Educational Administration: Theory and Practice
2024,30(1), 5426 - 5441
ISSN:2148-2403
https://kuey.net/

Research Article

Technology Mediated Pedagogy: Implications For Alienation Amongst Higher Education Students

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Citation: Olivia Kakati et al. (2024), Technology Mediated Pedagogy: Implications for Alienation Amongst Higher Education Students, *Educational Administration: Theory and Practice*, *30*(1), 5426 - 5441
Doi: 10.53555/kuey.v30i1.9005

ARTICLE INFO
Submission: 07 December 2023
Reviewed: 25 December 2023
Accepted: 02 January 2024

ABSTRACT
Technology mediated pedagogy or online education in its various modes has been growing steadily worldwide due to the confluence of new technologies, global adoption of the Internet, and intensifying demand for a workforce trained periodically for the ever-evolving digital economy. Online education is on track to become mainstream by 2025. Changes in education delivery models have been rapid and transformational. While on one hand, the digitalization of education has become a necessity in order to provide seamless education; on the flipside it has also created a digital divide and given rise to many paradoxes of modernity such as alienation, loneliness and estrangement. Also, a paradigm shift in pedagogy requires new ways of coping. This paper is a narrative review-based study and would be discussing the problems faced by the students who are pursuing higher education online. This paper also tries to find out the positive & negative impact it has on the pedagogy, learning and evaluation methodologies at undergraduate and postgraduate levels; what coping strategies students use; and what steps our policymakers can take in order to provide seamless education to the students who are pursuing higher education. Some suggestions will also be pointed out in this paper with regard to how we can further revolutionize the teaching & learning process to improve the experience of both; teachers and learners in today's world.

keywords: Technology mediated education, higher education, distance learning, alienation, perceived loneliness, learning management system

Introduction

In the present era of globalization and the world booming with scientific advances, the ubiquity of technology as a medium penetrating in all aspects of our life is undeniable. In the past few decades, like almost all other sectors of human growth and development, technology has lent a huge influence on the education sector as well. Technology mediated pedagogy is one of the greatest boons to the field of education that technology has bestowed upon us. Given, the enormous number of advantages that online education has; including ease of accessibility, widespread reach, flexibility, wider range of courses and resulting avenues etc; this mode of education has gained immense popularity over the last few years especially after the advent of the COVID-19 pandemic.

Online learning is a term that encompasses web-based teaching, e-learning, distributed learning, net-based learning, web-based training, cyber learning, virtual learning and internet-based learning (Urdan & Weggen, 2000). It embraces a wide set of technology applications and learning processes including computer-based learning, web-based learning, virtual classrooms and digital collaborations (Urdan & Weggen, 2000). Another option is blended learning/blended courses, that combine live, interactive classroom learning sessions along with web-based learning sessions (Curran, 2004; Garrison & Kanuka, 2004). Recent research has found that blended learning results in improvement in student success and satisfaction (Dziuban & Moskal, 2011; Means et al., 2013) and improvement in the sense of community among students (Rovai & Jordan, 2004) as compared to face-to-face courses. One of the advantages of blended learning is the wider reach to suburban and rural areas, which otherwise could not be a part of innovation in learning. Blended learning is also popular because

it reduces the need to stay long years away from one's native place, making it more cost effective for many aspiring learners. Since it combines face-to-face and online teaching methods according to the objective of learning, resources and environmental factors, learners can experience the best of both. However, success of blended learning is the effective and voluntary decision of the instructor to select the sessions for blended learning and face-to-face learning and is not a common phenomenon with all teachers in higher education.

Despite the immense applicability and popularity of online education systems, on the flip side, it raises serious concerns because as a method techno-mediated pedagogy relies on speed, spread and uniformity which leaves little scope for excellence. Decontextualised realities can be created with the help of algorithms, automation and human curation, separating the teacher and the learner from the true essence of pedagogy. This results in alienation of the learner from the teacher and from himself/herself as well. The word alienation has its origin in a Latin noun 'alienatio', which was originally derived from a Latin verb "alienare" which means to 'take away', 'remove', or 'cause a separation to occur'. The concept of alienation, though abstruse, has been of staunch significance in the development of socio psychological thought (Sarfraz, 1997). It refers to a sense of separation from one's true sense of being (Marx, 2015).

If we trace the evolution from the modes of education, it has evolved from oral culture, writing culture to printing culture (Guttenberg's galaxy) to electronic age. Oral culture sustained on wisdom but with the shift to a technomediated age, the system of understanding shifted its locus from inside to outside, that is visual sensory system.

Laswell highlighted that an important function of media is the surveillance of the environment and to provide information to the human society (Lasswell, 1948). But techno interaction leads to de-individuation, thereby the central meaning of the messages are lost in seriality. Anthropologist Appadurai talks of technoscapes crossing boundaries but also emphasizes that it is not context sensitive, thereby online education perpetuates asymmetric dissemination of information (Appadurai, 2015). Bentham's concept of panopticon also highlights that we can't control the technomediated communication and our dependence on medium may digress us (Bentham, 2011). According to Nietzsche, homogenization is the key feature of technomediated communication, which leads to excess attachment to objects and desires and is harmful to vital life energies (Nietzsche, 1977).

Digital ecosystem offers 24/7 visibility in which the boundaries melt, mate and disappear. It is an epistemology of mutation of biological with mechanical and changes our bodies into permeable screens. With this background, at this juncture where technomediated interactions and pedagogy are ubiquitous in our lives and given its undeniable positives and negatives, delving further into this topic is the need of the hour.

