggled to achieve effective integration of technologies and a wide variation among course delivery methods was noted. While few instructors used technology to its fullest potential, others failed to incorporate technology into their courses. Some faculty included discussion posts and assignments that rarely contributed to student learning. This left students confused as they could not see a clear link to how these assignments helped them in meeting course learning outcomes. Thus, one can see the value of interpersonal connection and how it can help in enhancing quality of online courses and academic performance of students in these classes.

### **Community of Inquiry Framework**

Initially presented by Garrison et al. (2000), Community of Inquiry represents a learning process through interaction of three core elements: social presence, cognitive

presence, and teaching presence. With solid evidence behind this framework, prior research has consistently demonstrated that intersection of three presences creates a strong positive learning experience for students in the online medium of instruction.

Social Presence is the instructors' or participants ability to project himself or herself as a real person in a classroom environment. This element not only supports cognitive presence but also facilitates critical thinking processes in a community of learners. Effective social presence in an online teaching environment allows learners to express themselves freely, build connections, and function as a cohesive group. This in turn leads to meaningful and engaging learning experience (Garrison et al., 2000; Purdue University, 2020).

Cognitive presence, an element most basic to success in an academic journey, focuses on learners' ability to construct meaning through continuous dialog and reflection. It has been suggested that the community of inquiry framework intends to utilize a strong foundation built by teaching and social presence to stimulate cognitive presence in courses. It is noteworthy that cognitive presence is deemed as "the ostensible goal" that community of learners aim to achieve in higher education (Garrison et al., 2000; Purdue University, 2020).

Teaching presence, the third element of the framework, includes design, facilitation, and direction of the class to obtain optimal learning outcomes. Design, delivery, and creation of course content primarily falls under faculty role and thus efforts should be made to exercise caution while selecting appropriate course delivery methods. Course facilitation is a shared responsibility between faculty and students and this especially holds true for when technology tools are used to deliver classes. Effective teaching presence can improve social and cognitive presence which in turn can lead to better educational outcomes (Garrison et al., 2000; Purdue University, 2020).

## **Integrating the Community of Inquiry Model to Build Faculty Presence in Online Classes**

Scholars/advocates in online learning have emphasized that a strong feeling of community among students is crucial, not only to increase academic benefits but also to encourage cooperation and commitment among students and for achieving student goals (Dixson, 2015). However, it has been noted that cultivating a sense of community can be difficult in online instruction. Lack of collaboration, communication, motivation, in-person participation, and social presence in the virtual medium of learning leads to increased frustration, disengagement, and lower levels of learning among many students. Additionally, it has been witnessed that in the online medium of instruction some instructors may neglect the community aspect in their courses since they don't see and interact with learners regularly (Berry, 2019; Dixson, 2015).

These authors believe that a sense of community, which is built through communication and collaboration and "is connected to student engagement" is an important element to success of online students. When the student has a sense of community,

they understand the purpose of learning, can contribute, can connect with other students, and can feel a sense of owning their learning. Rovai (2007) indicated that instructors who embrace supportive methodologies (such as cooperative work, group interaction, and collaboration) and create conditions where students can express their thoughts openly and present alternative viewpoints may help students feel connected through a stronger sense of community (Berry, 2019).

By incorporating the Community of Inquiry framework in course design online instructors can help students to overcome the challenges of online learning as well as enhance the student's sense of belonging. This framework/model is very useful for online instructors because it essentially restructures academic experience based on thinking and learning collaboratively or as a team. This model allows online instructors to apply research-based pedagogy to the practical task of curriculum design, development, and sequencing of educational experiences to optimize learning. Garrison, Anderson, and Archer developed this model in 2001 and they stated, "the community of inquiry is a cohesive and interactive community of learners whose purpose is to critically analyze, construct, and confirm worthwhile knowledge" (Sanders & Lokey-Vega, 2020, p. 46). In this model, the community is fostered by three interdependent elements: social presence, teaching presence, and cognitive presence (Berry, 2019). Research has shown validity, success, and efficiency of the COI framework in both online and on-campus learning environments (Berry, 2019; Dixon, 2015; Sanders & Lokey-Vega, 2020).

