Beyond Connectivity: Using the Community of Inquiry Model to enhance Korean University Students' Engagement in the Online Learning Environment Amidst Covid 19 pandemic.

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Introduction

The tremendous impact of the Covid 19 pandemic forced the schools to operate remotely, employing technology-enabled pedagogy. Prepared or not, teachers must utilize digital tools and use Computer-Mediated Communication (CMC) to deliver content actively. In countries where Information technology infrastructures are highly established and maintained, Connectivity may not be considered a problem; however, staying connected with the students is of utmost concern. The unexpected shift from face-to-face to online learning created a disconnect between and among learners and teachers because of the limitation of body language, emotional expression, and social interaction.

In South Korea, the transition to online education has been primarily smooth because of its high-end IT infrastructures;75% of households had access to computers, and 99.5% had internet access. The government also expanded public infrastructure by increasing e-learning platforms' capacity to support millions of students (Kalenzi, Bak, Yim, 2020) during these unprecedented times. Learning is therefore accessible anytime, anywhere.

However, a survey conducted by Albamon heaven(2020) revealed very low satisfaction rates among students regarding their online learning experience. Even to the extent that 50% of the students considered taking a leave of absence, 25.7% said they are in distress. This result prompted the ministry of education to mandate all universities to promote better connectedness to address dissatisfaction and Lack of students' Engagement in the online learning environment. The university I am connected to also stands with this call for better facilitation of learning in the online learning environment. Faculty members are encouraged to employ techniques that will keep the communication with the students going and therefore be more engaged in inter-thinking and co-construction of learning.

The biggest challenge in my area of teaching is not the absence of available technological tools for instruction but its use in enhancing Engagement in the online learning environment, primarily so that students are used to the face-to-face modality. Furthermore, handling a class where the medium of instruction, the students' diversity in terms of levels in using English, and the nature of the subject becomes a great challenge in facilitating learning. I observed that a Lack of proficiency contributes to a lack of willingness to communicate. Hence, migration to the online learning environment makes it even more challenging.

Engaging students is considered a critical factor in students' academic success (Buelow et al., 2018). Garrison & Arbaugh(2007) claim that Engagement can be enhanced by three 'presences': social presence, teaching presence, and cognitive presence. Garrison, Anderson, & Archer (2003), Laurillard(2002), and McConnell (1994) claim that effective conversations, interactions, and collaborations play an essential role in increasing students' involvement, Engagement, achievement, and satisfaction in the learning process. Guldberg & Pilkington (2007) also argue that merely forming a discussion group and providing the technology for it to function will not lead to learning. My role as a teacher in this online learning context is to facilitate purposeful discussion, inter-thinking, and co-construction of knowledge. Ultimately, "digital pedagogy is about human relationships, the complexity of humans working together with other humans — the challenge of finding ways to teach through a screen, not to a screen." (Stommel, J.et.al, 2020).

Although the number of higher education students studying online and taking online courses continues to grow, there are still gaps in the research, literature, and models to guide academic practice, including the complexities of online learning and strategies to support Engagement. (Allen, Seaman, Poulin, Straut, 2016, cited in Redmond, eta.al.,2018).

With these in mind, my action research aims to determine the effect of using the Community of Inquiry(CoI) model on Korean University Students' Engagement in the online learning environment amidst the covid 19 pandemic.

The Problem

Online Engagement is a buzzword since the outbreak of Coronavirus. Teachers around the world are challenged on how to engage their students in a class where physical distance is necessary. Teachers are forced to use online and offline tools that can help in providing a complete educational experience for students. This shift from face-to-face to online learning changed the landscape of education. In my class, I have observed that the sudden shift created silence. My students seem uncomfortable facing the camera or quite hesitant to participate in the discussion. Their unwillingness to participate in the initial group activities I created has also intensified. Some students were not willing to turn on their camera, while some were just waiting for the others to break a conversation. This made me realize that Connectivity and the availability of all the digital online platforms do guarantee better Engagement in the online learning environment. As Stommel, J. et al.(2020) say, **"Before we can turn to tools, we must reflect on**

who we are as teachers, where our pedagogies come from – the wherefore of our teaching." (Stommel, J. et al., 2020) and to focus on how we can facilitate inter-thinking and co-construction of knowledge through the screen.

