

Exploring the Education Experience in Online Learning

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ABSTRACT

The COVID-19 pandemic has affected teaching and learning globally. An increase in distance learning through online digital platforms and electronic devices has created a drastic change in education. The implication of online learning continuing post pandemic is prominent. An exploratory study of the educational experience of online learning through the lens of inquiry within social, cognitive and facilitator presence was conducted. The study focuses on the experiences of 18 adult students in an 8 week short course on “*Instructional Design Tools for E-learning*”. All the participants within this course were in a role that involved online content development. Data gathered through weekly reflections and an online course evaluation survey reflects the importance, affordances and shortcomings in designing for online learning. The study reflects dynamic and authentic learning experiences and highlights the significance of design practices. An unexpected finding was the importance of learning presence as a contributing factor to the online learning experience.

Keywords: *cognitive presence; educational experience; facilitator presence; online learning; social presence*

INTRODUCTION

As the COVID-19 pandemic ravages the world, global statistics show that as countries' infection rates rise, there is a constant increase in online learning at primary, secondary and tertiary level (Reimers & Schleicher 2020). The adoption of online learning is expected to persist post-pandemic as the shift has impacted largely on the worldwide market (Li & Lalani 2020). Education as we know it, is said to have changed forever as global markets for online education projects soar. Investments into educational technology, software, hardware, and applications have seen a significant surge in usage since the rise of COVID-19 (Li & Lalani 2020). “Transitioning to online learning at scale is a very difficult and highly complex undertaking for the education systems, even in the best of circumstances,” (World Bank Group 2020). COVID-19 has created a quintessential adaptive and transformative challenge for which there is no preconfigured guide to appropriate responses.

Even though online learning is not something new, students bemoan that they do not get the personal connection that they desire from learning online (Rapchak 2017; Rivera-Vargas et al. 2021). Students tend to feel isolated and are not fully invested in the online educational community. It is therefore necessary that course designers meet the needs of students in online learning environments. Amongst the drive to go online during the COVID-19 pandemic lies the challenge of producing relevant, current, appropriate, authentic and educationally sound content (cognitive presence) in record time. Learning design must be implemented such that online courses integrate the use of technology in an engaging, interactive and collaborative manner (social presence). The learning experience should be enhanced through the support and guidance of an online facilitator (teaching presence). Creating a community of inquiry amongst online students in a very short space of time is a challenging, yet essential aspect of online course design which must be perfected.

Due to the complexities of online learning, the researchers aimed to understand, analyse, evaluate and reflect on the educational experience of adult learners completing an 8 week fully online short

course on “*Instructional Design Tools for E-Learning*”. The course was designed to address the online needs of students, and to deliver educationally sound content by using the Community of Inquiry framework. The Community of Inquiry framework is well studied and has shown to be a meaningful framework that is used for course design (Rapchak 2017). Even though the framework is said to have an intertwined nature, the cognitive presence is regarded as being the most important as this is where students construct meaning. In order to cross the transactional boundaries of physical and psychological space, teaching presence is needed in online learning (Moore 1993). Garrison et al., (2000, p. 99) describe social presence as offering students an opportunity for, “emotional expression, open communication, and group cohesion”.

This study sought to marry the 3 presences (cognitive, social and teaching presence) in the inquiry framework. In doing so, creating an educational experience that promotes best practices for online learning design and enhances the skills that are needed by students in the workplace. This leads to the research question:

How does the community of inquiry contribute to the educational experience of online learning students?

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Globally, statistics show that on 1 April 2020, schools and higher education institutions were closed due to COVID-19 in 185 countries, affecting 1,542,412,000 learners. This constitutes approximately 89.4% of the total enrolled students (Marinoni et al. 2020). These numbers have risen dramatically across the world and are continuously changing. A global survey done in April 2020 shows the impact on teaching and learning in Higher Education Institutions across the world. Never before have educational institutions so rapidly migrated to online distance learning mode (van Wart et al 2020). The impact on teaching and learning differed substantially between different regions globally and is summarised in Figure 1.

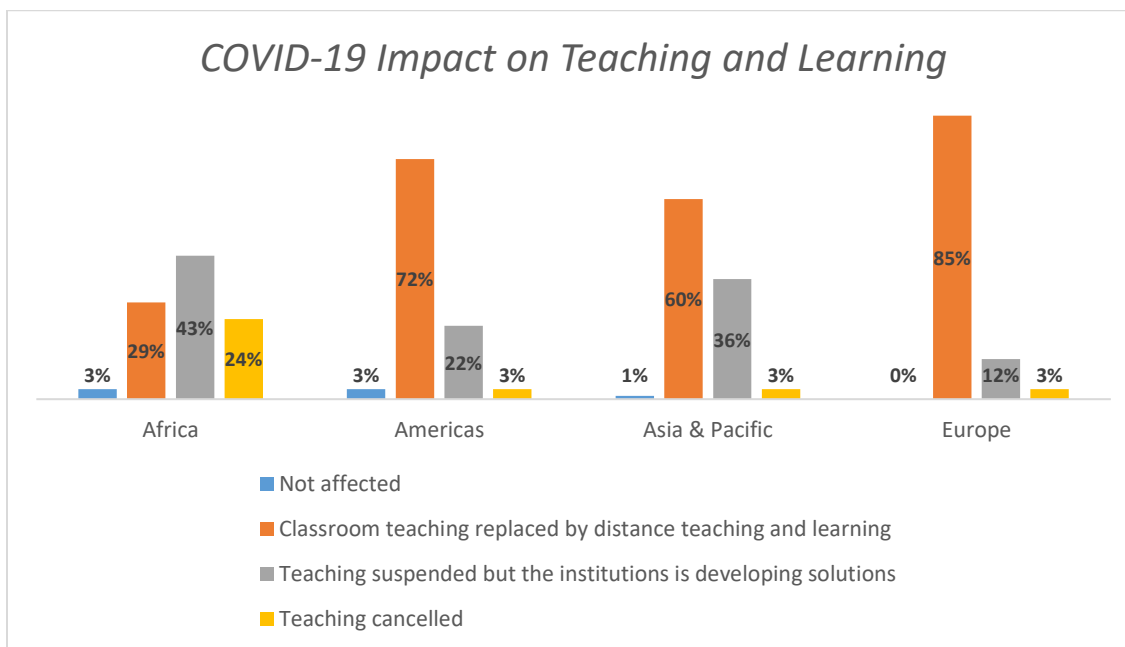


Figure 1: Impact on teaching and learning summary (adapted from Marinoni et al. 2020)

Results show that nearly two thirds of the African Higher education institutions were not prepared to teach online and they did not have the necessary infrastructure in place. This resulted in the campuses closing. The IAU Global Support Survey 2020 (Marinoni et al. 2020) does however, report that university teaching and learning staff across the world do form a consensus regarding the opportunity to develop flexible learning opportunities for blended and hybrid learning including a mix of synchronous and asynchronous learning. Within South Africa, most universities transitioned to online and hybrid modes of teaching and learning. As a result the enrolment to fully online courses on Instructional Design also increased. Most of these students are adult learners that are working in a teaching and learning environment looking for new and innovative ways to design online content.