Social presence helps in creating an environment of trust and open dialog that supports interaction, collaboration, and a questioning predisposition. Students in a community of inquiry must feel free to express themselves openly in a risk-free manner (Dixon, 2015; Sanders & Lokey-Vega, 2020). As we know, important dialog begins when students can communicate freely. By using course announcements frequently, posting messages to students, providing opportunities to introduce each other, and establishing expectations for the class, instructors can enhance the positive learning environment in online learning. Other ways that can be used to facilitate this include incorporating concepts such as building trust online, promoting informal relationships, and modeling appropriate discussion comments. Authors of this project believe that including introduction post where students post pictures in addition to text and sharing personal stories about pets or family members will help in building a personal connection with colleagues and other students. This may help in building an online community and encourage other students to participate in discussion. This is particularly important post-COVID world as higher number of students choose online education/classes and may not get an opportunity to meet with other students' in-person (Dickinson, 2021).

Researchers in the field of higher education have acknowledged the importance of social presence and interaction in the educational setting. When educators provide opportunities for students to interact within the online learning community learners tend to feel more connected with their peers and overcome the feelings of isolation (Dixon, 2015). Table 1 presents an evidence-based approach on how faculty can build social presence in an online environment in post-vaccine and post-COVID world.



“Cognitive presence includes the practical inquiry model (PIM), which moves students’ thinking/discussion from a triggered event that makes them aware of some new idea, concept, or problem to the exploration of the new information, integration of ideas, and finally to resolution of the problem” (Dixson, 2015). Fiock (2020) states that instructors can improve learners’ cognitive presence through the four phases of the PIM, namely the triggering event, exploration, integration, and resolution. Online instructors can enhance their student’s critical thinking and learning skills by allowing students to enquire learning activities, brainstorm, discover and openly discuss problems, and allowing students to reflect on the learning process. Some of the strategies that can be incorporated to enhance the cognitive presence in post-vaccine and post-COVID teaching include, allowing learners to self-select topics that they are curious about to learn and explore, involving them in critical analyzing discussions, establish course rules to enhance a positive environment, and encouraging students to share resources related to course topics (Fiock, 2020; Richardson et al., 2010). Going forward, students should be encouraged to take ownership of their own learning and allowed to participate in discussion or other activities as co-host. They should lead/co-lead major assignments/discussions, post questions, and facilitate further discussion. Further, they should be invited to summarize major points raised during discussion and complete summary assignment (Dickinson, 2021).

**Table 1.** Evidence Based Approach – Building Social Presence in Online Classes.

Feature	Methods
Welcome Note	Send welcome note to all the students. Helps in building virtual presence.
Introduction	Include a personal introduction (video and description) and provide an overview of the class. Use of video and pictures adds a personal touch to classes.
Communication	Timely communication, problem solving communication and response to emails, virtual chat sessions and regular use of discussion questions shows that faculty is active in online classes.
Blogs and Social Media	Use of blogs and social media such as twitter and face book for class help in establishing connections between faculty-students, students-students, student-world, and student-content. Caution must be exercised while using social media platforms.
Personal Stories	Students should be encouraged to share personal stories (appropriate stories) and these activities can be included as ice breaker activity in the online classroom.
Timely and Continuous Feedback	Feedback on course work and assignment is extremely important in online (or any) class. Because students are physically distant, they want to know how they are doing at any given point. This will enhance students’ academic achievement.

(Adapted from Eight Ways to Increase Social Presence in Your Online Classes).

Table 2 presents an evidence-based approach on how faculty can build cognitive presence in an online environment in post-vaccine and post-COVID world.

