

Chapter 13

Social Skills and Online Learning

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ABSTRACT

The concept of online teaching and learning is widely adopted by universities due to the pandemic of COVID-19, which forced them to shift from blending learning (including both direct and remote education) to exclusive online education. Technology has provided a multitude of tools, which can prove very useful in the hands of people who want to serve such a great purpose as education. During the days of the pandemic, where people are isolated, virtual community and virtual learning technology brings people together to experience a sense of educational community in the virtual world. This chapter introduces the reader to the importance for social skill training of the learning communities during times that online learning is the sole type of education, exploring methodologies, tools, and practices that can be used to counterbalance the deficiencies introduced by distance learning methods regarding social skill development.

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INTRODUCTION

The pandemic of COVID-19 has affected people and businesses around the globe, causing crises in physical and mental health, economy and societal welfare (Araújo et al., 2020). As a result, organizations, businesses and institutions of different industries, including education, were impacted as well. The discontinuance of physical presence of both instructors (teachers and lecturers) and students in the classroom caused, *inter alia*, operational issues to Higher Education Institutions (HEIs). HEIs, in order to tackle the effects of the pandemic, implemented remote education through virtual platforms (Izumi et al., 2020).

Increasingly, virtual technology is integrating into the educational field, where instructors and students interact virtually to communicate and produce academic results (Häfner et al., 2013). Courses may be organised in small to medium groups or take the shape of Massive Open Online Courses (MOOC), and are underpinned by tools such teleconferencing, Learning Management Systems (LMSs) or Digital Collaboration Platforms (DCPs). HEIs were early adopters of such technology and implemented for blended learning, combining traditional learning with online learning and using digital tools, systems and platforms for learning purposes (Garrison & Kanuka, 2004; Gray & Tobin, 2010). Therefore, the concept of online teaching and learning is widely adopted by educational institutions organizations, and students. However, the pandemic of COVID-19 forced them to shift from blending learning, which includes both direct and remote education, to exclusive online education.

These unusual conditions resulted in operational and economic turbulence and confusion of institutions and students, respectively (Weick & Sutcliffe, 2015). Consequently, HEIs came up with new ideas concerning virtual education and implemented innovation in the remote teaching process, including (a) guaranteed students' access to virtual classes, regardless of their location, and (b) enrolment in group activities where they interact and connect with each other (Alexander & Golja, 2007). Throughout this process, quality control was applied, monitoring and analysing the effectiveness of virtual education and redesigning instruction delivery methods and content. Moreover, students seem to enjoy virtual learning, even though they miss face-to-face social interaction with their classmates and instructors (Baxter & Hailey, 2019; Lall & Singh, 2020).

On the other hand, instructors are still struggling to face the challenge of keeping their students' interest during the online classes (Weick & Sutcliffe, 2015). Remote education methods considerably demote the degree to which the instructor is able to perceive the audience's pulse, and react accordingly by e.g., presenting more detailed examples when some concepts have not been well-understood; furthermore, the student's environment (home and computer) includes numerous distraction sources, such as internet surfing, messaging with friends in social media and virtual gaming during classes, and the lack of the ability to monitor/supervise the student's action may increase the student's proneness to engage in such distracting activities. Overall, it is up to the students' self-discipline to stay focused on the online course or be distracted (Bao, 2020; Dhawan, 2020).

While technology-mediated learning can be used to transfer knowledge (e.g., through lectures, assignments etc.) and skills (e.g., through virtual labs), the development of social skills such as person-to-person communication abilities (Smart & Featheringham, 2006), public speaking (Lindner et al., 2021; North et al., 1998) and interviewing (Howard & Gutworth, 2020), which is a core goal of higher level education, needs special attention, and appropriate provisions should be made to avoid significant lags in this area, due to the lack of physical student-to-student and student-to-instructor communication, which is inherent in computer-mediated teaching processes. In this chapter, we explore methodologies,

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tools and practices that can be used to counterbalance the deficiencies introduced by distance learning methods to social skill development.