Adult learners are individuals who attend educational training and development programmes in order to obtain some form of a qualification (Salleh et al. 2015). These learners are often interested in improving their skills (Rothes et al. 2014; Salleh et al. 2015) and developing themselves professionally (Martí-Parreñoa et al. 2016). To this end, enrolments in online courses have rapidly increased. Cumbersome to educational institutions though, is the high attrition rates of online programmes (Boston et al. 2019). Shea et al. (2014) maintain that students' inability to self-regulate is the greatest barrier to online learning success. For more than a decade online educational experiences have been dominated by a research focus on models, such as the Community of Inquiry (CoI) framework to enhance retention rates (Boston et al. 2019; Shea et al. 2014). The CoI framework is shown in Figure 2 below.

The Community of Inquiry (CoI) framework is often implemented in blended and online learning environments to encourage students, who are separated by space and time, to collectively solve problems through exploration and inquiry (Swan 2019). Core to CoI is the notion that social interaction and focussed engagement will lead to greater learning experiences as students collaboratively share ideas and discover varied solutions. In online learning CoI is used to help students connect as they reason about challenging questions or activities, encouraging them to cooperate and broaden their perspectives (Swan 2019). Even before doing so, students must develop the ability to self-monitor, self-motivate and self-reflect due to the student centered and autonomous nature of online learning (Shea et al. 2014).

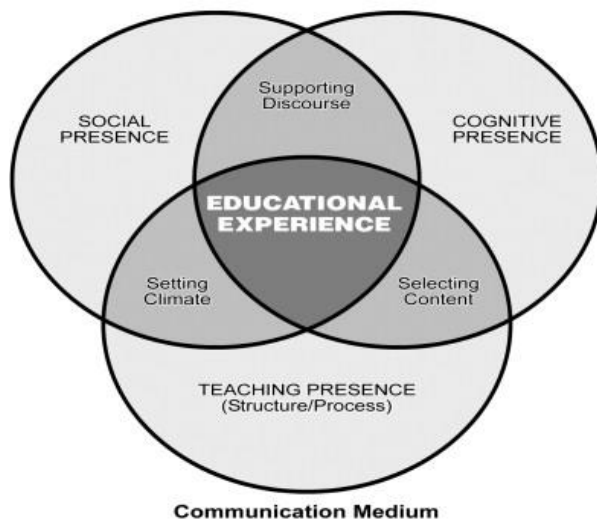


Figure 2: Community of inquiry framework (Garrison et al., 2010)

As distance mode Higher Education students increasingly search for worthwhile and meaningful educational experiences, learning designers focus on integrating the three core interaction elements into their courses: cognitive presence, social presence and teaching presence (Garrison et al. 2010) as shown in Figure 2. Cognitive presence (CP) focusses on a student's ability to construct knowledge by thinking critically and reflecting. Students are provided with a triggering event such as a problem to solve, which sets them on the path of exploration, integration, and resolution (Garrison et al. 2001). Social presence (SP) relates to individuals' expression of personal feelings and beliefs, interpersonal communication to build group cohesion and finally open communication which encourages social interaction with peers, supporting each other in the online environment (Swan 2019). Finally, teaching presence (TP) is characterised by the facilitator's choice of course design, organisation of learning events, learning facilitation and at times direct instruction, to direct students' online interactions towards the learning outcomes (Shea et al. 2014; Swan 2019).

Rovai (2007) recommends the use of different types of discussion forums to motivate engagement, where students have the option to socialise on a more personal level or participate in task-and-content oriented discussion. In the more socio-emotional forums facilitators should encourage student-student interactions, thus SP, whereas task-and-content oriented discussions lend themselves to CP and TP. Paying attention to the socio-emotional climate of an online course contributes to students' positive experience of technology and distance learning. Once social bonds have formed, developing critical discourse becomes possible if activities are purposefully designed with instructions to steer students in working towards reaching common goals (Garrison & Arbaugh 2007). Further design strategies include encouragement of personal reflections throughout the course, integrating debates, problem-based scenarios and project-based learning activities (Anderson et al. 2001). Finally TP is enhanced by prompt feedback to students, in various formats such as narratives, videos and audio and also by allowing peer reviews (Annand 2011; Nagel & Kotze 2010).

Students that plan to study online, indicated that amongst a few others, they see TP, CP and SP as part of the minimum requirements when studying online (van Wart et al. 2020). The integration of these practical Col TP, CP and SP strategies were core to the course design as the researchers sought to create a deep and meaningful learning experience for students. Time was dedicated to creating a positive learning climate which encourages open communication, purposeful engagement and the development of more personal connections (Garrison & Arbaugh 2007). In addition students were guided towards maintaining intellectual focus through the integration of activities such as content specific debates. The research questions were therefore formulated to investigate the value of establishing a community of inquiry in the educational experience of online students.

RESEARCH METHODOLOGY

General Background

The educational experiences of students enrolled for a course "*Instructional Design Tools for E-learning*" are under scrutiny in this study. The course was designed using a constructionist approach (Harel & Papert 1991) to enhance the eLearning skills of students involved in educational positions such as training, facilitating, lecturing and/or teaching. The learning designers wanted to explore the influence of the community of inquiry on student experiences during the course. As such, what students do, think, feel, say and experience was the focus of the inquiry (Erickson 1986).

The activities that the students encountered were designed to increase student engagement with content and peers focussing on the development of a learning community that enhances the

learning experience of students. To this end, a case study was used to obtain the results and interpret the educational experiences of the students. The case study design was implemented for the purpose of the study and data was analysed deductively using an interpretivist stance. Qualitative and quantitative techniques were used in the data collection and analysis process and to delineate the context of the study (Denzin & Lincoln 2000).

Sample and Participants

As the study is about experience in online learning, the participants were purposefully and conveniently selected based on their registration and participation in the *Instructional Design Tools for eLearning* course that was presented over 8 weeks, fully online. Therefore, the sample for this study consisted of 18 adult learners (n=18) that enrolled for the online course. Even though the students that registered for this course stem from different disciplines, they are all involved in a teaching and facilitating role. For this group of participants disciplines such as Graphical Design, eLearning and Higher Education, Project Management, freelance consultants and contractors, Human Resources and Finance, Mining and Construction industry were represented. Students participated on a voluntary basis in the study and their anonymity was ensured by the use of pseudonyms (P1 – P18).