Theoretical orientation

Goffman's theory of self-presentation (Goffman, 1978)

Erving Goffman's "The Presentation of Self in Everyday Life" takes a dramaturgic, theatre-like, approach to social interactions. The question that interests Goffman is how we have a tendency to manage the impression of ourselves among social interactions. He holds that in fact, in social interactions, we continuously "perform" ourselves. Our public presentation of who we are is rarely a solo act since it depends on the setting ("stage"), audience and therefore the cooperation of different players. For Goffman, this turns any social interaction into a form of negotiation on the meaning of the case and the roles of individuals in it (Goffman, 1978). Goffman views the participants in an interaction as actors who have a different persona front stage and back stage. When on the front stage, they are more concerned about impression management and want to put their best foot forward. In case of a virtual interaction, the distance between the audience and the performer is wide, therefore individuals might create an identity which is far different from their real identity and in the process can get alienated from their true non-virtual identity (Bullingham & Vasconcelos, 2013). Substantial amount of research conducted in the domain of media psychology, self-presentation and impression management have used this theory as a framework for their research and it has been reported that as proposed by Goffman's theory, individuals do make a conscious effort so that they can make desired impressions (Merunková & Šlerka, 2019). Research further substantiates that Goffman's theory which primarily talks about face-to-face interactions also holds true in the context of online social networks (Kuo,Tseng, Tseng, & Lin, 2013; Smith & Sanderson, 2015; DePaula, Dincelli & Harrison, 2018). However, though Goffman's theory has been increasingly used to explore and understand media mediated interactions, it hasn't been used to understand how media and technology could give rise to undesirable phenomena such as alienation. Thus, Goffman's theory can serve as a basis to understand internet mediated interaction and how that can lead to alienation, which is a key topic of exploration of our current study.

Seeman's theory of alienation

Seeman was highly inspired by the Marxian concept of alienation and worked towards broadening it further by adding meaningful dimensions to it. According to Seeman, alienation was not only restricted to personal estrangement and powerlessness as proposed by Marx but also comprises other dimensions. The Seeman perspective posits that there are 6 categories of alienation which are as follows:

Powerlessness. Powerlessness, which is similar to Rotter's (1966) conception of the 'externals', is defined by Seeman refers to the belief a person holds that his/her own behaviour cannot seem to determine whether a

particular outcome or reinforcement that he/she wants will occur or not (Seeman 1959). The lack of control over socio-political events is what seems to arouse such feelings.

Meaninglessness. Meaninglessness according to Seeman refers to the "individual's sense of understanding the events in which he is engaged" or not having the clarity on what he/she is expected to do or believe (Seeman, 1959). As a result of this, one cannot be confident about "the consequences of acting on given belief"' (Seeman,1959).

Anomie. The third category of alienation according to Seeman is anomie which is heavily influenced by Durkheim's concept of anomie which refers to a situation where "social norms regulating individual conduct have broken down or are no longer effective as rules for behaviour" (Seeman 1959). Durkheim posited that such a situation can arise in two circumstances: where there is erosion of social norms to such an extent that one has become disconnected from social conscience; or where individualism has increased to such a degree that people no longer care about the other's needs, concerns and aspirations (Smith & Bohm, 2008). According to Seeman, anomie develops when society is unable to meet the desires and aspirations of its individuals (Seeman, 1991).

Isolation. According to Seeman, the fourth aspect of alienation is isolation. He defines it as a situation where people "assign low reward value to goals or beliefs that are typically highly valued in the given society" (Seeman, 1959). Hence, they tend to develop a sense of separateness from the society holistically and thereby seek to achieve changes that are rooted in their own priorities and imperatives.

Self-estrangement. Seeman's fifth and most important aspect of alienation is what he called self-estrangement. He defined this as "the loss of intrinsic meaning or pride in work and the failure to be fulfilled by the activities in which one is engaged" (Seeman, 1959). He posits that self-estrangement is the most problematic aspect of alienation.

Cultural estrangement. Seeman's sixth aspect of alienation is cultural estrangement and was included in his later work. He defined cultural estrangement as "the individual's rejection of or sense of removal from dominant social values" (Seeman, 1975). It aims to give an explanation as to why some people do not tend to follow or accept social norms (Healy, 2014).

Further research on alienation posits that contemporary theories and research finds in both micro and macro analyses the classical dimensions of alienation very essential, even if sometimes the name 'alienation' isn't directly mentioned. There are varied instances of importance of studying alienation from a wide range of perspectives, ranging from Marxists to symbolic interactionists; which employ varied domains of alienation, ranging from powerlessness to sense of isolation vs. community; and dealing with a wide domain from experience, ranging from health and work to collective behaviour. From this, it can be drawn that the area of alienation is worth delving into further and that this classical concept tends to find continued significance in both psychology and sociology (Seeman, 1983; Seeman et al., 2021).

Also, this theoretical orientation on alienation has been used to study addictions and alcohol abuse, which is thought to have a similar mechanism like media or technology related behavioural addictions. This study also highlights the need to dig deeper and generalise the concept of alienated labour to non-work settings like media and technology use for leisure (Seeman, Seeman & Budros, 1988). In terms of media usage and alienation, Seeman's conceptualisation of alienation has been used as a theoretical framework to understand the dynamics of frequency of media use and fashion alienation, wherein it was found that an inverse relationship exists between the two (Kaiser & Chandler, 1984). Thus, this theory can act as a guiding light for our research in terms of understanding the different facets of alienation and how it can manifest not just through components of self-disconnect or estrangement but also through larger phenomena such as cultural estrangement.