The purpose of this chapter is to introduce the reader to the importance for social skill training of the learning communities during times that online learning is the sole type of education. It discusses the online learning process and the social and cognitive presence, presents the social skills involved in the process and training potential. Additionally, this chapter presents an overview of the social skill training needs, analyses the problem by drawing experience from the nine-month pandemic reality in University education and reviews the pedagogical and technology approaches that may be utilized to mitigate the issue. The approach followed is to understand the psychological burden, the pedagogical aspects and the technological opportunities for students to learn and grow their social skills along with their knowledge and learning in the online learning environment that is now the new norm. Moreover, the chapter aims to highlight the cost for not addressing the student social skill growth, which are imperative skills to leadership building and important aspect for online learning.

MOTIVATION

The term “Virtual Community” is used to refer to any virtual space where people connect, communicate, interact, and exchange views and information digitally (Preece, 2001). A Virtual Learning Community (VLC) can be any virtual space (online platforms, social networks, etc.) which provides teaching and learning to people who aspire to obtain or share knowledge (Lock, 2002). Interaction is an integral part of virtual learning communities and supports the learning process to a great extent.

Problem-Based Learning (PBL), as the name implies, refers to a learning technique which uses problems as a means of student interaction. Students share their thoughts and ideas on the problem, in order to come up with a solution, and hence it is a method easily applicable to virtual platforms (De Witte & Rogge, 2016; Mitchell, 1988). Through PBL, students can have an active role in the learning process, sharing their views, building knowledge and grow their management and strategy skills (Hmelo-Silver, 2004).

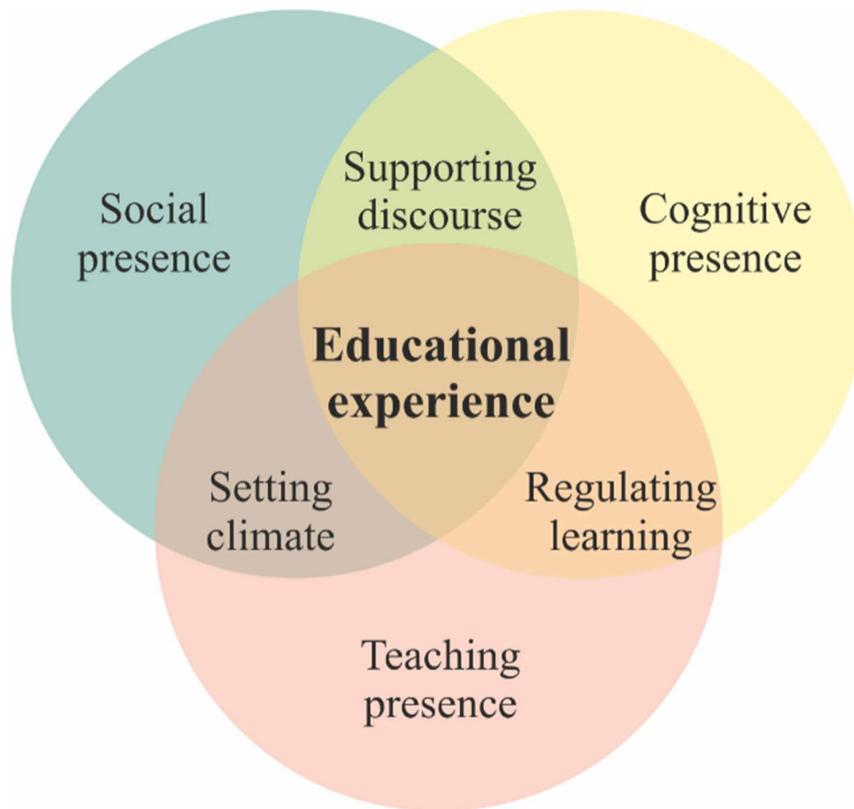
The Community of Inquiry (CoI) framework consists of teaching, social and cognitive presence in the learning process (Gutiérrez-Santiuste et al., 2015). It supports learning through goal setting, teamwork and connectedness among the participants who are: instructors, students and peers (Garrison, Anderson, & Archer, 2001). The CoI model is presented in Figure 1.