The problems stated above prompted me to explore answers to the question: What effect can the Community of Inquiry Model have on Korean University Students' Engagement in the online learning environment amidst the Covid 19 pandemic?

Specifically, I also sought answers to the following Cycle research questions, which were developed as I reflected on the Intervention:

Cycle 1: If I create a discussion forum through the University LMS and Audio Recorded reflection, what effect will it have on the students' cognitive and Social Engagement in the online live sessions?

Cycle 2: If I use kakaotalk and youtube videos with Korean subtitles, What effect will it have on their cognitive and Social Engagement in the online learning environment?

Cycle 3: If I add collaborative activities during the online live sessions and Video recorded reflections, What effect will it have on their Cognitive and Social Engagement?

The Community of Inquiry Framework

This study is anchored on the Community of Inquiry(CoI) model by Garrison et al. (2010), which "assumes that learning occurs within the Community through the interplay of three core elements" (Garrison, Archer &Anderson, 2000, p88). An educational community of inquiry is a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding. The Community of Inquiry theoretical framework represents a process of creating a deep and meaningful (collaborative constructivist) learning experience by developing three interdependent elements – social, cognitive, and teaching presence. The Community of Inquiry model also rests on Bandura and McClelland's (1977)Social Learning Theory, which states that learning occurs in a social context. Their social interaction increases self-esteem and motivation to learn and study, leading to increased university experience satisfaction (Hong & Gardner, 2019 cited in Mala, 2020). Figure 1 illustrates the interplay of the three elements of Educational experience

Figure1. Elements of Educational Experience. (Garrison, D.R, Anderson, T., &Archer, W.,2000)

Social Presence

Social presence is "the ability of participants in the Community of Inquiry to project their characteristics into the community, thereby presenting themselves to the other participants as 'real people'" (Garrison, Archer & Anderson, 2000. p 89). It is being socially available and connecting with peers in discussion forums and social media (Martin & Bolliger, 2018; O'Shea et al., 2015, Mala, 2020). This is also described as the learner-learner and learner to facilitator interaction facilitated through discussion forums within the LMS and social media (Hong & Gardner, 2019) and other digital platforms. Redmond et al. (2018) refer to the social investment a student makes in the learning experience by maintaining a social presence in academic and non-academic activities (Redmond et al., 2018). Social presence has three dimensions, namely: group cohesion, open communication, and emotional expression(Garrison, Anderson, & Archer,2000 cited on Feng, Xie and Liu, 2017).

Cognitive Presence

Cognitive presence is "the extent to which participants in any particular configuration of a community of inquiry can construct meaning through sustained communication" (Garrison, Archer & Anderson, 2000 p89). "The five phases of negotiation and knowledge co-construction were; sharing/comparing, dissonance, negation, co-construction, testing, and application" (Garrison, Archer &Anderson, 2000 p94). According to the authors, Cognitive presence is a vital element in critical

thinking. Blumenfeld and Paris (2004 cited on Redmond et al. 2018)) also claim that students engage in the learning process "to comprehend complex ideas and master difficult skills." Bowen (2005) also stated that "paying attention to the learning" and becoming "engaged learners," their motivation to learn, values and beliefs, metacognition and self-regulation, and strategy use and effort (Fredricks, Blumenfeld, & Paris, 2004; Greene, 2015, Redmond et al., 2018).

Rooted in Dewey's Practical Inquiry (PI), Garrison, Anderson & Archer (2001) introduced the four phases of cognitive presence as *triggering event, exploration, Integration, and Resolution*. These four stages of the PI model have been used widely as indicators to measure cognitive presence ever since.