Research Objectives

- To explore the medium of online education as a mode of dissemination of education.
- To understand the problems faced by the students who are pursuing higher education online.
- To explore the positive & negative impact online education has on pedagogy, learning and evaluation methodologies at undergraduate and postgraduate levels.
- To understand what coping strategies student's use to cope up with such a mode of learning.
- To understand and evaluate the impact of online education on the psychological processes of isolation, anxiety and alienation.
- To understand and evaluate impact of online education on class discrimination of the learners.

Methods

The epistemological stance for the current study is that of modified objectivist. The ontological stance is of critical realism. The methodological approach undertaken was that of narrative literature review. The search focused on the literature on online pedagogy (teaching and learning) published between January 2000 and October 2022. The search was limited to this period because it was after the development of the World Wide Web, and the generalisation of the use of Internet into many homes that online learning spread (Bates 2005). Within the context of the Indian higher education, this date also coincides with the emergence of virtual learning initiatives as a consequence of the internationalisation and competition among higher education

institutions. The process for selecting the literature included in the current review started with a search in the databases Web of Science (main collection) and Education Resources Information Centre (ERIC), Google scholar, PsychInfo and ProQuest. Publications whose title contained the term 'online learning' (or the terms 'digital learning' or 'e-learning' or 'web-based learning' or 'remote learning' or 'distance learning' or 'virtual learning') and which responded to the descriptors/topics 'student implications' or 'teacher implications' were sought. Although the concepts of online, e-learning, virtual, digital, web-based, remote or distance learning are rather different, they were considered relevant for the purpose of this study of examining any kind of practice in which the teaching and learning process is mediated by the use of technology in a remote scenario. A total of 134 papers fulfilled the inclusion criteria established for this research in terms of the publication source (academic journals), the nature of the studies (empirical), and the relevance of the topic (main focus on online teaching and learning practices in the context of higher education). The selected papers were subject to two types of analysis. First, a descriptive analysis was carried out, which implied the elaboration of a summary table for each of the papers that specified the focus of the study, characteristics of the sample, the methods and their main findings. Second, a content analysis (Ryan and Bernard 2000) was conducted, which built on the CoI framework (Garrison, Anderson, and Archer 2000) to sort the data into categories. This entailed the elaboration of a table which included, for each of the papers, the findings in relation to online teaching and learning practices related to social, cognitive and teaching presence according to the CoI framework. This framework, which identifies the crucial elements for 'a successful higher education experience' in a computer-based environment (Garrison, Anderson, and Archer 2000, 87), highlights that learning is the result of the interaction of three presences: a) social presence, related to the ability of participants to engage affectively with a community, communicate purposefully in a collaborative environment, and develop interpersonal relationships by projecting themselves as the people they are (Garrison, Anderson, and Archer 2000); b) cognitive presence, or the extent to which the participants are able to construct meaning through sustained reflection and communication in a community of inquiry (Garrison, Anderson, and Archer 2000); and c) teaching presence, this is, the design, facilitation and direction of social and cognitive processes with the aim of achieving meaningful learning outcomes (Anderson et al. 2001). Subsequently, a crossanalysis of the data as related to each category (social, cognitive and teaching presence) was performed. This led to collect the findings for each category across the selected papers to find patterns that make sense beyond every specific case (Huberman and Miles 1994), without disregarding the particular features of each paper. Finally, all other important literature in this regard were assigned separate themes based on its content. Two 'verification' strategies (Creswell 1998) were implemented to confirm the accuracy of the research process. Peer reviews conducted through regular exchanges between the researche and the supervisor, the second not directly involved in the data collection and analysis, provided an external check of the research process (Lincoln and Guba 1985). This researcher (second author) regularly reviewed the material generated and contributed with comments on both the methodological process and the product. The insights provided by this researcher on the selection of the databases, the criteria established for the search, the types of analysis conducted and the accuracy of the analysis (process) as well as on the assessment of how the findings, interpretations and conclusions of this study are supported by the data (product) allowed to refine the research process.

Results

Based on the literature reviewed, the following themes have emerged from the literature. The findings from the literature will be discussed under the following heads:

Digital Divide in Online Education

The internet has enabled us to cover distances by allowing access to far-flung distant areas. However, practically speaking, lack of efficient internet connections and uninterrupted power supply plays havoc with the online education system in all geographical locations. The Saubhagya scheme of the central government shows that electricity is available in 99.9% of Indian homes (Nedungadi et al., 2018). However, the quality of electricity and timely availability are questionable. Power outages and load shedding are common in most semi-urban and rural segments. Even in case of computers, mobile phones and related services all over the country, quality is doubtful.

A sharp divide is evident between urban–rural segments in resources available to avail online education services. Locations that are far from main urban areas or at considerable height from the mean sea level face poor network and connectivity. Students are drawn in from various rural and peri-urban areas towards urban areas to receive education (Mahadev &_Kumaran, 1988). Due to the Covid-19 pandemic, most such students have shifted base to their native villages in the hinterland and are thus were unable to access internet services. Some may not have access to the requisite devices. Such disproportionate access to resources is causing a stressful divide that is intensifying and getting magnified. Another important aspect is cost of the device as well as connectivity. An analysis of the average spending on back-to-school supplies in Spain shows that €213 out of the average school supplies shopping budget of €630 would be spent on purchase of laptops. These data pertain to school-going students. While similar studies in the Indian context are scarce, such unprecedented educational expenses will add to the economic stress faced by students and their families, and further widen the gap. If e-learning is the new normal, the education policy must go further to address the feasibility of

digitalization to ensure equity and quality in education.