Instrument and Procedures

During the course, students completed multiple assignments, either self-assessed, facilitator- or peer assessed. The activities often required students to produce artefacts (for example lesson plans, presentations, games, and ultimately a website) or use new technology tools to build interactive teaching apps (for example Glide, Google suite, H5P and Prezi). Students worked in groups at times, following the jigsaw method to allocate roles and responsibilities (for example a reflection wiki) whereas other assignments were individual (for example creating an eBook) yet required students to engage in discourse on helpful hints, lessons learnt and the like. They had therefore experienced the influence of being part of a learning community as an integral part of their course. Additionally, they also had to reflect every week on their learning journey highlighting the emphasis placed on the influence of self-reflection on the learning process (Bers et al. 2002; Tavil 2014; Veenman et al. 2006). Their reflections were structured according to their experiences, their newly obtained knowledge and the implementation thereof in their working environment. These reflections were done in different formats, from writing a paragraph in which the three questions were answered to recording a voice note or even creating a comic strip regarding their experiences (see Figure 3).

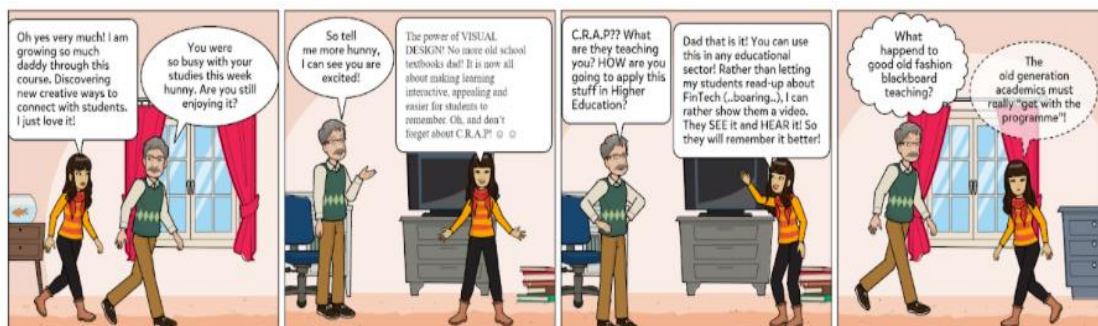


Figure 3: Comic strip reflection about design principles

Apart from the activities described, students had to participate in discussion forums and they had to collaboratively build a knowledge base by creating wikis on selected topics. An online Coffee Shop provided an opportunity to bounce ideas with their peers and a Facilitator Emergency Room was available for pressing questions. This illustrated their experiences in a more practical stance and demonstrated their commitment and determination in completing the tasks.

Students also had to complete a survey before they could hand in their final assignment, a website on which they have incorporated the knowledge, skills and tools learned during the course. The survey has nineteen 5-point Likert scale questions and six open-ended questions.

Data Analysis

The data used for this study was from the weekly reflections and the student survey. While the weekly reflections shed light on the attitudes of the students towards the intentionally designed learning environment, the survey provided information regarding the importance, affordances and shortcomings in designing for online learning. The data (reflections and survey open-ended questions) were extracted from the Learning Management System (LMS) and read with the research question in mind. Focus was placed on how students experience the Cognitive, Teacher and Social presences in this course. Themes were highlighted and analysed deductively in search of how the Col contributes to their learning experience (Kyngas & Kaakinen 2020). The survey data (Likert scale questions) were opened in MS Excel and formulas (COUNTIF) were used to summarize the responses and then charts were created. The descriptive statistics from Excel provided information regarding the context of the study and the thematic analysis employed in the analysis of the reflections revealed information on the students' experiences regarding the social, cognitive and teaching presence in the course design.

RESEARCH RESULTS

The results from the survey and weekly reflections revealed that all three of the expected presences that were mentioned in the literature were in fact evident. A thematic analysis of the survey showed that the interdependent nature of the three presences were acknowledged by the students. Students were able to identify with the climate of online learning, how and why specific content was selected and how their active participation supported discourse. The results are structured to highlight the interdependent nature of the three presences and are supported by quotes and comic strips created by the students which reflect their educational experience.

Cognitive Presence

Cognitive presence refers to the practicing of critical thinking skills, reflective practices and problem-solving (Anderson et al. 2001). In this constructivist approach to learning, the students were challenged on a weekly basis to work together, and to apply what they know in their work environment. They were challenged to solve problems based on an educational need such as creating an app without coding, that can be used in their educational environment. In one of the items in the survey, the students were asked to indicate the influence of the course on their cognitive skills. They confirmed (94%) that the module helped them to develop their intellectual, critical or creative thinking, reasoning and problem-solving skills. The responses are illustrated in Figure 4 below.

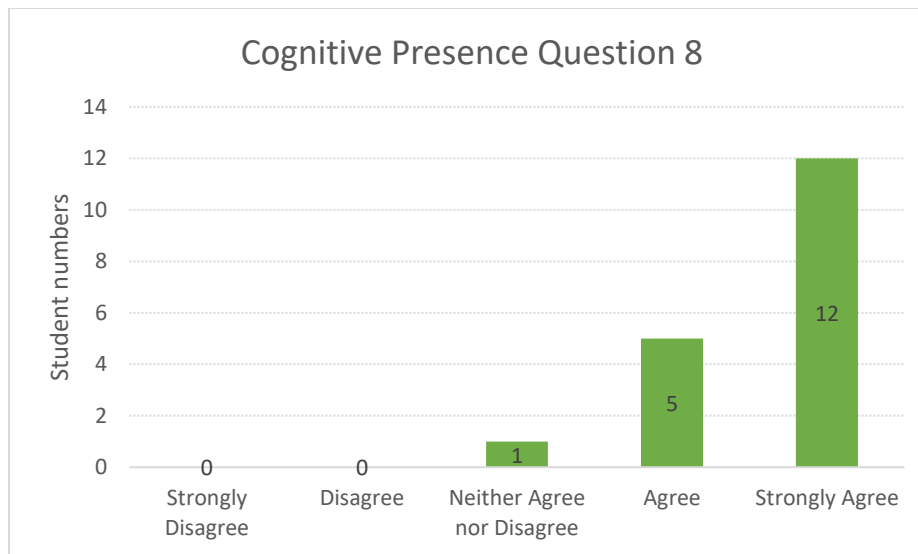


Figure 4: Cognitive Presence

These results are supported by comments students made in the open-ended questions of the survey. As students worked through the content they were challenged and this gave them the opportunity to keep on learning, use applications in ways that they did not think was possible. These experiences stimulated the learning of the students and instigated volumes of learning as described by P17:

“The mere fact that I was learning so much about e-learning and the various tools on the internet that would add to my current pool of skills greatly. It provided a crucial understanding of many aspects of designing online content for educational purposes, this skill has never been needed more right now than ever.” [P17]

The learning curve was not easy as students had to apply activities and tools that they had not used before or apply the tools in new and unfamiliar ways in their environment. Since each student’s background differed, it was not possible to give direct guidance to each of the students, so sourcing help from both the facilitators and their peers was encouraged. The following quote summarized the student’s victory:

“This course has improved and equipped some of my soft skills. From problem solving, working in teams, time management and all the way to project management.” [P18]

Students were able to contextualise the content since the assignments focussed on the development of skills and not the learning content to be used in the various online tools encountered. In addition, they were keen to see how the same content could be developed with multiple variations for different contexts and for that purpose the designers included a virtual wall (padlet) wherein they could share their artefacts with their peers. They believed that there would be value in the variations as it would allow them a multitude of options and methods to create content. P11 does however acknowledge that this would be time consuming and can be applied in their own settings as illustrated below.