Online Learning Process

The development of VLCs is crucial for the effectiveness of the online learning process and hence, they should comply with basic standards. For this purpose, Lock (2002) shared a four-step process of virtual learning community creation:

- **Step 1:** Acknowledge the significance of virtual learning communities and create bonds among the members of the community.
- **Step 2:** Find and implement the right technologies and technical structure.
- **Step 3:** Allocate the instruments to support the members’ communication and teamwork.

Figure 1. The Community of Inquiry model¹



- **Step 4:** Continuous support and guidance to all members according to the newest updates concerning the online learning process and VLC operation.

Further to Lock's (2002) four-step process of VLC creation, the most important guidelines suggested by recent research (Liu, Wang, & Wang, 2020; Nikiforos, Tzanavaris, & Kermanidis, 2020), concerning the creation and improvement of VLC are presented below:

- **Design the curriculum and schedule, considering the digital nature of the learning process**
 - Reduce the duration of sessions to avoid students' lack of interest or burnout.
 - Provide digital material and links to lectures to help students better understand the content of the course.
- **Set the rules of the virtual learning process**
 - Communicate the rules to the community, in a comprehensive way.
 - Ensure that everyone follows the rules, avoiding any deviation.
- **Establish digital mechanisms to support the members of the VLC mentally**
 - Employ psychologists, coaches or trained instructors to reduce tension and tackle the members' stress, anxiety, panic, and depression.

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- VLC members who were affected or have a close relative affected by the pandemic of COVID-19 need extra emotional support by an expert to help them manage their experience.
- **Set up a cyber segment for formal and informal communication among VLC members**
 - Create a space for informal students' interplay, like the "Students' Café" developed by "Moodle", or a forum comprising of VLC members, where they will communicate with each other informally.
 - Divide the students into small groups where they can also discuss extracurricular topics/ issues, pose questions to the teacher and create bonds with each other.
 - Enrich the sessions with entertaining content and group activities to provide students with a pleasant educational environment.
- **Exploit the extensive use of social media and digital tools by students for educational purposes.**
 - Use social media (Instagram, Facebook, WhatsApp, Viber, etc.) as a means of group communication and group activities, creating for example, stories that include open-ended questions which students answer and comment on their peers' answers. In this way, they interact and share opinions and knowledge.
- **Benefit from virtual gaming**
 - Plan virtual games where exclusive participants will be the VLC students, and hence they will get to know each other, interact and enjoy the game.
 - Plan virtual games where VLC students, peers and instructors will participate.
- **Think Big**
 - Adopt the initiative of MOOCs to provide students around the globe with free access to courses and online activities.
- **Implement Peer-to-Peer Learning**
 - Divide the students into smaller virtual groups to facilitate interaction and increase knowledge dissemination.
 - Create smaller groups, where the instructor will be in charge of evaluating the interaction among students and drive the discussions, when it is necessary.
 - Ask from students to choose their representative to present their conclusions.

The success of virtual learning communities is based on the interaction among instructors and students (Boud et al., 2001). The CoI framework acknowledges the significance of virtual learning communities in promoting VLC members' interaction during online courses and comprehension of the course. Virtual learning communities encompass the three forms of presence, which are teaching, social and cognitive (Scott et al., 2016):

- **Teaching presence:** The teacher/instructor is responsible for course design, discussion coordination during courses, and students' encouragement to participate.
- **Social presence:** The members of the community express themselves and participate in discourse and group activities, creating relationships with their peers.
- **Cognitive presence:** Through teamwork, collaboration, guidance and support, students search for answers, come up with ideas, and finally comprehend the course.

The CoI model acknowledges peoples' need to communicate and interact socially in any environment and hence it is developed to serve this need in the educational context (Garrison, 2015).