Roles and Challenges from a Faculty Perspective

Online teacher's role largely encompasses four main areas. These areas may be categorized as pedagogical practices, social balancing, managerial efficiency and technical know-how. The pedagogical role involves facilitation of education while the social role involves creating a warm and receptive environment which allows for enhanced online learning. Managerial role calls for setting the agenda, pacing the sessions, setting practical objectives, rule-making and taking decisions. Technical role requires that instructors first become comfortable with the technology in use and then let that level of comfort percolate down to the learners (Sun & Chen, 2016).
Tasks undertaken by an online instructor are different from those of a traditional teacher. According to Anderson et al. (2001), these tasks are setting the curriculum and developing curriculum and related materials, designing methods which include re-designing lecture notes, delivering mini-lectures, giving personal opinions and insights and other customized perspectives of the course content; designing and delivering an appropriate mix of activities to be performed in a group or individually, that lead to creation of a conducive learning environment; setting up time parameters such as timeline projects and group activities; and establishing 'netiquette', which implies setting up and creating awareness regarding appropriate etiquette during online sessions, generating guidelines and sharing tips to create effective and clean use of the medium.
According to a study (Coppola et al., 2002), such tasks performed by instructors may be divided into three categories, namely, cognitive tasks, affective tasks and managerial tasks. Cognitive tasks are tasks that include responding to queries; editing questions and responses; thinking, reasoning and analysing of information; and, lastly, helping students in practice/rehearsal and retrieval of information. Affective tasks include all actions that may be directed towards influencing students' relationships with peers and, more importantly, with the instructor, in the e-learning session. Managerial tasks during delivery of the course involve getting students into conferencing activities at one level and interactions with support staff at the other. It also includes motivating, coordinating students' participation in the course, monitoring learning and evaluating learning outcomes.
One of the key tasks during delivery of the course is to effectively facilitate the discourse. This implies regular involvement with the posts that students make; delivering and maintaining tempo of the discourse such that it promotes attendance. The discourse must also have the potential to sustain such presence in the long run. It is imperative to encourage student contribution by acknowledging and appreciating, and thus reinforcing, contributions. Other areas of importance during delivery are setting the climate for learning; encouraging the environment of shared responsibility with each student; trying to attain mutually accepted learning objectives; giving complete support and encouragement to the respondents; practicing inclusivity by drawing in fewer active participants; and assessing the efficacy of the process regularly (Anderson et al., 2001).
Mishra and Koehler (2006) developed a framework called 'Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge'. According to them, an instructor should have three areas of knowledge: content knowledge—specific knowledge about the subject they teach; pedagogical knowledge—knowledge about how to teach, including specific teaching methods; and technological knowledge—integration of technology into the teaching process. They emphasize that these three pools of knowledge overlap to create the optimum teaching tool. However, it is mostly pedagogy and not technology that is critical to successful implementation of online courses, that is, success of the course finally depends on the faculty's approach towards integration of technology and moving beyond traditional practices.
Usually, teachers base their teaching techniques on those of their own educators, that are more suited to the traditional, on-site environment. However, such traditional strategies may often not be efficient in an online classroom. In a study by Hinson et al. (2006), faculty reported that online teaching requires more extensive planning and attention to detail than traditional courses. Online courses are generally considered more labour-intensive as they demand a greater level of advance preparation and organization, as well as more development and design time (Conceição, 2006).
Developing and delivering an online course is a multi-step process encompassing design, delivery, engagement, technology and training. Moreover, experienced teachers could find themselves as beginners again in an online environment. Many may perceive this as a challenge to their status as experts. It might even result in resistance towards online teaching because of such loss of identity. It also separates the teacher from the fruit of their labour as the feel like they are talking to blank screens and there is reduced feedback, which is a case of classic Marxian alienation (Fidler & Bala, 2020).

Role and Challenges from a Student's Perspective

Student is the crucial and arguably the most important component of the online learning model. While the comfort level and ease of the instructor delivering the course may set the tone for the session, attention, participation and intention to learn within the new framework are generated by the student.
Face-to-face interaction that a regular classroom offers is unavailable in an online session. Mere physical presence may suffice in a regular classroom. However, online model leaves the student with the added responsibility of having good preparedness levels, with a soundly functioning device, internet connectivity that allows for effective audiovisual reception and transmission (Mumford and Dikilitaş 2020).
Therefore, significant impact of the changing education system falls on the students. Apart from disruption of

academic calendar, career plans and potential job loss, students face several other problems due to the online system. One aspect of this pertains to the technicalities of online learning such as loss of interactivity, lack of access to study material, improper infrastructure etc. Loss of formal education through traditional methods will have to be bridged by online methods to ensure continuity of growth in human capital potential. Home schooling may seem like another option. However, different students coming from different backgrounds will have unequal opportunities due to differences in family income, access to resources, parent's level of education, ability of guardians to devote time to teach their children. In a country like India where deprivation is rampant, this will heavily ostracize the marginalized sections (Mukherjee, 2021).