“It would be interesting if weekly assignments were not open to any topic. A scenario will give the learner a box to think within making it more challenging though will require more time. It will also be interesting to see variations of the same topic.” [P11]

Students acknowledged the influence of the course on the development of their creativity (Figure 5) and furthermore reported on the opportunities for the application of the new knowledge in their own working environments.



Figure 5: Comic strip reflection about creativity

The importance of rubrics was demonstrated as students used this as a guide to structure their activities and develop their content. They also understood that a well-structured rubric may even clear up any preconceived misconceptions as they also experienced this themselves. As mentioned:

“Some of the instructions were not as straightforward to understand as I would have liked but the rubrics made up for shortcomings in instruction.” [P10]

The value of learning by example cannot be underestimated. By being involved in the learning experience, students gained insight in practices that could influence their attitude towards communication in an online environment and that could be employed in their own online presentations by imitating the experiences encountered. This illustrated the nature of supporting discourse more clearly. As remarked:

“The format of the course and the way we communicate with peers and lecturers, gave me a much more positive perspective on electronic communication.” [P14]

Some unexpected outcomes from the course came from the students' open-ended responses. The importance of creating an online climate that supports and builds confidence was very relevant as explained by P5.

“I loved being creative, and a lot of technological tools. As we grew in the course it gave me more self-confidence to go and search for what I am not sure about. Basically it taught me to become comfortable in an uncomfortable environment!” [P5]

Feedback provided insight to the facilitators about the lessons that were learned by students and lessons that facilitators could use to revise and improve the course. P8 explained how the experience of the course had influenced her thinking of how to design online content and some of

the lessons she learned whilst P1 provided suggestive changes to the facilitators for improvement from the students' perspective. The overlap between cognitive and teaching presence is evident here as the interdependent nature plays an intricate role in selecting the appropriate content and designing the content in a suitable way to support best practices.

“That I CAN do online research and enjoy doing it. To use straightforward and clear instructions in short sentences. To be creatively stimulated and challenged when completing assignments on topics that were far outside my experience and comfort circle. I really enjoyed discovering the many different platforms available to utilise in e-learning.”
[P8]

Teacher Presence

One of the significant purposes of the survey was to provide the facilitators with feedback about the design of the module and the facilitation. These questions resonate with the teaching presence of the Community of Inquiry framework (Shea et al. 2014; Swan 2019). Survey questions that relate to the design of the module were about appropriate workload (Q9), easy navigation (Q10) and whether the activities adequately prepare the students for the assessments (Q14). The student responses with regard to these questions were 72%, 89% and 100% respectively (Figure 6).

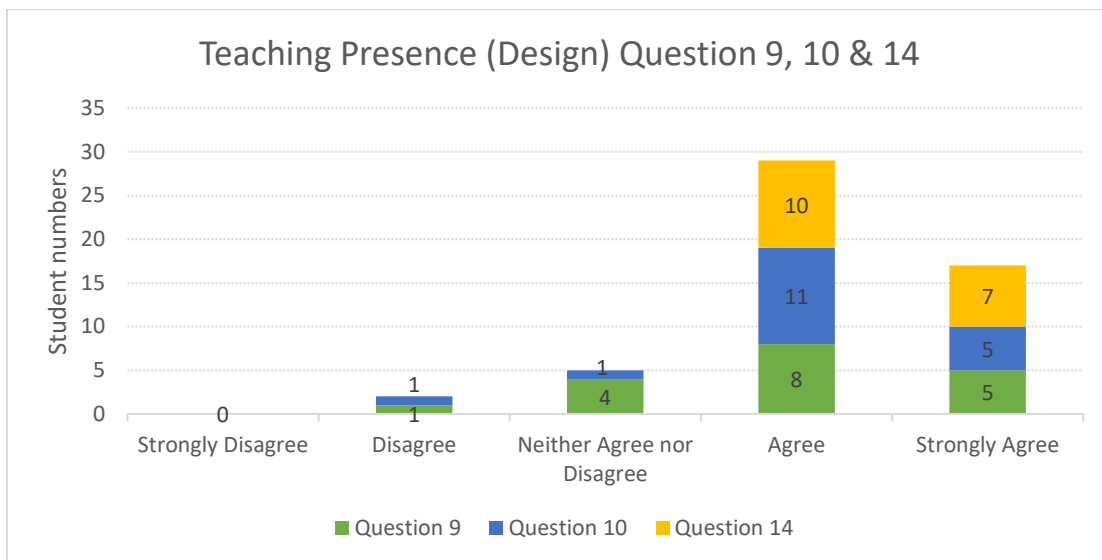


Figure 6: Teaching Presence (Design)

Although learning activities reside under teaching presence, it plays a vital role in cognitive presence. Teaching presence includes course design, the organization of the activities, the facilitation and the online interactions with students (Shea et al. 2014; Swan 2019; van Wart et al. 2020). While the design impacted the selection of activities it simultaneously influenced how students think, reflect and solve problems. Learning activities were designed to facilitate a cognitive and teaching presence. The questions that relate to the learning activities showed that 83% of the students reported that the learning material (Q5) was clear while 94% agreed that the activities contributed to their learning (Q7). According to the survey, 94% of the students agreed that the activities were in line with the outcomes of the module (Q6) and that they were exposed to a variety of tools (Q20). To determine whether the outcomes of the course were met, two items regarding

the fairness of the activities (Q15) and whether these activities were beneficial for their learning journey were included in the survey (Q16). It was interesting to note that in only one of the items, the option “disagree” featured. The results pertaining to the items regarding the teaching presence are displayed in Figure 7.