According to CoI model, instructors should start and drive discourses, supporting students to get actively involved, commenting on their views and ideas, and encouraging them to keep searching, analysing and questioning in order to gain knowledge. According to O'Connor & Domingo (2017) teaching presence affects significantly social and cognitive presence. Since instructors are in charge of the sessions, they should ensure the compliance with the rules of the VLC online courses, which means supporting VLC members to express freely their opinions and accept comments by their peers. This interaction creates a friendly learning environment where instructors and students can express themselves, developing strong bonds with each other and achieving healthy socialization (Pilcher, 2017). While the conversation flows, the instructor should ensure that students will not digress from the topic that would lead to missing the purpose of the conversation, giving the right feedback when they seem to understand the content of the session and improving, the quality of the discourse (King, 2002; Liu & Yang, 2012).

Instructors should also assign group coursework that brings together all students, and helps them interact with each other, set goals, tasks and aim at the best results, as well as higher grades. The best results emanate from teamwork that rewards students with sense of community and strong relationships (Dewiyanti et al., 2007).

The concept of small-group activities and assignments in online courses focuses on the social interaction among the VLC members. In other words, when the sessions consist of small groups of participants, all the opinions, ideas, thoughts, and questions can be expressed, answered and criticized by the rest (Wegener & Leimeister, 2012). Therefore, everyone has the opportunity to be active in the session, understand its content, acquire knowledge, connect and construct relationships, through this process.

Virtual learning communities should implement the Problem-Based Learning (PBL) method to gather students in small virtual groups and allow them to interact in order to discover their full potential, cultivate their social skills and create social ties with their peers. The method of PBL combines students' existing knowledge, with critical thinking in order to derive a solution, hence, leading to the development of skills for solving real life problems, as well (Ferreira et al., 2017). The results of the successful implementation of PBL by VLC for their students in online courses are: acquirement of a knowledge base, socialization, confidence, collaboration, and inspiration to gain further knowledge (Hmelo & Ferrari, 1997).

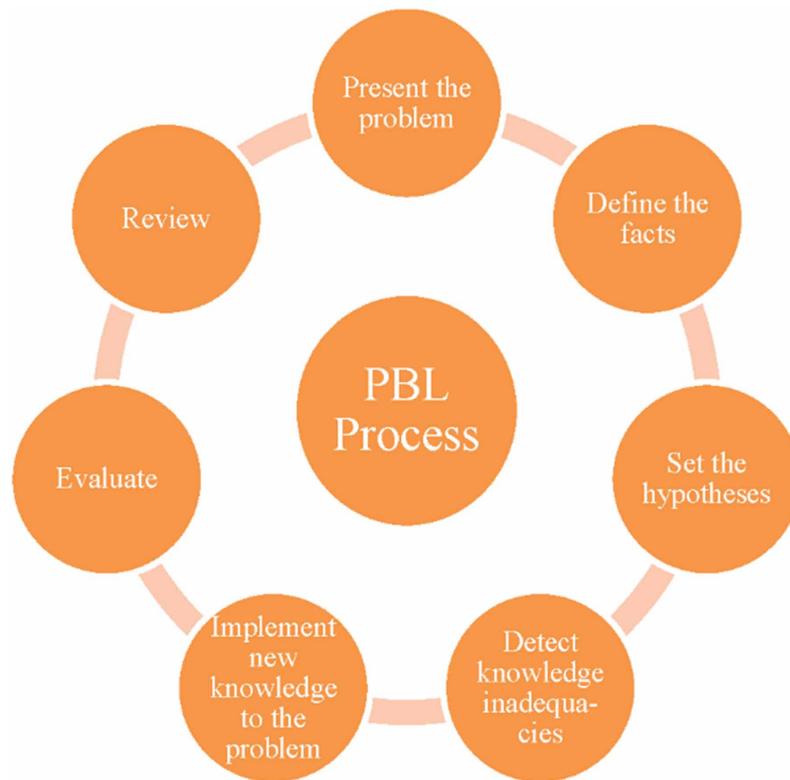
The Problem-Based Learning Process (Hmelo-Silver, 2004) is illustrated in Figure 2.

Through discussion, sessions become pleasant and the content comprehensive for students who actively participate in online courses. Students communicate with the teacher and their peers, instead of giving answers to questions posed by the teacher. Discussion is a more direct way of disseminating knowledge among the VLC members, and, since online courses lack direct contact, it is imperative to integrate discussion into the sessions.