Another aspect pertains to the mental and physical health of the students. Prolonged school closure and home confinement as was seen during the COVID-19 outbreak might have negative effects on children's physical and mental health. When children are away from school for long periods, they have reduced physical activity, longer screen time, irregular sleep patterns and skewed, unhealthy diets. This often leads to complications such as obesity and loss of cardiorespiratory fitness (Brazendale et al., 2017; Wang et al., 2015). The pandemic has also brought with it added stress and fear, intermingled with frustration and boredom. In such a situation, lack of in-person contacts with classmates, friends and teachers, lack of personal space at home and family financial loss can prove to be dangerous and may have enduring effects on children and adolescents (Brooks et al., 2020). Being in physical proximity to the instructor and a diverse peer group imparts a non-tangible aspect to learning of life skills that are crucial to development of a person. Online education steals the opportunity of such exposure (Alabbassi, 2018).

The presences in the online pedagogical practices

The Social Presence. Although only a few studies focused primarily on the social presence in online teaching and learning (e.g., Hramiak 2010; Komninou 2017; Li 2011; Satar and Akcan 2018; Yeh 2010), the vast majority of the papers examined included issues related to this presence and highlighted its centrality when it comes to teaching and learning effectiveness. The ability of learners and teachers to interact, collaborate and build relationships with other members was a source of satisfaction for students (Biasuttie 2011) and greatly influenced the cohesion of learning communities (Komninou 2017), the co-construction of knowledge among participants (Jaber et al. 2018; Jackson and Jones 2019) and the impact of online teaching and learning practices (Bicen, Ozdamli, and Uzunboylu 2014; Yeh, 2009). Only Rakap, Jones, and Emery (2015) found scarce interactions and difficulties in building relationships with classmates to have little impact on teachers' learning and focused on course content to compensate for these social limitations. Out of the social affordances of online tools, collaboration was seen as a key feature (Theelen et al. 2020) and an effective approach to social presence included consistent participation, prompt communication, regular group discussion, timely and relevant contributions and commitment to the task (Vinagre 2017). The interactions among peers and educators were key to promote collaboration and relationships but not enough to ensure the establishment of a social presence (Mumford and Dikilitaş 2020). The connectedness of participants, their affective and effective responses to one another, and their interactions through sharing their ideas enhanced a social presence (Jones and Ryan 2014). Moreover, the creation of supportive learning environments and learning communities characterised by high levels of social presence were the result of strong collaboration, interactivity, mutual respect and interdependence (Cullen, Kullman, and Wild 2013), as well as shared values (Holmes 2013) and trusting human relationships (Li 2011). These spaces provided emotional support, helped alleviate feelings of isolation (Baker and Watson 2014; DeWert, Babinski, and Jones 2003) and increased confidence and enthusiasm for work (DeWert, Babinski, and Jones 2003). In the development of online activities, an optimal level of social presence by instructors was shown to be essential in achieving participation, collaboration and fostering the cohesion of the learning community (Komninou 2017; Satar and Akcan 2018; Stagg and Slotta 2009): highly active instructors supported other members' participation in online communities, but also dominated the discussion and left limited room for student participation (Satar and Akcan 2018). At the time, the students played a crucial role in the impact of online learning practices: those that reported being active, holding an inclusive attitude and trusting each other maximised the possibilities of online channels (Delfino and Persico 2007; Olofsson 2007) and supported power sharing and student ownership of discussions (Thormann et al. 2013). Additional strategies for the establishment of a social presence were highlighted in the literature examined. Group members with similar interests or roles (Li 2011; Rideout et al. 2008; Yeh 2010) provided further opportunities to enhance belongingness; collaboration in small groups (Dickey 2004; Ducan and Barnett 2009; Li 2011) helped to develop trust and more cohesive communities; regular discussions and high levels of support and cooperation among group members (Burgess and Mayes 2008; Vinagre 2017; Yeh 2010) were more likely to drive constructive environments and better performance, and; authentic and practical activities (Satar and Akcan 2018; Swaggerty and Broemmel 2017; Yeh 2010) as well as relevant commenting (Tang and Lam 2014; Vinagre 2017) fostered participation and commitment to the task. The establishment of a social presence was also found when social interaction (process) was prioritised over the completion of the task (product) (Vinagre 2017). The interactions took place through different tools (e.g., narratives, blogs, chat, forum, web conferences or video conferences, social networks) that supported the participants in affectively engaging with other members of the community (Dyment and Downing 2018; Dickey 2004; Choi et al. 2016; Farr and Riordan 2015; Gillies 2008) and enabled the creation of interpersonal relationships by projecting themselves (Farr and Riordan 2015; Dickey 2004; Choi et al. 2016; Lee and Brett

2015). While these tools leveraged their social affordances to develop online learning practices that presented different degrees of impact, social networks provided an additional component of informal learning that reinforced peer support (Prasojo et al. 2017) and a relationship bond among virtual learners that helped to form learning communities (Chuang 2016). Also, narratives allowed student teachers to feel safe to reveal their genuine identities (Lee and Brett 2015) and make sense of becoming a teacher (Choi et al. 2016).