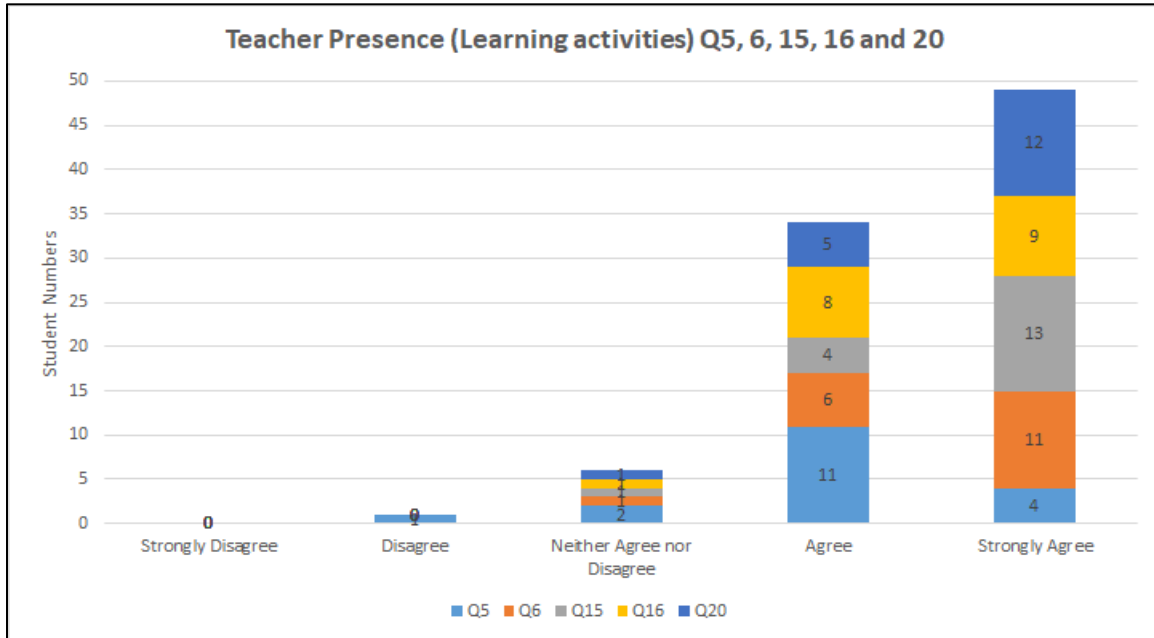


Figure 7: Teaching Presence (Learning activities)

Although the overall impression of the teaching presence was positive, there was room for improvement. A few students expressed their need for more interaction (P12) and more support (P16). Some of the instructions were not clear (P5) and that led to misunderstandings especially for students that are not trained teachers (P1). They also requested that more emphasis be placed on practical eLearning skills rather than pedagogy and teaching and learning skills (P8). A possible solution might be to create a Glossary of all the relevant theoretical phrases, so that more time can be spent on eLearning design.

While many of the questions on the survey related to the course design, the organization of the activities, the facilitation and the online interactions with students (support and feedback) also reflect on facilitator behaviour. It was important to understand how the facilitator behaviour or interaction was received by the students. Two questions addressed the issue of facilitator feedback. From the students that responded to the questions, 83% agreed that the feedback was helpful (Q17) and 94% indicated that it was received within a short period of time (Q18) (Figure 8).

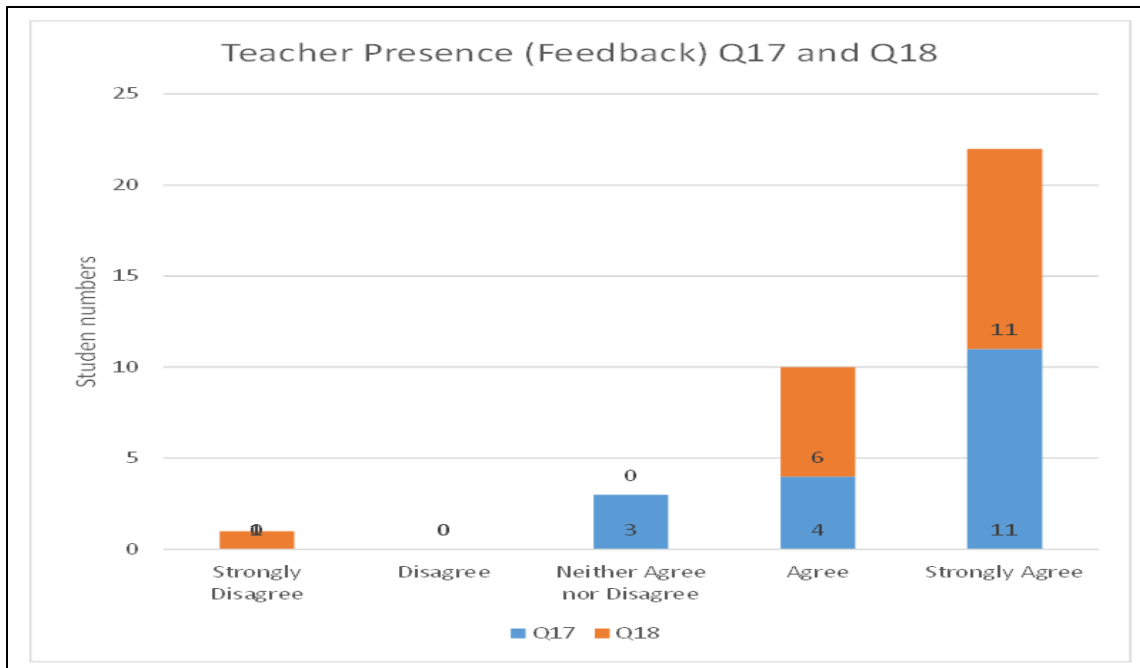


Figure 8: Teacher Presence (Feedback) Question 17 & 18

Social Presence

Social presence refers to focused engagement, which does not include cognitive interaction. It relates to feelings, communication and support that is created between students and many times resulted in strong group cohesion (Rovai 2007). The items in the survey that related to social presence were about respect and facilitator communication. Ninety four percent of the students agreed that when communicating with them, the facilitators showed respect (Q2). They communicated clearly (94%, Q4) and encouraged students to participate (94%, Q12). However, only 72% agreed that they benefited from participating in group activities (Q13) (Figure 9).