Different cognition levels refer to deep and surface (Fredricks, Blumenfeld, & Paris, 2004; Henri, 1992 cited on Redmond et al., 2018). In the online space, surface cognitive engagement would be contributions that offer solutions without judgment or justification, repeating ideas without clarification or general Agreement with others without explanation or further contribution. Students who work at this level can easily be distracted, employ avoidance strategies, and focus on completing the task as a means to an end rather than learning from the task (Fredricks, Blumenfeld, & Paris, 2004, Redmond et al. 2018). Those students who display deep cognitive Engagement demonstrate more complex processes. Their online posts justify or compare ideas and solutions; they integrate ideas from multiple sources, provide new information, judgments, integrate data, and support their views (Henri, 1992, cited on Redmond et al., 2018). Learners working at deep cognitive levels have a psychological investment in learning, a preference towards the challenge, and a desire to go beyond base requirements. They sustain Engagement through persistence and can find relevance in new information by aligning it with previous knowledge. Instructors can impact the level of cognitive Engagement based on the requirements of activities and assessment tasks. Other terms which align with the element of cognitive Engagement are disciplinary Engagement (Hickey, Quick, & Shen, 2015, Redmond et al.,2018), intellectual Engagement (Pittaway & Moss, 2014, Redmond et al. 2018), academic challenge (Center for Postsecondary Research, Indiana University School of Education, 2016), and cognitive presence (Garrison, Anderson, & Archer, 2000, Redmond et al., 2018).

Teaching Presence

Teaching presence in the COI model is "the design, facilitation, and direction of [student] cognitive and social processes to realize personally meaningful and educationally worthwhile learning outcomes" (Anderson, Rourke, Garrison, & Archer, 2001). Garisson & Arbough(2007) claimed that Teaching presence is a significant determinant of student satisfaction, perceived learning, and sense of community. They identified three dimensions as *instructional management, building understanding, and direct instruction*. (Garrison& Arbaugh, 2007, Garrison et al., 2010) As an essential part of the Community of Inquiry, the Teacher is involved in instructional design and organization, the facilitation of interactions and discourse to build understanding, and direct instruction as a subject-matter expert in an online course (Anderson et al., 2001; Garrison et al., 2000). Shea, Hayes, and Vickers (2010) also concluded that teaching presence additionally comprises instructor communication and organization in all aspects of an online course.

Assigning a role to students, giving encouraging information, asking thought-provoking questions, keeping dialogs on track, deciding on the effective group size, and providing rubrics such as clear communication protocols and requirements for participation are examples of strategies that enhance teaching presence (Anderson, 2008; Branon & Essex, 2001; Dennis & Williams, 2005; Schellens, Van Keer & Valcke, 2005; Schindler & Burkholder, 2014; Wishart & Guy, 2009). Garrison et al. (2010) emphasized that the instructor should not only create a teaching presence and create a cognitive presence and mediate social presence to optimize the learning environment but to keep the interaction going in the Community of Inquiry.

Using the Community of Inquiry Model to enhance Students' Engagement in the online learning environment
"With its emphasis on social, collaborative learning, social constructivism, sound instructional design principles, critical thinking, and facilitative learning, the COI model and its three presences provide a structured set of guidelines for creating and sustaining an effective online community" Garrison et al. (2000, cited on Singleton, kk,2019)

To be able to answer the questions in my action research, I have identified strategies to address the issue presented in this study. Table 1 shows these strategies and actions.

Table 2. Intervention Activities

Target	Strategies/Action
Teaching Presence	
Design and Organization	Setting Clear expectations Create regular posts on the LMS Discussion and announcement boards and Kakaotalk Regularly posting messages of encouragement on Kakaotalk

Facilitation	Students post their Audio and video reflections on the Teachertools. Digital Discussion Groups using Kakaotalk and the LMS Follow up with students who miss online live sessions
Direct Instruction	Discussion and presentation of outputs during the online live sessions Discuss the framework of the course, Unit topics, and activities Via Zoom

Social Presence

Emotional Expression	Encourage students to cooperate and actively participate in group tasks or discussions Continually encouraging the students to participate in the online discussions Acclimatation
Open Communication	Coach and guide student to keep pace with the learning and think deeply about what they know and why they know it Regularly reviewing activity logs in the LMS, Kakaotalk group and give feedback during the online live sessions
Group Cohesion	Remind students of the value of teamwork and its Application in real-life situations Students do team presentations during the online live sessions Use of breakout rooms to provide group collaborations during the online live sessions Create Collaborative activities during the Online Live Classes.