The cognitive presence. Most of the papers that examined issues related to the cognitive presence did not focus solely in this presence but reported cognitive evidence derived from actions of a social or teaching nature. In the blurring of the boundaries among the presences, the establishment of a cognitive presence showed to be dependent on other social (e.g., group cohesiveness and an optimal social presence) and teaching issues (e.g., a focus on the learning process rather than the end product or on the teacher as a facilitator rather than as a transmitter of knowledge) (see Social Presence and Teaching Presence). Moreover, while social cohesiveness was a prerequisite for a knowledge building discourse, higher order cognitive skills required an active intervention by educators in the process of constructing meaning (Ryan and Scott 2008; Sing and Khime 2006), including an ability to pose questions that deepen individual critical reflection and model reflective thinking (Jones and Ryan 2014) such as those that focus on individuals rather than on the group, that link theoretical perspectives from course work or that present a set of guided questions to help students understand the issues they need to consider. The discussion of participants' experiences of teaching throughout a range of mediums was critical in understanding the challenges and the co-construction of knowledge about the teaching profession (DeWert, Babinski, and Jones 2003; Fletcher and Bullock 2015). Among others, blogs fostered narration, reflective practice and depicted cognition (Farr and Riordan 2015); online forums enabled the sharing of narratives that enhanced the skill of noticing and led to changes in their practice (Fernández, Llinares, and Rojas 2020), and; web conferences allowed students to engage critically with different educational issues (Dyment and Downing 2018). Both structured and unstructured formats of participation provided opportunities to reflect on key matters related to teaching practice; however, in doing so, Jones and Ryan (2014) showed that participants did not engage in critical reflection on their practice but developed learning by sharing experiences relevant to their specific practice-based situations. In the process of sharing personal experiences, the asynchronous features of some of these tools provided participants with additional time to reflect about each other's ideas, integrate different perspectives into their own thinking or address pedagogical challenges (Jaber et al. 2018; Rodeslier 2015). Also, those interactions that went beyond mere description of field experiences were more likely to promote in-depth discussion between participants and facilitate quality reflection (Krutka et al. 2014; Stagg and Slotta 2009). Interactions within online learning communities also provided teachers with a valuable support for peer collaboration, increased reflection and improved ability to adopt a more critical perspective in the context of their everyday practice (DeWert, Babinski, and Jones 2003; Holmes 2013). By testing learning theories, discovering different perspectives through discussion, changing teachers' beliefs and uncovering new teaching concepts (Baran and Cagiltay 2010), practitioners used online communities to construct meaning of their teaching practice. Within and outside these online communities, videos of real classrooms were outstanding tools to drive teacher reflection (Bates, Phalen, and Moran 2016; Beilstein et al. 2020), obtain practical knowledge about the profession (Baran and Cagiltay 2010; Liu 2012), and connect with course content in a practical way (Lenkaitis 2020). The most practical videos within authentic classroom situations (Baran and Cagiltay 2010; Bates, Phalen, and Moran 2016; Beilstein et al. 2020; Theelen et al. 2020) promoted the highest levels of teacher reflection and knowledge development. They supported students in accessing a range of classroom practices in a safe environment (observation), linking theory and practice in a supportive setting (contextualisation), supporting professional dialogue through the joint construction of knowledge (reflection) and developing critical personal teaching practices (action) (Wang and Wiesemes 2012). In addition to the videos, the environments or instructional interventions that offered more opportunities for getting and providing formative peer feedback, reviews or assessment promoted learning support, interactive collaborations and reflection (Dooly and Sadler 2020; Gikandi and Morrow 2016; Luo, Murray, and Crompton 2017), and were more likely to drive to knowledge development (Evens et al. 2017; Hong 2014; Jones 2010; Nicholas and Ng 2009).

The teaching presence. Although not always as the main focus of research, the element of teaching presence was included in all the papers analysed as it supported social and cognitive presence with the aim of achieving certain learning outcomes. This has already been evident in the presentation of the findings related to the other two presences, where components of a teaching presence were described to show its influence on their development. The findings presented here will therefore focus on additional, more specific pedagogical issues leading to teaching presence related to the design and facilitation of the educational experience (Holmes 2013). Key issues in the design of effective online learning environments included an accurate pedagogical approach, relevant and authentic assignments, and appropriate tools and technology. Several aspects related to the former led to teaching and learning impact: providing flexibility to foster self-pace learning while at the time setting clear expectations and timelines for the students (Ducan and Barnett 2009; Jin 2005); targeting individual needs, strengths and interests (Burgess and Mayes 2008; Chambers, Threlfall, and Roper 2012; Coole and Watts 2009; Tai et al. 2019), including also preferred e-learning styles (Coole and Watts 2009; Ducan and Barnett 2009), and users' technology experience (Chieu, Herbst, and Weiss 2011); focusing on formative assessment to enhance students' learning (Delfino and Persico 2007; Uribe and Vaughan 2017), with