Instructors should use the media and encourage their students to do it as well, for educational purposes, which means, students searching for digital material (images, videos, audios) that refers to the session and start a discussion about it with the group members. Since students are familiar with such technologies, instructors should take advantage of it and stimulate the students' interest (Farrell & Brunton, 2020; Harackiewicz et al., 2016).

Digital platforms, tools, systems and software can facilitate the interaction among students during classes. For example, there are LMSs where students can start a discourse and also drive it as instructors (Häfner et al., 2013). This is an opportunity for instructors to empower students, providing students with instructor duties. Therefore, instructors will be able to develop students' communication, leading

Figure 2. The Problem-Based Learning Process²



and social skills through discussions. They should choose a topic for the discussion and give pertinent guidelines to students- instructors.

Students as instructors in online discussions should have self- discipline to serve their role and manage the discussion effectively. As instructors they improvise and develop strategies to stimulate the interest of their peers, and they also participate in the discussion, expressing their views and interacting with the other students (Fisher & Baird, 2005).

Developing students' leading and social skills will benefit them in future life (Ratten & Jones, 2020), and hence the structure of online courses should promote experiential learning, which means that learning outcomes are harvested mainly through reflections of actual doing: in this context, students are active and responsible, take initiatives, provide feedback to the teacher, represent groups of peers, express views and comments, and also cultivate their leading capabilities. This is why HEIs should have students actively involved in the learning process (Agarwal et al., 2020). Even students from remote areas should be able to participate to the discussion.

The online learning environment is an important factor of stimulating and maintaining students' interest and interplay during sessions. Consequently, those who manage the structure and operation of online sessions should take into consideration the students' attitudes, thoughts and maturity to appreciate the sessions' quality (Linjawi & Alfadda, 2018; Nkhoma et al., 2015).

SOCIAL SKILLS AND ONLINE LEARNING

During the COVID-19 pandemic, most countries switched to online learning. Instructors and students found themselves in a situation where neither the existing design and deployment of the supporting technologies nor the instructor and student skills could cope with the full-time remote learning process (Hall et al., 2020). The technology providers quickly responded with massive support for the basic communication and learning tools for the new challenge, building on the requirements that have been identified on the global scale (Palvia et al., 2018). However, the physical distance between the instructor and the students as well as the students themselves is a barrier to social interaction and the growth of the social and cognitive skills for all individuals. Social and cognitive skills developed during school days depend on the interaction between students themselves as well as between students and instructors (Borghans et al., 2015). On the other hand, non-school days have almost no effect on the training of cognitive skills (Carlsson et al., 2015).

Social Presence and Learning Communities

A global event that forces online education as the sole type of learning mode may result in longer-than-expected online activities with very few days of exception. However, interaction still takes place during online learning. The positive effect of social interaction in online settings was highlighted in earlier studies that examined the effect of types of interaction on the enhancement of cognitive presence (Liu & Yang, 2014). It was deduced that online case-based discussions that are combined with life experiences or social events, help students assimilate genuine real-life encounters to their deductive ability and knowledge of the world. Externally-facilitated regulation scaffolding of discussions has also been found to positively affect the students' critical thinking (Gašević et al., 2015). However, the effect is diminished for large classes where the discussion is switched from real-time to asynchronous, to accommodate the body of learners (Kilis & Yıldırım, 2019). For larger classes, script-moderated role assignment in targeted discussions, such as debates, was found to promote cognitive presence (Darabi et al., 2013). Scripted roles are key pieces in cognitive skill training of students for debates, since they allow students to assume multiple roles, learn about the other peoples' ideas, switch places and argue for and against multiple issues (Olesova & Lim, 2017).