Cognitive Presence

Triggering Event	Posting Thought-provoking Questions Group tasks are structured to inter-think and co-construct knowledge within the specific topics in Intercultural Communication 2
Exploration	Students will be discussing weekly topics posted on the LMS discussion board and Kakaotalk
Integration	Examine, challenge, and probe student responses, thereby encouraging analysis of ideas
Resolution	Use discussion summaries to focus on core concepts and learning outcomes. Audio and Video Recorded Reflection on the activities and topics discussed

Methodology

This research was approached using reflective educational action research as I am studying my own students and online learning setting, investigating the cognitive and social engagement practices that foster better Engagement in the online learning environment. Throughout this journey, I got to know my students both academically, and personally and I was able to establish better relationships and discover strategies to make their online learning more meaningful.

My research aim is to determine the effect of the Community of Inquiry (CoI) model on Korean University Students' online Engagement amidst the Covid 19 pandemic. The participants are university students who are enrolled in Intercultural Communication 2, First semester, AY 2021. The demographics are shown in the following table.

Table 3. Student Demographics

Class	1st Year	2nd Year	4th Year	Total
Intercultural Communications 2	5	4	7	16

Action Research Process

My Action research follows Kurt Lewin's research spiral (Janse, B & Van Vliet, V. 2021) due to the regular Cycle of research, action, and revision that allows opportunities for indefinite repetition. The purpose of the actions implemented in this research was to determine whether the Integration of the Community of Inquiry model in the curriculum enhances the students' Engagement in the online learning environment. This gave me the opportunity to refine the intervention activities until the research goal was met. As such, the following cycles of activities were conducted.

Cycle 1: The Discussion Forum, Online Live Sessions, Audio recorded reflections

During the first Cycle of my research, I created a discussion forum using the discussion board embedded in the University Learning Management System(LMS). I required my students to participate by responding to the questions I posted related to the unit topic of the course. They were allowed to comment, attach supporting materials, react, or negate the ideas posted by their classmates. My purpose for creating this forum was to prepare the students for the three-hour online live session. During the session, I discussed the main points of the unit topic then allowed the students to share their learning from the discussion forum and how it affected them to effectively participate in the online live session. After the class, I required them to do an audio recorded personal reflection using the audio recording component of Teachertools. Digital, which is a web-based platform. Discussion posts and Audio recorded reflections were transcribed and coded following the CoI Coding template and using a QDA miner. All data collected were analyzed and used as the basis for the next Cycle of action research.

Cycle 2: Kakaotalk, Youtube, Breakout rooms, and Audio Recorded personal reflection

During this Cycle, I added the use of Kakaotalk for out-of-class communication, group discussion, feedback, and announcements. Through this social media platform, students can interact with each other, clarify issues, raise questions related to the course, and share insights about the unit topics. To facilitate interactions, I posted questions related to the next unit topic to be discussed in the online live sessions and asked them to post their answers, comments, or feedback. During the live sessions, I used Youtube videos with Korean subtitles to introduce the points of discussion. I discussed the theories behind all the topics then send them to the breakout rooms for group discussion, where one student is assigned to record.

Cycle 3: Collaborative Activities (Team presentation), Group Discussions, Video Recorded personal reflections and the CoI Self-report survey

Learning from the Intervention I employed in cycle 2, I planned and implemented collaborative learning activities that will allow the students to do presentations about the topic being discussed. Students were grouped into teams of 3 and collaboratively presented their interpretation and Application of the theories discussed in the live sessions. After the Team presentations, they were sent to the breakout rooms for group discussion and reflection. After two online live team presentations, I required the students to do a video recorded personal reflection and answer the CoI self-report survey.

Data Collection
Observation

The observation took place in all the cycles of this action research. I observed the students' behavior during the weekly online live classes via zoom. To be able to clarify my observations, I recorded all my sessions. These observations were intended to determine students' cognitive and social presence in the synchronous online learning environment. The Community of Inquiry Coding template (Garrison, Anderson, & Archer, 2000, p. 4) was used as a guide during the observation.