a special attention to peer-to-peer forms of assessment to promote learners' participation and meaningful engagement (Gikandi and Morrow 2016; Wen and Tsai 2008); splitting the whole cohort into smaller groups (e.g., through breakout or chat rooms) for undertaking specific tasks (Biasutti and EL-Deghaidy 2014; Delfino and Persico 2007; Ducan and Barnett 2009; Nicholas and Ng 2009), and; providing an integrated approach in relation to the different knowledge domains (Anderson, Barham, and Northcote 2013; Evens et al. 2017; Niess and Gillow-Wiles 2014) as well as the elements involved in the online teaching and learning process (course content, technologies, students and teachers) (Borba, Santana de Souza, and Rangel 2018). Regarding the development of relevant and authentic assignments, some design principles included: adding an interactive component to online learning activities that enabled a constructive, dialogic approach to e-learning (Baker and Watson 2014); focusing on problems of the everyday teaching practice that promoted learners' participation and their ability to apply new knowledge (Burgess and Mayes 2008; Evens et al. 2017; Lee and Martin 2017), and; providing assignments that built on one another (Swaggerty and Broemmel 2017). Similar to the inclusion of videos (see Cognitive Presence), the use of contextualised case stories as instructional anchors made assignments more relevant to participants' lives and supported reflection and knowledge development (Luo et al. 2018). Effective practice relating to the use of pedagogical tools and technologies (e.g., gamification, animated clips, videos, wiki tools, podcasts, voice boards, virtual worlds, e-book readers, e-folio, MOOC) showed the need to use technologies that are appropriate for the task (Biasutti and EL-Deghaidy 2014; Cullen, Kullman, and Wild 2013). Moreover, the literature highlighted the need to not only mastering the tools, but to understand their pedagogical possibilities to suit their own teaching purposes (Comas-Quinn 2011; Cullen, Kullman, and Wild 2013). As teachers' predispositions towards technological tools can influence the use of these tools and their perceived value within teaching and learning contexts (Turvey 2010), understanding the pedagogical possibilities of the online tools may help address teachers' attitudes and competence related to them. An additional technology-related element leading to impact was the ease of use of online tools (Hollingsworth and Lim 2015; Ryan and Scott 2008; Teo and Wong 2013), that enhanced participation and effective online discussion. In terms of issues leading to teaching presence associated with the facilitation part, the examined literature revealed the importance of environments characterised by interaction and collaboration (see also Social Presence), as well as the active participation of both teachers and students in the online teaching and learning process. Some conditions that supported collaboration were already highlighted in the Social Presence section. However, from a pedagogical standpoint, additional intervention strategies included: to clearly outline participation requirements of the course, to ask questions addressing the integration of ideas, and to play a visible role in guiding students towards the achievement of learning goals (Pawan et al. 2003). By placing more responsibility on the students to drive their own learning (Forbes and Khoo 2015; Regan et al. 2012), the role of the teachers in effective online environments was more about facilitation than about knowledge transfer (Chigeza and Halbert 2014). Some teachers also provided students with the opportunity to perform as discussion moderators (Chieu, Herbst, and Weiss 2011; Phirangee 2016), enhancing their active role in the online process and making them co-responsible of both their own and peers' learning. Evidence on the facilitation process shed light on the importance of acknowledging and addressing socially appropriate online practices in particular countries, cultures and professional environments to positively influence students' motivation to participate in online environments (Moloney 2013; O'Dowd, Sauro, and Spector-Cohen 2019; Phirangee 2016). An essential component of teacher facilitation was also the provision of timely, constructive, specific and detailed feedback (Thurlings et al. 2014) at different stages of the learning process. This highlighted the formative component of the learning experience and put a focus on feedback as a vehicle for learning (Uribe and Vaughan 2017) (see also Cognitive Presence). Beyond the role adopted by the instructor, Muir et al. (2019) and Norton and Hathaway (2008) found that engagement and perceived quality levels of the online learning experience were the result of students' attitude and commitment. Effective learning occurred when the student was dedicated, prepared, self-motivated, had good support (Muir et al. 2019), and provided relevant comments that increased participation and quality interaction (Reeves. and Pedulla 2011; Tang and Lam 2014). In some studies, however, this was challenged by contextual limitations related to access to internet and technology (Bicen, Ozdamli, and Uzunboylu 2014; Delfino and Persico 2007; Gillies 2008; Heirdsfield et al. 2007), which disrupted students' motivation and learning.

Technology mediated pedagogy and its implications for alienation

Although the professional literature identifies feelings of alienation and low sense of community as factors that help explain relatively low student persistence rates in distance education programs, there are very few studies have attempted to investigate the relationship between these two constructs. One study used canonical correlation analysis to determine if and how a set of alienation variables are related to classroom community variables among online graduate students. The results suggested that the two sets of variables are related (Rovai & Wighting, 2005).

Results from another similar study goes on to suggests that we need to focus on a 'failure of communication' rather than on a 'failure of community' in order to help establish online learning environments that are most likely to support engaged collaborative learning. It briefly considers the problematic nature of the idea of learning communities based on belonging, and then shows how a focus on the learning community as a 'communicative event' may help us understand the issue of alienation and the complexity of the learning environment within which it might arise (Mann, 2005).

A study also explored Karl Marx's notion of alienation, and then explored a form of alienation specific to education. It examined Mikhail Bakhtin's treatment of alienation in connection with his participative thinking theory and suggested strategies for overcoming educational alienation that are based on Bakhtin's notion of the "eventness of Being." It addressed the limitations of liberal and conservative critiques of education, both of which tend to ignore forms of alienation characteristic of modern schooling regardless of the issues of educational equity and efficiency (Sidorkin, 2004).

Also, with the outbreak of the Covid-19 pandemic, countries have had to review their education policies and make adjustments accordingly. In this regard, distance education has been adopted in universities all over the world and each university has created its own distance education strategy. Distance education, once only a complementary to education, replaced traditional education when the pandemic turned out to be unlikely to end in the short run. Although some universities are experienced in distance education, this sudden pandemic has caused disruptions (digital inequality, technological infrastructure problems, etc.) and unprecedented situations catching most universities off-guard. One of these is the emergence or the change of alienation seen in academic staff due to distance education (Karahisar & Unluer, 2022). A study also found a relationship between 3 aspects of alienation: powerlessness, meaninglessness, and social estrangement, and online pedagogy among college students (Lewis, Coursol, Bremer & Komarenko, 2015).

Another study found conflicting results that implementation of web-based discussion forums might be a contributing factor to ameliorate the predicament of isolation and alienation in addition to meet the English (language) learners' need for socialization on the Internet (SazmandAsfaranjan, Shirzad, Baradari, Salimi & Salehi, 2013).

The review indicates that there is a severe dearth of studies in the Indian scenario in this regard.