Richardson et al. (2010) state that when working with students teaching presence is important to bring all the elements together and make sure that the community of inquiry is useful. Teaching presence is achieved by thoughtfully designing the course, facilitating discourse among participants, providing direct instruction, and providing constructive feedback to learners. It is important to note that designing and structuring starts before the course begins. During the process, instructors thoughtfully plan active learning activities, materials, methods, evaluation, structure, and interaction. During the facilitation process, instructors play the role of moderators and ensure that to motivate learners, encourage their participation, model discussion, guide them to reach higher thinking levels, and assess the effectiveness of overall

**Table 2.** Evidence Based Approach—Building Cognitive Presence in Online Classes.

Feature	Methods
Communication	Plan and begin your class with the end in mind. Clearly communicate expectations and learning outcomes/objectives of the class.
Mix of Assignments	Include variety of tasks and activities in classroom and provide options so students can pick and choose their own activity based on their interest.
Team work and discussions	Include team-based activities and encourage active discussions in classroom. Design discussion questions with your audience in mind, build connections with course content, and previously learned information.
Clear grading rubric and expectations	Use clear rubric to grade assignments and outline expectations for assignment and tasks early on the semester.
Respect diversity	Allow students with diverse perspectives to express their opinion freely and demonstrate support for their thoughts/views.
Make connections	Ensure that students are able to see clear connection between online class, course assignments and their field of work/expertise.
Invite Feedback	Ask students for feedback and make changes based on the feedback. Allow students to participate in sessions such as “how to improve course/class” via technology through zoom or adobe breakout sessions. Clearly communicate how changes were made based on the feedback received from students. Include examples of completed work so students are able to see what is expected of them.
Include examples	Include examples of completed work so students are able to see what is expected of them.

(Adapted from Online Cognitive Presence, n.d.).

**Table 3.** Evidence Based Approach—Building Teaching Presence in Online Classes.

Feature	Methods
Personalization	Create a personalized class platform and share information about yourself through pictures, stories and other medium. Invite students to share information as well.
Open office hours and regular check in	Schedule online open office hours through zoom or online chat and invite students to participate. Reach out to students to see how they are doing and how one could facilitate teaching and learning for them. This will help students especially if they fall behind in their class work.
Activities to raise awareness of technology	Include initial activities that would allow students to become familiar with technology and software that is being used in the class.
Meetings via zoom and use of webcam	Arrange regular zoom meetings and use different features of zoom such as raise hands, break out rooms to interact with students. Encourage students to turn on their webcam so other colleagues/students can see them during meetings.
Acknowledgment and peer support	Acknowledge students work, their progress and praise them openly. Provide support to students especially if they struggle to complete assignments and tasks. Praise students and encourage them to be supportive of their peers.
Join virtual meetings early	Join the meeting room early to connect with students in case they join early as well. This will also help in building connections with students.
Clear expectations	Assignments should be clear. Students should be aware that they can reach out to faculty (synchronously or asynchronously) if they need support.

(Adapted from Online Teaching Presence, n.d.).

learning process. In online instruction direct instructions start with presenting information, summarizing major discussion items, checking understanding through evaluation, providing timely response, clarifying misunderstandings/problems, using variety of resources to provide information, and helping learners with problems they face as they complete the class (Fiock, 2020). Table 3 presents an evidence-based approach on how faculty can build teaching presence in an online environment in post-vaccine and post-COVID world.

### **Integrating E-Learning Tools/Learning Management Systems (LMS) to Build Presence**

Learning Management Systems (LMS), such Desire to Learn Brightspace, Moodle, Google classroom, and Blackboard can not only help in organizing the content in an

intuitive and user friendly way, but also allow instructors to build strong presence in online classes. By employing LMS to create a “delicate combination of empathy and simplicity”, instructors can build a sense of community, enhance participation and monitor user progress on assignments and tasks (Schroeder, 2020). Instructors must carefully examine different features in LMS and work towards creating a uniform student centered design so there is consistency and learners can easily find information related to the class. Feeling of isolation and lack of real connection is a common concern in online learning. It should be noted that learners do not want to engage with a computer, instead they look for connection with their instructor, classmates and content. Tools such as Edpuzzle and Seesaw can be easily integrated in LMS to create a more personalized experience. Flipgrip videos can be used to hear instructors’ and other students’ voices asynchronously. Additionally, effective use of discussion boards allows students to engage in a dialog and reflect on important course related topic (content) (Schroeder, 2020). Table 4 presents an evidence-based approach on how faculty can utilize LMS to build presence in an online environment in an online environment in post-vaccine and post-COVID world.