Table 4. Community of Inquiry Coding Template(Garrison, Anderson, & Archer, 2000, p. 4)

Elements	Categories	Indicators (Examples)
Cognitive Presence	Triggering Event	Sense of puzzlement
	Exploration	Information exchange
	Integration	Connecting ideas
	Resolution	Apply new ideas
Social Presence	Emotional Expression	Emoticons
	Open Communication	Risk-free expression
	Group Cohesion	Encouraging collaboration

Teaching Presence	Instructional Management	Defining & initiating discussion topics
	Building Understanding	Sharing personal meaning
	Direct Instruction	Focusing discussion

Artifacts/Documents

Students' responses, student engagement hits were collected from the LMS discussion board. Audio and Video recorded personal reflections and recorded sessions were also collected through the Teachertools. Digital (an online digital tool), and zoom. All these documents were captured at a specific point in time. Discussion posts transcribed Audio and Video recorded reflections were coded and analyzed using the Coi Coding Template and QDA miner.

Survey Instrument

At the end of the third Cycle, the students were asked to answer the Community of Inquiry (CoI) Student Self-report survey through google forms. The CoI is a 34 item self-report instrument that measures the dimensions of social presence, cognitive presence, and teacher presence in online learning environments (Arbaugh et al., 2008). Responses were reported on a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). This instrument was used to determine the overall perception of the students in the implementation of the interventions. Although it uses the Likert scale, my purpose is simply to determine the percentage of the students' Agreement or disagreement in the use of the CoI to enhance their Engagement in the online learning environment.

Data Analysis

Data analysis took place in all stages of the research cycle. Students' posts, Audio, and Video, recorded personal reflections were transcribed and coded using QDA miner following the Community of Inquiry Coding Template. Data collected from the first Cycle was used to determine additional strategy and Intervention for cycle 2, and data collected from Cycle two was used to determine the action for the Third Cycle. All codes were quantified by how many times they occurred throughout the transcripts.

To analyze quantitative data, I created graphical displays, examined displayed data, then documented connections to my action research question. Online engagement reports and hits were gathered from our learning management system and presented in a graphical form.

Ethical Considerations

Prior to conducting this research, I asked permission from my department head since I studied my students in Intercultural communications 2. After getting approval, I presented the proposal to my students to get their consent to participate in my study. Out of the 18 students who are enrolled in the course, 16 of them agreed to participate. All university protocols were followed during the duration of the research.

Biases and Limitations

Action research lends itself to potential researcher bias as it often involves studying the effectiveness of a program or Intervention in which the researcher may have a direct personal interest. My bias can come from my experience in handling the course for five straight years, which might have influenced the students' response to items related to teacher presence in the online learning environment. A potential bias can also come from my avoidance of negative results or response from my students.

Limitations of this process also occurred, which may impact the generalization of findings but should not limit replication of the process. The limitation I encountered is the use of the Learning Management System. There was a time when I can not access the recorded reflections of the students from teachertools because of scheduled upgrades and maintenance. This took me a long time to transcribe and code the students' reflection for cycle 2.

Another consideration for bias can be the lack of an external coder. Due to time constraints, it was hard for me to look for an external coder who might have a different view of the transcripts and discussion posts of the students.

Cycle Reports

Cycle 1 Research Question: *If I create a discussion forum through the University LMS, what effect will it have on the students' cognitive and Social Engagement in the online live sessions?*

Data Observations:

Figures 2 and 3 present the students' Engagement in the LMS discussion forum. The graph indicates the number of times students engage in topics and posts of their classmates. The results obtained indicate that student one has the most number of hits(66) while Student 16 has the least number of hits(10) for topic 1(see figure 1).In figure 2, it can be observed that the post of student one got the most number of hits(43) while student 15 got the least number of hits(2). The higher number indicates more engagements from the other students, while a lower number indicates the least number of engagements.