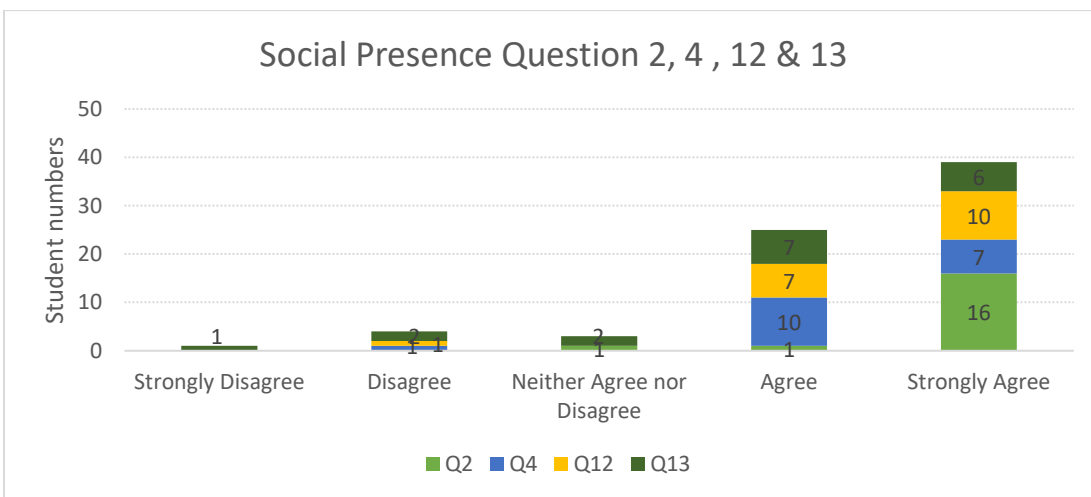


Figure 9: Social Presence

Given the importance of social presence in a course, the designers created a space especially to promote increased student involvement. A Coffee Shop discussion forum was designed as a space where students could interact and engage with each other without facilitator interference. The intention behind this was to encourage and support peer interaction and provide a safe place for students to communicate with one another. Interestingly, this space was often visited by the students. The students experience the value of being part of a learning community as can be seen in the following comment:

“Time was not on my side just given my studies and my job other than that, I only faced difficulty understanding some instructions and would find myself often consulting with the coffee shop comments and posts to see if anybody else was experiencing the same problems as me of which they were and I managed to navigate my way through these challenges.” [P17]

It seems as if engagement in the coffee shop discussions aided in the learning experience, not only being in the same space as other students but also in the learning that occurred as a result of communicating with peers and the sharing of information and ideas. The coffee shop was in no way the only platform used by the students for communication. The WhatsApp groups that the students formed spontaneously served as proof of their need for spaces whereby the social presence in the learning experience could be realised.

To enhance the facilitator-student interaction, a Facilitator Emergency Room discussion forum was developed. This highlighted the interdependent nature of teaching and social presence to create a climate that is conducive to learning and active engagement. Students had direct access to the facilitators and their queries were addressed as soon as possible. This space served also as a “frequently asked questions” application as students could read each other’s questions and the responses from the facilitators. Comments by P18 reflect the positive experience of the teaching presence provided through the implementation of the Facilitator Emergency Room.

“During week 6, I struggled with the storyboard activity 1. I found the instructions to be a bit vague and realised that I was not the only one when I spoke to my fellow classmates. However, the coffee shop and the facilitator emergency room helped a lot.” [P18]

The Facilitator Emergency Room was monitored twice a day. Among the students, 89% agreed that the facilitators were available to provide support (Q3) while 72% stated that they received sufficient support from the facilitators (Q19) (Figure 10). This illustrated the students’ acknowledgement of the facilitator’s availability and willingness to provide support. It is important to note that the teacher presence can also be viewed as social presence, again emphasizing the interdependent nature of social and teacher presence.

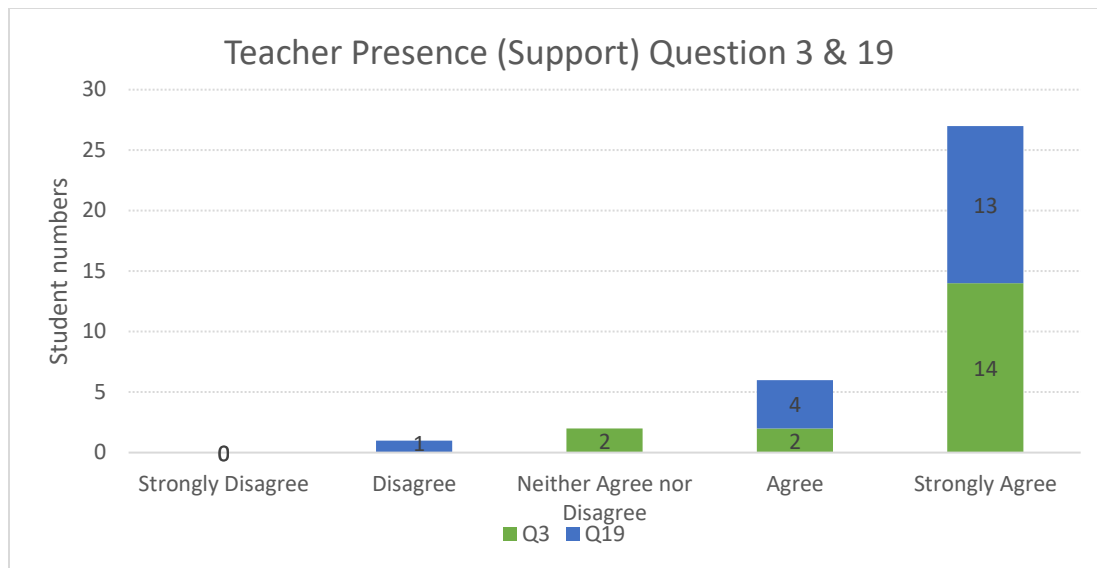


Figure 10: Teacher Presence (Support)

What came as a surprise was the fact that students felt a sense of acknowledgement and accomplishment when the facilitators praised their good work using a Bragging Rights wall. This wall illustrated a few of the best submitted activities for the week to add to the educational experience of the students and provide good examples of what was expected. It was created after the facilitators realised that students could learn from each other's artefacts and included it in the course after the initial design. It serves as encouragement to stay in close contact with the experiences of your students in the facilitation process and to experiment with different ways to enhance the learning process.

"I loved Bragging rights! It was very helpful to see other learners work and measure yourself against it, I missed that in the latter part of the course. Think it could be useful to have each one teach one Forum where learner; could share and coach on request." [P7]

As expected, not all of the students were entirely satisfied with the extent to which opportunities for social presence were enhanced in the course. The following student stated that he/she expected more from an eLearning perspective. Comments like these inspire designers to look into even more opportunities to facilitate the student's needs in educational experiences as it touches on all three presences.