**Table 4.** Integrating E-Learning Tools/LMS to Build Presence.

Tools	How to use the tools?
Content	The content feature can be utilized to organize all coursework into several modules and enable documents and material to be added to each module. This feature also allows instructors to upload relevant videos and links. Usage of the content feature and dividing the content into modules help with step-by-step progression and it adds to the clarity of the content.
Calendar	This tool enables students to view and keep track of their discussions, quizzes, case studies, and assignments. This calendar can be available on the homepage of the course so that the students can review the timeline as soon as they log into the online program platform.
Frequently Asked Questions	This section let students see common questions with the answers posted by the instructor. It also allow students to post their questions and receive answers/feedback from the instructor and their peers.
Announcements	This tool can be used to post welcome messages, updates, changes, and other important items related to the program. Usage of announcements allows instructors to post reminders about assignments and tasks
Chat	The chat feature in LMS can be used to interact with the students on a regular basis. Special arrangements can be made to accommodate students who are not available during the day due to their busy schedules or personal reasons.

(continued)

**Table 4. (continued)**

Tools	How to use the tools?
Groups and Drop box	The group tool allows the instructor to create and add students to different groups. Drop Box helps students in submitting reports and assignments in their groups and seek the instructor's feedback.
Discussions	This tool can be used to encourage discussion, peer feedback, post questions, and share text and videos. The small group discussion feature helps student teams in case they face problems while working on assignments and reports.
Gradebook	The gradebook tool can be used to post grades and provide feedback on team and individual assignments. Grades need to be updated in a very timely fashion so that students can see how they are progressing in the class.
User Progress	The user progress tool helps the instructor check the students' login history, their grades, and overall performance in the class. Reminder emails can be sent to students who did not complete work or missed online meetings.
Library	The online learning tutorial can be used so students are able to access data bases and resources from a distance. Access to articles and peer-reviewed sources from a distance help the online students as they work on projects.

## Discussion

This article presented a comprehensive analysis of problems faced during the 2020/2021 pandemic and how educational institutions across the globe have had to adapt to meet the needs of students and reduce spread of the virus. Efforts have been made to clearly describe the importance of instructors' presence and how instructors can utilize community of inquiry framework to build a sense of community and belongingness in online medium of instruction. Furthermore, evidence based tips presented here allow instructors across the world to examine their current practices and how they can work towards creating an inclusive culture which allows students to express themselves freely even in the online environment. This article highlights social presence, teaching presence, and cognitive presence as essential elements to facilitate successful educational experiences for online learners. The technology used in an online learning environment can facilitate a community of inquiry model.

A report by the United Nations indicated that approximately 98.6 percent of the learners across different age groups and at different stage of their academic career were affected by the pandemic. This represented nearly 1.725 billion students in more than 190 countries (Pokhrel & Chhetri, 2021; United Nations, 2020). While instructors made several efforts to quickly move to online learning, evidence suggests

that students' academic performances declined. This problem was further exacerbated by technology glitches, lack of connection between faculty and students in the online medium of instruction, and other personal problems that students were facing (such as loss of a family member or loss of their job) (Edsource, 2020).