Discussion and conclusion

This study has provided a review of the literature on online teaching and learning practices in higher education and has analysed them in relation to social, cognitive and teaching presence according to the CoI framework. The study has also highlighted the implications technomediated pedagogy has for alienation, the digital divide it creates and the roles and challenges from students' and the teachers' perspectives. This study has highlighted the blurring nature of the components driving to a social, cognitive and teaching presence. The ability of teachers and learners to engage affectively in relationships showed to be central to meaningful educational experiences. At the time, its interplay with components of cognitive and teaching nature was crucial to ensure teaching and learning impact. The interactions that supported social presence were multiple, iterative and reciprocal (Hou 2015) and strongly relied on mutual respect, interdependence and trust to focus on the interpersonal connection between the members involved (Ham and Davey 2005). The establishment of a cognitive presence was also subject to actions of a social and pedagogical nature, although limited attention to the specific features supporting its development was sometimes detected. Either the difficulty to distinguish the elements of the learning environments that influenced knowledge development (Evens et al. 2017) or the lack of a sound pedagogy of online education (Ham and Davey 2005) may explain this. However, from the examined literature, it was clear that the development of high-order cognitive skills required not only strong social presence, but also the ability of the teacher to guide students' collaborative efforts in the transition from content reflection to critical reflection (Kreber and Cranton 2000). This occurred as a response to a triggering event (concrete experience), which was followed by a collective process that entailed making sense of this event (exploration), integrating different ideas into a more coherent framework (integration), and developing personal teaching practices (resolution) (Garrison, Anderson, and Archer 2000). As the binding element to any educational intervention, a teaching presence interacted with the social and cognitive components in online learning practices. Several practices related to the design and facilitation of online teaching and learning were highlighted, as well as to broader issues related to the pedagogical approach. Among other aspects, practices that are contextualised (e.g., based on everyday teaching situations), personalised (e.g., targeting individual differences), social (e.g., resulting from the interaction with others), formative (e.g., focusing on the process), and integrated (e.g., considering both formal and informal ways of learning) showed to influence the effectiveness of the online teaching and learning process. In addition, an active and thoughtful participation of all the members involved in the online learning environment was core to the achievement of effective practices. Previous studies have placed a greater focus on role of the instructors (Komninou 2017; Stagg and Slotta 2009); however, this review has made clear that an effective online teaching and learning is subject to the development of a student presence that enhances supportive and productive interactions that mediate the learning process across the presences. In pedagogical terms, the need of a comprehensive and solid view of the pedagogy of online education seems obvious. This should integrate technology as an inherent part of the online teaching and learning process and take into account the pedagogical possibilities associated with online tools, i.e., the suitability and affordances of the various technologies or online resources (e.g., blogs promote discussions and facilitate reflective practice; videos help develop practical knowledge about the profession and connect educational theory with practice; online forums enable the sharing of narratives that enhance the skill of noticing; breakout or chat rooms foster belongingness and high levels of support and cooperation among group members) to make sure that the chosen tools or resources help learners achieve the desired results. In addition, this comprehensive view of the pedagogy of online education should acknowledge the complex interactions

between the components involved in the online teaching and learning process (e.g., instructors, students, task and technology factors (Borba, Santana de Souza, and Rangel 2018; Mumford and Dikilitaş 2020), including instructors' and students' previous experiences and dispositions towards online teaching and learning tools, to develop effective educational experiences that address their different (and changing) roles as well as instructors' and students' evolving identities. Contextual factors impacting the quality of the experience should not be ignored: limited access to technology and internet was a reality and continues to be a reality that the recent lockdowns and adoption of remote learning have exacerbated. These have not only affected the normal development of teaching and learning practices, but have also uncovered issues of digital inequality emerging from access to technology as well as differences in digital literacy that are deeply embedded in social, economic and cultural context (Beaunoyer, Dupéré, and Guitton 2020). The COVID-19 pandemic has increased digital inequalities further and has revealed an additional impact in terms of social support networks that are so crucial for the preservation of our interpersonal ties and social structures (Beaunoyer, Dupéré, and Guitton 2020).

Implications

This study has several implications for higher education. First, it puts accent on the need to go beyond emergency online practices to provide an evidence-based approach to online teaching and learning that acknowledges the particularities of this pedagogy and its implications. Second, it emphasises the need for a pedagogical approach that relies heavily on the social and collaborative components of learning as a starting point for the development of online teaching and learning practices (Olofsson 2007) but also of broader support structures of higher education institutions in partnership with governments and organisations to achieve equity and inclusion. Thus, it is important to minimise the factors that may contribute to exclusion and inequalities and to maximise students' participation in their learning process. Such factors include issues related to access to technological means but also issues associated with pedagogical approaches (e.g., clear goal-setting, coherent and flexible designs, explicit tasks, consistent and clear monitoring and evaluation) and different levels of interaction and engagement. Third, it highlights the different nature of the roles and competences required to teach effectively in the online higher education environment (Ní Shé et al. 2019) and at the same time makes clear the need to equip teacher educators with a set of competences in which the socioaffective is at its very core. And, finally there is a need to go beyond an instrumental approach to online teaching and learning and to include into the equation its ethical, political and pedagogical dimensions. For instance, student teachers and teacher educators' roles and responsibilities in online teaching and learning and their implications for the process of learning to teach have to be taken into account. This also includes the consideration of issues of power and control over teaching and learning, i.e., questions related to not only what and how but also who and why, which are aspects that stand at the core of the development of professional knowledge and identity.

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