Socialisation facilitates the necessary interaction for students to accumulate knowledge that effectively leads them to learn to self-regulate their learning (Shea et al., 2014). Social presence in online learning is perceived based on the actual activities that the individuals are involved in during their online interaction. The level of interaction and the volume of the activities and the duration positively correlate with the perception of social presence, by learners. Sustained activity in interactive social groups, such as forums, resulted in learners reporting higher perceived social presence and the associated experiences such as stronger bonding with the groups' peer students (Poquet et al., 2018). This is an indication that high-volume learning environments that utilize forums and discussions to a great extent, such as MOOCs, are more likely to provide the means to facilitate social presence. Moreover, social presence and perceived learning are directly dependent to the type of learning in terms of thematic content and delivery method, as well as to the discipline characteristics, length of the course and interaction elements (Richardson et al., 2017). There are also variations observed about learner success between online and face-to-face course attendance, as well as between experienced and first-time learners (Hart et al., 2019).

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Learners in online learning environments form communities in which they explore common interests, opinions and interact about them with their peers. Social network analysis techniques can be used to identify the communities of learners in online learning environments and analyse their structure and dynamics (Jan, Vlachopoulos, & Parsell, 2019). The analyses may lead to understanding of the group structure of the communities, how they accommodate common tasks and how the social interaction between the members evolve over time. From the aspect of social and cognitive presence, community detection and analysis would also observe how social groups are formulated and affected by the actual learning tasks as well as study their network characteristics (structure, size, centrality) that affect the social and cognitive presence of the learners (Tirado-Morueta et al., 2019).

Social Skills

Social skills are defined as four distinct target areas (Grover et al., 2020):

1. **Communication skills.** The ability to use language to convey intentions, requests and responses to requests and resolve conflicts. Also, the ability to initiate and maintain communication, adjust the content based on the conversation peers, convey information and intentions in an understandable manner.
2. **Emotion Regulation skills.** The ability to regulate own emotion and act accordingly, communicate emotional responses to other individuals and situations.
3. **Cognitive skills.** These include the ability of the individual to interpret social situations and act accordingly. They range from the basic cognitive functions, such as attending a discussion or a meeting, to processing complex social situations, understanding social cues and social environment norms.
4. **Social Problem-solving skills.** These include the ability of the individual to define and formulate problems, by processing the relevant information to understand the type and extent of the problem. Alternative solutions can then be generated, assessing the validity and effectiveness of each and decisions made, based on the projected effect of each solution (positive or negative). Solutions can then be enacted, and their success or failure evaluated by the outcome.

According to the Social Skills Improvement System (Elliott & Gresham, 2013), social skills are operationalised by comprehensive measures on seven social behaviour areas:

1. Communication
2. Cooperation
3. Assertion
4. Responsibility
5. Empathy
6. Engagement
7. Self-control

Trower, Bryant, & Argyle (1978) indicated that competent social behaviour comprises the following behaviours and skills:

1. Nonverbal behaviour, such as body posture, gestures and facial expressions
2. Verbal behaviour, that is receptive and expressive language control over the verbal operands
3. Affective behaviour, which is a broad term that includes empathy, recognition and expression of one's emotions and feelings, respect for peers, punctuality and professionalism, among many others
4. Social cognitive skills, which include problem-solving, ability to understand broad and individual issues and problems, social cue detection, response and discrimination, social norms and group behaviour.

Cognitive presence comprises the cognitive and metacognitive skills of the learner. Cognitive skills describe the abilities of the individual to (Spiliotopoulos et al., 2020):

- fulfil challenging tasks (self-efficacy),
- maintain and control own attention (self-regulation),
- think analytically for solving problems and placing oneself in the position of others (interpersonal problem-solving),
- actively assist others in volunteering, community and environmental issues (civic action),
- adopt and sustain change initiatives (individual readiness to change) and
- encompass mastery as a goal in performing triggering tasks or activities (mastery goal orientation).

In the recent years there has been extensive analysis on the effects of social skills and in particular the cognitive skills on the level that they affect learning in highly social settings, as in HEIs. It is especially evident that cognitive skill training can enhance offline and online learning.

Self-efficacy was found to be relevant to learner satisfaction and academic achievement (Doménech-Betoret et al., 2017). Moreover, Self-efficacy is a strong predictor for both learner satisfaction and predicted success (Joo et al., 2013). Learners with higher self-efficacy feel confident that they possess the ability to achieve their goals, so their motivation to learn is also higher, resulting in higher academic achievements (Yokoyama, 2019).