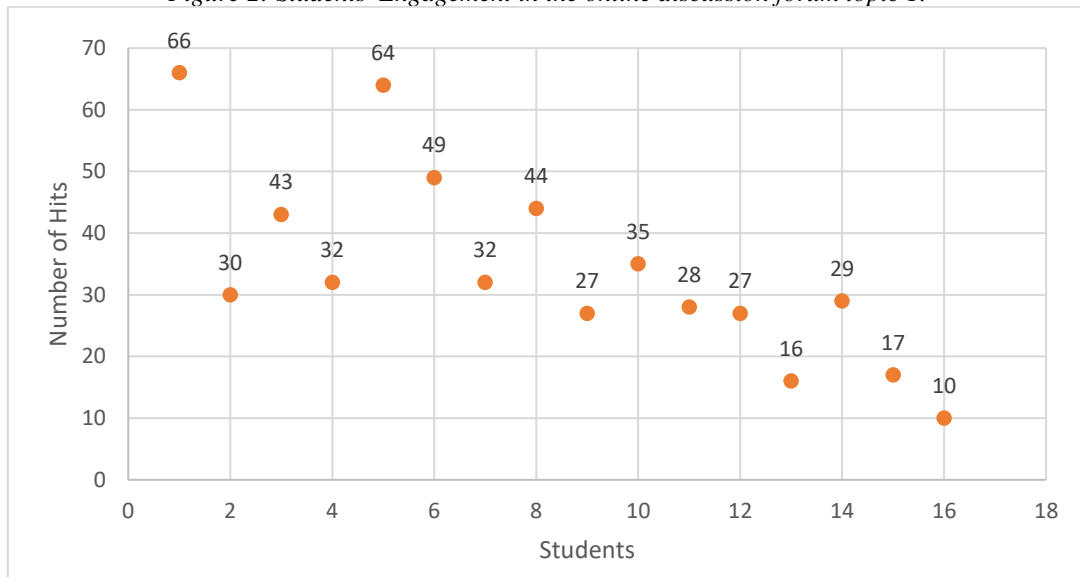*Figure 2: Students' Engagement in the online discussion forum topic 1.*

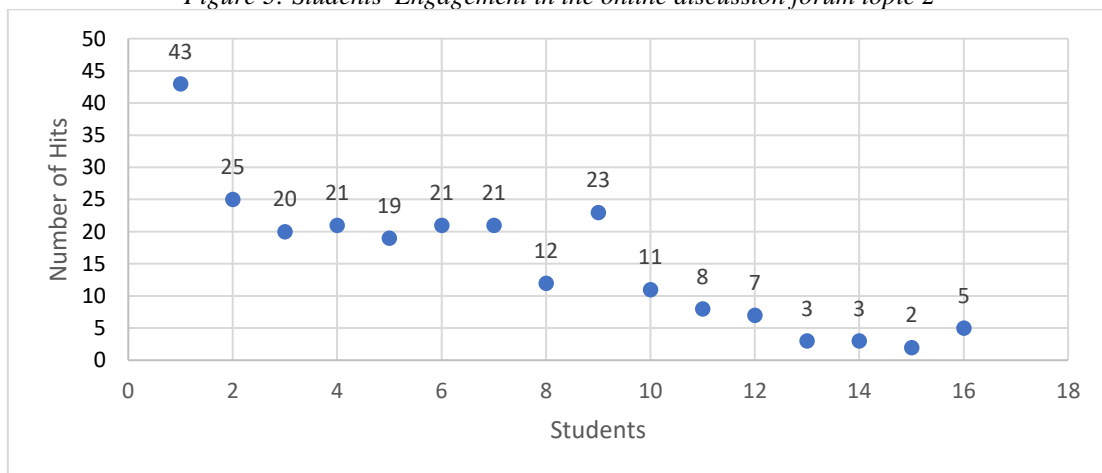*Figure 3: Students' Engagement in the online discussion forum topic 2*

Figure 4 presents the coded content of the students' discussion posts on the LMS discussion board for topic one. This visual representation shows the students Cognitive and Social Engagement in the online discussion forum. It can be observed from figure 3 that 94.10% of the participants were triggered by their curiosity or sense of puzzlement in the topic posted. However, only 29% referred to the Application of ideas.