"I think the course can be a lot more interactive. I expected more from an eLearning perspective. We were provided with the limited resources and had to google and YouTube to find our way around. I don't think that is really what one paid for. I can understand that there is an element of self-study required to do the activities, but not entirely. It did improve a little bit with the pockets of information, but it is still not at the level of what I would think a specialist unit ... can develop. Thank you very much for this course, all the assistance, and bearing with me. I am going to miss working on this every night. Best of luck with the next group of students!" [P12]

While the module was well received, certain aspects needed to be addressed. In spite of creating spaces for online participation both cognitively and social, some students still felt frustrated and

isolated. The positive side was that the students experienced what their students might experience, and this might be for them a warning of what to be on the lookout for. A question posed was, "What have you learnt that you didn't expect to learn or that wasn't measured?" P7 responded:

"The frustrations of online students. I realized how difficult it is to make instructions clear for complex tasks. The feeling of isolation when you don't have a warm body next to you to ask, clarify or brainstorm with. As an extrovert, I missed that." [P7]

DISCUSSION

The culmination of the three presences emphasises the educational experience of these students. Each presence contributed not just singularly but jointly to the educational success of students' knowledge and skills. It was evident from the data and student responses that cognitive presence remains at the forefront of the Col theory (Garrison et al. 2001) as it allowed students the opportunity to solve problems, explore and integrate what they learned. They developed skills of critical thinking and reflected on their developed artefacts. The Coffee Shop interactions confirmed the need for a social space for interaction, discussion, support, and expression of personal feelings as explained by Swan (2019). It is here that students experienced group cohesion and they became open to contributing to solving problems. The Facilitators Emergency Room proved to be very valuable to students as they felt the teaching presence in the facilitators prompt responses and feedback. This helped direct instructions and guided students towards achieving the learning outcomes as suggested by Shea et al. (2014). The core notion of the Col is to focus on social interaction and engagement as this leads to a greater learning experience where students can share ideas and discover using various solutions.

Drawing on the importance of course design practices, the intertwined nature of SP and CP supporting discourse was clearly evident as many students acknowledged how learning with others enhanced their knowledge and skills. The true value is also expressed in how they described their experiences of communication and facilitation with the facilitators. The convolution of CP and TP can be seen in how students respond to the content and acknowledge the nature of the course design. They were able to make the link between what needed to be explored and what needed some direct instruction to scaffold their learning. This meaningful learning showed their interest to improve their skills (Rothes et al. 2014; Salleh et al. 2015). The intricate nature of TP and SP is expressed several times as the students described how the online environment created a space of comfort and accommodated learning to take place. This online climate removed the intimidation and insecurities that they previously had due to unfamiliar settings.

Surprisingly, the data also revealed the importance of a 4th presence which was established among the online learning community, very prominently. In the student's engagement with CP, SP and TP, learning presence (LP) of both stronger and weaker performing students emerged. Students themselves established LP as an integral part of building their Col through each stage of the online course, with the course designers merely creating a platform to do so. 'LP is defined by the phases of forethought, performance, and reflection associated with self-regulated learning, but with emphasis on the goals and activities of online learners specifically' (Shea et al. 2014, p. 10). Students were encouraged to seek advice from peers on challenging course aspects, plan and coordinate individual and group activities, share their learning discoveries with peers, offer peer support and share personal reflections to show how they have changed throughout the learning journey.

The manner in which the course was designed (weekly activities, combination of objective and subjective assessments), the way the activities were planned (peer, individual, combination of

technology, explorative nature), the encouragement of interactions (introduce yourself, discussions, blogs, wiki, coffee shop, facilitator emergency room), the focus on feedback (rubrics with feedback provided, collaborate session, weekly announcements) and the scaffolding of learning towards a final assignment, all contributed to the success of the course. This success translates into the success of the students. The success of the students is evident when they described their experience during this course as “giving me self-confidence”, “improved and equipped my soft skills”, “I can do online research”, “creatively stimulated”, “discovering the many platforms” and “learning so much”.

CONCLUSIONS AND IMPLICATIONS

In addressing the research question it was found that the interdependent nature of the three presences were prominent as found in many other studies (Arbaugh & Hwang 2006; Garrison & Arbaugh 2007; Garrison et al. 2004). Cognitive presence was confirmed in the construction of knowledge and skills and reflected on in the social forums and student reflections. These sustained reflections demonstrated the importance of social discourse that was promoted by communication with peers and the facilitators and proved to be invaluable as the students expressed the benefits of the course design supporting group cohesion for deeper learning. Teacher presence was prominent in all forms, from course design, online facilitation and prompt constructive feedback. The active social engagement and communication not only facilitates discourse but also sets a climate for knowledge construction and skills development. This interaction and discourse are key to higher-order learning (Hoskins & van Hooff 2005). The design of activities and the selected content lend itself to successful online learning as mentioned by Anderson et al. (2001) as it creates a form of interconnectedness amongst students and the student and facilitator (Shea et al. 2014). Social presence creates an environment for students to interact and build relationships, which improves the socio-emotional climate of online courses.

The added value to this is that this climate supports the mastery of content and also touches on aspects of “hidden curriculum” that are learned through the process. As the community of inquiry progressed in naturally establishing a climate of engaging and open communication of purposeful activities, the development of personal connection and socio-emotional connections were evident. The addition of learning presence, which otherwise has not been explicitly researched, is an indication that further exploration into the nature of designing online courses should be done. This cohort expressed their educational experience to include the aspect of self-regulated learning when performing activities as noted by Shea et al. (2014) as learning presence.

The implications of this study can be denoted by the lessons learned by the facilitators to improve and revise in the next iteration of the course. As eLearning adoption has increased in recent years, education, as we know it before COVID-19, will not return (Li & Lalani, 2020) so the lessons learned from this study will also be helpful to teachers and learning designers in the post-pandemic world. The impact of clear instructions and simple rubrics provided students with not only guidance but a feeling of comfort and confidence to complete activities. Additional information and scaffolding videos, known as Pockets of Information to assist students with technical challenges, provided a teaching presence. Personalised videos and weekly welcome emails established a social and emotional connection that encouraged critical discourse around the content at hand. Discussion forums that created a safe space for students to interact with peers and seek assistance from the facilitators proved to enhance student learning and actively develop the skills. A glossary of relevant theoretical phrases and educational terms is needed to bridge the gap between students from different educational backgrounds.

The findings of this study cannot be generalised due to the limitation of a small sample size. It is the researchers' intention to conduct comparative studies between different cohorts of students to unpack the nature of the Col and elucidate the possibility of a 4th presence; learning presence.

Further recommendation for future study is to explore the theoretical and practical implications of the Col framework in other fully online modules within different disciplines.