It is important to note that multiple factors affected experiences of online students. These factors include, but are not limited to, minimal or no sense of community, lack of motivation, feeling of isolation, confusing course design, and support system available at institutions, individual academic programs and instructors level (Brown et al., 2015; Farrell & Brunton, 2020; Zembylas et al., 2008). As institutions adopted emergency landing system through a variety of online instructional platforms, faculty struggled to create engaging environments for new online learners (Pokhrel & Chhetri, 2021). Findings of this article indicate that the community of inquiry framework and e-learning tools can play an important role especially as the world deals with the pandemic, moves into post vaccine stage, and prepare to come out this public health crisis. Administration should work towards gauging readiness and preparation of both students and faculty for the new normal and online learning. In order to engage learners, faculty needs to adopt a growth mindset and be open to use of technology tools and innovative pedagogical methods in current times (and in near future). One must remember that 'one size fits all' does not work in educational settings. However, if properly implemented, online learning has the potential to meet the needs of traditional learners, non-traditional adult learners, and diverse learners (Singh, 2019).

Instructors can build a stronger social and teaching presence by utilizing new information and technology tools. Online platforms such as Desire to Learn Brightspace, Blackboard, Canvas, Zoom, Microsoft Teams, and Google classroom can help instructors and students. These are some of the e-learning tools that allow students-faculty, and students-students to hold meetings, store material, organize workplace chat, and share of content such as word, pdf and video files. Such tools can help in improving overall quality of online learning experience (Pokhrel & Chhetri, 2021). Thoughtful use of self-graded quizzes and assignments can help students in tracking their progress quickly (Singh et al., 2021). Different learning management systems and software allow students to monitor their own attendance, work, and overall grades, which in turn can lead to a more productive learning session for students. Modern LMSs can help create a cohesive and interactive community of learners in the online environment through use of welcoming features, announcement tools, a course calendar and sharing feedback in real time.

Once teaching and social presence are established, instructors can utilize team-based activities, assignments that are directly related to the field of work (such as case studies), problem based learning to encourage higher order thinking in students. Such activities will help students in analyzing the information and create or co-create a solution for real world problems in their respective teams. Pokhrel and Chhetri (2021) highlighted how the flipped classroom strategy, where instructors provide learning material (manuscripts, literature, videos and relevant resources) prior to class meetings, can help in

creating engaging learning experiences for online students. If students have access to learning material in advance, online meeting time can be used for discussions and deepening their knowledge/understanding of concepts that are included in the material. These online sessions, facilitated by videoconferencing tools, can help in building critical thinking and problem solving skills.

In addition to teaching strategies noted above, it is also important to build a culture of assessment, ways to get feedback from students and parents/learning coaches (if needed), and methods to show that changes to classes have been made based on the feedback. This will allow students to see that faculty actually values their thoughts and is genuinely interested in working to enhance teaching and learning methods. Assessment of student work and timely response on assignments will help students in further improving their work especially if they are working on team projects. Application-based exercises that require critical thinking need constant supervision and feedback from instructors. Online chat sessions and pre-recorded zoom videos can be used to clarify confusion and problems that students encounter while working on application-based exercises. Further, the instructor can work with teams individually to ensure that members have enough support and guidance as they work on these exercises.

## **Conclusion**

The Community of Inquiry framework and technology enabled tools can help in creating optimal online learning experiences for students. By building social, cognitive and teaching presence, instructors can facilitate critical thinking, critical inquiry among students and meaningful discourse among students and faculty. Educators across the globe can apply the findings and strategies noted above to their academic practices and/or research to enhance curriculum design, delivery and development. As educators and academic administrators across the world learn to deal with challenges posed by the surging pandemic and beyond, they are challenged to utilize innovative course delivery to engage with students virtually. The COVID-19 pandemic has provided an opportunity to re-examine and re-evaluate current processes and think outside of the box especially for the post vaccine and post pandemic world. Online course offering, ed-technology, and e-learning tools enhance required education and can enhance the flexibility needed by adult and non-traditional students. Advanced features, in learning management systems, such as online chat sessions, mini-video presentations, zoom/videoconferencing tools allow instructors to provide immediate feedback and present important concepts to students.

The lessons learned during the pandemic should be utilized in the future. Instructors and administrators need high levels of preparedness to quickly adapt to changes and work towards using pedagogical approaches such as community of inquiry in their day-to-day practices. Technological and innovative educational methodologies will continue to enhance teaching and learning in the future.


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