Figure 4. Topic 1 Discussion Forum Cognitive and Social Engagement
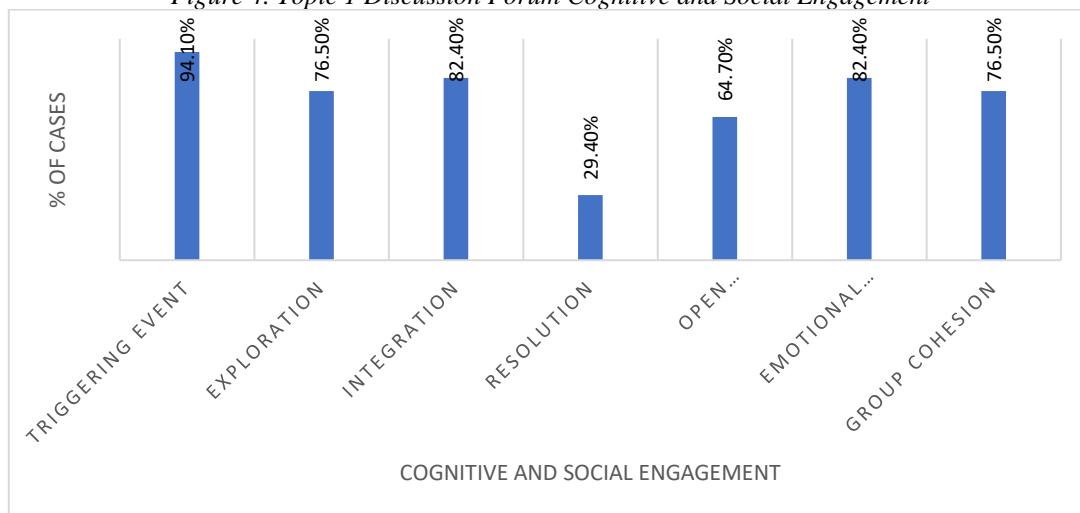
In the Social Engagement area, It could be observed that there is a high rate of reference to emotional expression(82.40%) and Group Cohesion(76.50%). Table 5 shows the sample statements of the participants in the discussion forum.
Table 5 Students Sample statements.

Category	Code	Description	Sample Statements
Cognitive Presence	Triggering Event	Sense of Puzzlement	culture affects our intercultural communication
Cognitive Presence	Exploration	Information Exchange	Turkish people greet our close friends with a kiss on the cheek (or more like touching cheeks), in Germany, we shake hands, and in Korea, we bow to each other
Cognitive Presence	Integration	Connecting Ideas	We should always be careful with saying something like "Korean is...", "American is…." That creates a stereotype of the culture of country, race, ethnicity, or religion.
Cognitive Presence	Resolution	Application of Ideas	Therefore it is hard to change and hard to communicate, but if people in different cultures share their experiences about culture, It will be much easier to communicate.
Social Presence	Open Communication	Risk-free Expression	When I was in Uzbekistan, I went to a local elementary school.
Social Presence	Emotional Expression	Emoticons	We have to be aware that there always exist differences between individuals.
Social Presence	Group Cohesion	Encouraging Collaboration	Thanks to globalization, most people in different cultures understand and respect each other's culture.