Self-regulation aligns with the educational goals since it allows the learner to control own actions toward attention and self-improvement, be a judge to own performance, reactions and observed activity (Burman et al., 2015). Interpersonal problem solving is essential in addressing interpersonal and social issues, since analytical thinking and empathy are trait that allow interlocutors to constructively work towards a common mutually-satisfactory goal as the optimal outcome (Schneider & Yoshida, 1988). Civic action is related to participatory engagement in the civic society, leading and assisting others in community-level or global issues (Franco et al., 2010). Civic action skills help learners see the “big picture” of the learning goals and the importance of learning as the means to applying knowledge to address larger issues (Krasny & Tidball, 2009; Reichert & Print, 2018). Individual readiness to change is a skill that has the practical implications of enhancing communication since the individuals can adopt, enhance and sustain changes that are either introduced by the learning process or by the learned content (Vakola, 2014). Mastery goal orientation is by definition related to online learning, since it encompasses “having the goal of learning and mastering the task according to self-set standards” (Hsieh, 2011).

Skill Training

During the COVID-19 period, HEIs faced a major challenge on most effectively preparing their students for success in the online environment (Alperin et al., 2020). The development of social skills has been identified as an important aspect of teaching and learning, quite some time ago, leading to social skill training programme designs (Cartledge & Milburn, 1978). Self-regulation skills are essential for classroom learning but even more important for successful online learning (Barak et al., 2016). Learners may utilise self-regulation strategies to optimise their learning process to the rhythm and intensity required by the online environment (Landrum, 2020).

MOOCs are designed for global online attendance. They utilize video lectures and quizzes in a manner that accommodates most learners (Ahrache et al., 2013). MOOCs are accessible and suitable for individual learning and learner motivation (Deshpande & Chukhlomin, 2017). They are optimized to keep students involved on the courses, utilising analyses of behavioural patterns and providing resources to help course completion (Korableva et al., 2019). On the other hand, online classes that replace face-to-face lectures require higher level of interaction and critical thinking, as well as working in groups toward a common goal. Depending on the type of interaction, students participate in various social learning environment settings that put the learners' critical thinking, mastery goal orientation, self-efficacy and problem-solving abilities to the test (Wan Hussin et al., 2019). Enhancing problem solving skills is an essential asset for online learning and leads to students displaying a high level of satisfaction with online learning participation (Hsu & Hsieh, 2014). The reverse is also true. Cognitive presence is dependent on the self-efficacy interpersonal problem-solving and mastery goal orientation skills of the learner that play a significant role for the learner to maintain cognitive engagement (Aguilera-Hermida, 2020).

The forced adoption of online learning during the COVID-19 period placed heightened stresses on both instructors and learners due to the intensive nature of the learning settings and the prolonged period of use (Roddy et al., 2017). Several social skill assessment programmes have been designed to accommodate various settings and attitudes (cultural, religious, racial, ethnic), as well as learning behaviours and targets (Gresham, 2016). Measuring cognitive skills before and after sessions of learning or training or after specific learning time has passed (e.g., end of each semester) can provide insight into how learners respond to training and their skills progress (Jackson et al., 2018).

Most of the specialised approaches for cognitive training that exist today are designed to address medical conditions, such as neurological disorders, aiming to delay progression the cognitive impairment (Irazoki et al., 2020). However, there are also systems that utilise advanced technologies (VR, object tracking) for cognitive skill training of non-medical but nevertheless demanding domains, as in sports (Fadde & Zaichkowsky, 2018). VR technology can be used to create embodied virtual characters that can interact in virtual environments that simulate classroom, workplace, or any other environment of context. The learners may interact with the virtual humans in virtual environments for social skill training (Gillies & Pan, 2019). Using virtual and augmented reality technology combined with gamification and other immersive approaches for social skill training programmes were found to create effective and practical skill training systems (Scavarelli et al., 2020).