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REFERENCES

- Anderson, T., Rourke, L., Garrison, D. R. & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks*, vol. 5, no.2.
- Annand, D. (2011). Social Presence within the Community of Inquiry Framework. *International Review of Research in Open and Distance Learning*, vol. 12, no. 5. DOI: [10.19173/irrodl.v12i5.924](https://doi.org/10.19173/irrodl.v12i5.924)
- Arbaugh, J. B. & Hwang, A. (2006). Does “teaching presence” exist in online MBA courses? *The Internet and Higher Education*, vol. 9, no. 1, pp. 9–21.
- Bers, M. U., Ponte, I., Juelich, K., Viera, A. & Schenker, J. (2002). Teachers as designers: Integrating robotics in early childhood education. *Information Technology in Childhood Education Annual*, vol. 2002, no. 1, pp. 123–145.
- Boston, W., Díaz, S. R., Gibson, A. M., Ice, P., Richardson J. & Swan, K. (2019). An exploration of the relationship between indicators of the community of inquiry framework and retention in online programs. *Online Learning Journal*, vol. 13, no. 3. DOI: [10.24059/olj.v13i3.1657](https://doi.org/10.24059/olj.v13i3.1657)
- Denzin, N. K. & Lincoln, Y. S. (2000). *Handbook of qualitative research*. Sage.
- Erickson, F. (1986). Qualitative Methods in Research on Teaching. In M. C. Wittrock (Ed.), *Handbook of Research on Teaching* (3rd ed., pp. 119-161). Macmillan.
- Garrison, D. R. & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues and future directions. *Internet and Higher Education*, vol. 10, pp. 157-172.
- Garrison, D. R., Anderson, T. & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, vol. 2, no.2/3, pp. 87– 105. doi:10.1016/S1096-7516(00)00016-6
- Garrison, D. R., Anderson, T. & Archer, W. (2001). Critical thinking, cognitive presence and computer conferencing in distance education. *American Journal of Distance Education*, vol. 15, no. 1, pp. 7–23. <https://doi.org/10.1080/08923640109527071>
- Garrison, D. R., Anderson, T. & Archer, W. (2010). The first decade of the community of inquiry framework: A retrospective. *The Internet and Higher Education*, vol. 13, pp. 5–9. <https://doi.org/10.1016/j.iheduc.2009.10.003>

- Garrison, D. R., Cleveland-Innes, M. & Fung, T. (2004). Student role adjustment in online communities of inquiry: Model and instrument validation. *Journal of Asynchronous Learning Networks*, vol. 8, no. 2, pp. 61–74. http://www.sloan-c.org/publications/jaln/v8n2/pdf/v8n2_garrison.pdf
- Harel, I. & Papert, S. (1991). *Constructionism*. Ablex, Norwood.
- Hoskins, S. L. & van Hooff, J. C. (2005). Motivation and ability: Which students use online learning and what influence does it have on their achievement? *British Journal of Educational Technology*, vol. 36, no. 2, pp. 177–192.
- Li, C. & Lalani, F. (2020). The COVID-19 pandemic has changed education forever. This is how. Available from <https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/> [Accessed 08 March 2021]
- Kyngäs H. & Kaakinen P. 2020. Deductive Content Analysis. In: H. Kyngäs, K. Mikkonen, M. Kääriäinen (Eds), *The Application of Content Analysis in Nursing Science Research*. Springer.
- Marinoni, G., van't Land, H. & Jensen, T. (2020). The Impact of COVID-19 on Higher Education around the world: IAU Global Survey Report. Available from https://www.iau-aiu.net/IMG/pdf/iau_covid19_and_he_survey_report_final_may_2020.pdf [Accessed 08 August 2021]
- Martí-Parreñoa, J., Seguí-Masa, D. & Seguí-Mas, E. (2016). Teachers' Attitude towards and Actual Use of Gamification. *Procedia - Social and Behavioral Sciences*, vol. 228, pp. 682–688.
- Moore, M. G. (1993). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical principles of distance education* (pp. 22–38). Routledge.
- Nagel, L. & Kotze, T. (2010). Supersizing e-learning: What a Col survey reveals about teaching presence in a large online class. *The Internet and Higher Education*, vol. 13, no. 1–2, pp. 45–51. DOI: [10.1016/j.iheduc.2009.12.001](https://doi.org/10.1016/j.iheduc.2009.12.001)
- Rapchak, M. E. (2017). Creating a Community of Inquiry in Online Library Instruction. *Journal of Library & Information Services in Distance Learning*, vol. 11, no. 1-2, pp. 59-67. DOI: 10.1080/1533290X.2016.1226577
- Reimers, F. M. & Schleicher, A. (2020). A framework to guide an education response to the COVID-19 Pandemic of 2020, Learning Portal: Planning education for improved learning outcomes. Available from https://globaled.gse.harvard.edu/files/geii/files/framework_guide_v2.pdf [Accessed 08 March 2021]
- Rivera-Vargas, P., Anderson, T. & Cano, C. A. (2021). Exploring students' learning experience in online education: analysis and improvement proposals based on the case of a Spanish open learning university. *Education Technology Research Development*, vol. 69, pp. 3367–3389 <https://doi.org/10.1007/s11423-021-10045-0>

- Rothes, A., Lemos, M. S. & Gonçalves, T. (2014). Motives and Beliefs of Learners Enrolled in Adult Education. *Procedia - Social and Behavioral Sciences*, vol. 112, pp. 939-948. doi:<https://doi.org/10.1016/j.sbspro.2014.01.1252>
- Rovai, A. P. (2007). Facilitating online discussions effectively. *The Internet and Higher Education*, vol. 10, no. 1, pp. 77-88.<https://doi.org/10.1016/j.iheduc.2006.10.001>
- Salleh, K. M., Khalid, N. H., Sulaiman, N. L., Mohamad, M. M. & Sern, L. C. (2015). Competency of adult learners in learning: Application of the Iceberg Competency Model. *Procedia - Social and Behavioral Sciences*, vol. 204, no. 2015, pp. 326 – 334.
- Shea, P., Hayes, S., Uzuner-Smith, S., Gozza-Cohen, M., Vickers, J. & Bidjerano, T. (2014). Reconceptualizing the community of inquiry framework: An exploratory analysis. *The Internet and Higher Education*, vol. 23, pp. 9–17. <https://doi.org/10.1016/j.iheduc.2014.05.002>
- Swan K. (2019). Social Construction of Knowledge and the Community of Inquiry Framework. In: I. Jung. (Ed), *Open and Distance Education Theory Revisited*, SpringerBriefs in Education. Springer. https://doi.org/10.1007/978-981-13-7740-2_7
- Tavil, Z. M. (2014). The effect of self-reflections through electronic journals (e-journals) on the self-efficacy of pre-service teachers. *South African Journal of Education*, vol. 34, no. 1, pp. 1-20.
- Van Wart, M., Ni, A., Medina, P., Canelon, J., Kordrostami, M., Zhang., J. & Liu., Y. (2020). Integrating students' perspectives about online learning: a hierarchy of factors. *International Journal of Educational Technology in Higher Education*, vol. 17, pp. 53 <https://doi.org/10.1186/s41239-020-00229->
- Veenman, M. V., Van Hout-Wolters, B. H. & Afflerbach, P. (2006). Metacognition and learning: Conceptual and methodological considerations. *Metacognition and learning*, vol. 1, no. 1, pp. 3-14.
- World Bank Group. (2020). Rapid Response Briefing Note : Remote Learning and COVID-19 Outbreak. Available from [Accessed 8 March 2021] <http://documents.worldbank.org/curated/en/266811584657843186/Rapid-Response-Briefing-Note-Remote-Learning-and-COVID-19-Outbreak> [Accessed 8 March 2021]