Integrated approaches that use active embodied agents and natural language interaction along for metacognitive skill training can be utilised to train multiple skills at the same time, from body posture to mastery goal orientation and civic action (Makri et al., 2020). In addition, cognitive skill training is also found to be essential for the future employability of the learners, since Industry 4.0 jobs are expected to

require individuals that are able to easily adapt to new settings and goals as well as identify emerging learning goals for the work (Ra et al., 2019).

CONCLUSION

E-learning and MOOCs were the antecedents of online learning and DCPs, congregating students and instructors even from distant areas, to collaborate, interact and conduct courses, digitally (Singh et al., 2020). Many people, including students and scholars, are already familiar with DCPs such as Zoom, Teams, Skype, and Google classroom, which encompass chatting, planning, data storage, webinars, etc. These platforms enhance remote learning, communication, socialization and interplay among the participants (Heggart & Yoo, 2018).

DCPs became popular in the educational structures due to COVID-19, since finding a space, where scholars, students, and HEI faculty members could meet virtually and connect for operational, or educational aims, was imperative (Singh et al., 2020).

Information technology platforms can bring together students and instructors for educational purposes and allow them to interact socially and academically (Leimeister et al., 2006). Virtual learning communities where instructors and students interact should be based on mutual trust and reciprocity- crucial elements for the effective operation of communities, and dissemination of knowledge (Leimeister et al., 2005).

In the context of VLCs, students feel part of a (virtual learning) community, express their thoughts, communicate with each other, developing critical thinking and social skills with the contribution of virtual technology (D.R. Garrison et al., 2010). Working in small groups, developing strategies, searching for solutions, discussing about the session's topic, commenting on peers' opinions will help students understand the course, gain knowledge and socialize, through digital platforms and systems.

Through virtual technology, students and instructors find a (virtual) space to share knowledge, communicate, socialize, have visual contact and work as a team (Shin, 2017), during the pandemic that has led HEIs to closure and prohibited direct contact.

Technology has provided a multitude of tools which can prove very useful in the hands of people who want to serve such a great purpose as education. During the days of the pandemic, where people are isolated, virtual community and virtual learning technology brings people together to experience a sense of educational community in the virtual world.

Finally, while a number of methods and tools such as VR training programs, gamification and immersive technologies are increasingly being considered for incorporation into the curricula design and delivery methods, the effect of these aspects on social skill development should be considered, since recent studies have shown that gamification and immersion affect adversely social skill development, while the effect of VR training programs is dubious (Howard & Gutworth, 2020). Naturally, this does not mean that these tools and methods should be avoided, however the overall curriculum design should consider these effects and employ suitable means to counterbalance any negative effects, so as to achieve the desired level of social skill development for students.

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KEY TERMS AND DEFINITIONS

Cognitive Presence: Through teamwork, collaboration, guidance and support, students search for answers, come up with ideas, and finally comprehend the course.

Cognitive Skills: These include the ability of the individual to interpret social situations and act accordingly. They range from the basic cognitive functions, such as attending a discussion or a meeting, to processing complex social situations, understanding social cues and social environment norms.

Communication Skills: The ability to use language to convey intentions, requests and responses to requests and resolve conflicts. Also, the ability to initiate and maintain communication, adjust the content based on the conversation peers, convey information and intentions in an understandable manner.

Emotion Regulation Skills: The ability to regulate own emotion and act accordingly, communicate emotional responses to other individuals and situations.

Social Presence: The members of the community express themselves and participate in discourse and group activities, creating relationships with their peers.

Social Problem-Solving Skills: These include the ability of the individual to define and formulate problems, by processing the relevant information to understand the type and extent of the problem. Alternative solutions can then be generated, assessing the validity and effectiveness of each and decisions made, based on the projected effect of each solution (positive or negative). Solutions can then be enacted, and their success or failure evaluated by the outcome.

Social Skills: A set of competences underpinning communication and interaction in group-level and society-level. Social skills include communication skills, emotion regulation skills, cognitive skills, and social problem-solving skills.

Teaching Presence: The teacher/instructor is responsible for course design, discussion coordination during courses, and students' encouragement to participate.

ENDNOTES

¹ Originally published in Garrison, Anderson, & Archer (1999).

² Originally published by Hmelo-Silver (2004).