Figure 5. Topic 2 Discussion Forum. Cognitive and Social Engagement

Figure 5 presents the students' Cognitive and Social Engagement in the second round of the online discussion forum. This visual representation shows that there was a great improvement in the students' reference to the Resolution (68.8%), which involves the Application of ideas. When compared to the first round of discussion forums, only 29% of the students referred to the Resolution. The data also shows that although there is a drop in reference to open communication (82.4%-62.50%) and Group cohesion (76.50%-56.30%), There is an increase in reference to Emotional expression (64.7%- 87.5%). Table 6 shows the sample statements of students in the discussion forum.
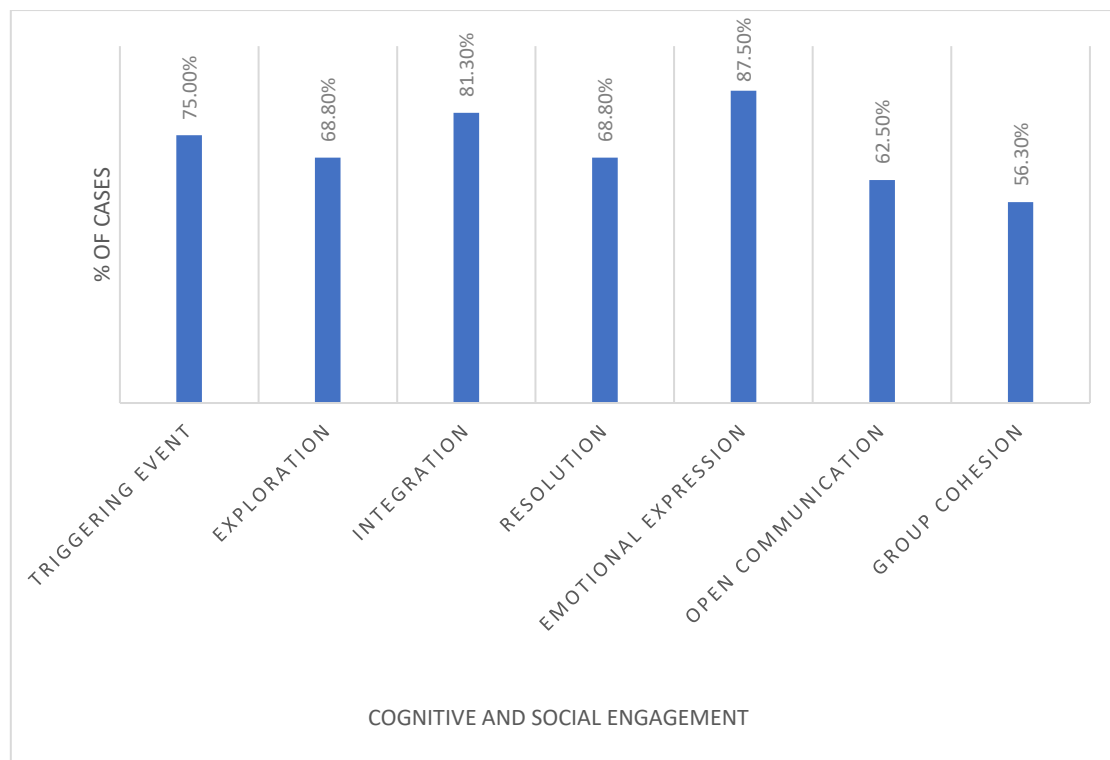
Table 6: Sample Students' Statements.

Category	Code	Description	Sample Statements
Cognitive Presence	Triggering Event	Sense Puzzlement	It gives me a different perspective to see the world. It could be a tiny or a huge thing.
Cognitive Presence	Exploration	Information Exchange	just talking about culture is not the same as understanding culture
Cognitive Presence	Integration	Connecting Ideas	relation of power affects a lot for intercultural communication. So discrimination occurs for a particular race, country, or ethnicities
Cognitive Presence	Resolution	Application of Ideas	Change the way you see others Our country is still not friendly, but I don't think I should criticize the entire Japanese culture. I felt foolish when I saw this hasty judgment. This experience has changed me, trying to understand, not just generalize because of my experiences.
Social Presence	Emotional Expression	Emoticon	Sometimes, I'm amazed, shocked, feeling uncomfortable.
Social Presence	Open Communication	Risk-free expression	We need to communicate with others
Social Presence	Group Cohesion	Encouraging collaboration	I think the biggest problem is the problem that comes from ignorance. There is no right or wrong in culture, so it can be understood even if the cultures of each other are different.

Figure 6: Audio Recorded Student Reflection Cycle 1

Figure 6 is a visual representation of the transcribed, and coded Audio recorded reflections of the students. This recorded reflection was used to evaluate the effect of the online discussion forum on the students' Engagement in the online live sessions. Data gathered from the first Audio recorded student reflection shows the change in the students' Engagement in the online live sessions. It's worth noting that 94.10% referenced the Application of new ideas (Resolution) in their day-to-day life. For instance, one freshman student says, "My view of culture and the world had changed when I discussed with my classmates. We have to embrace other cultures and lead them to successful intercultural communications." This piece of evidence also shows that the students are socially engaged, as shown by the high rate of reference to Emotional Expression(88.20%), Open communication (76.5%), and Group Cohesion (88.20%).
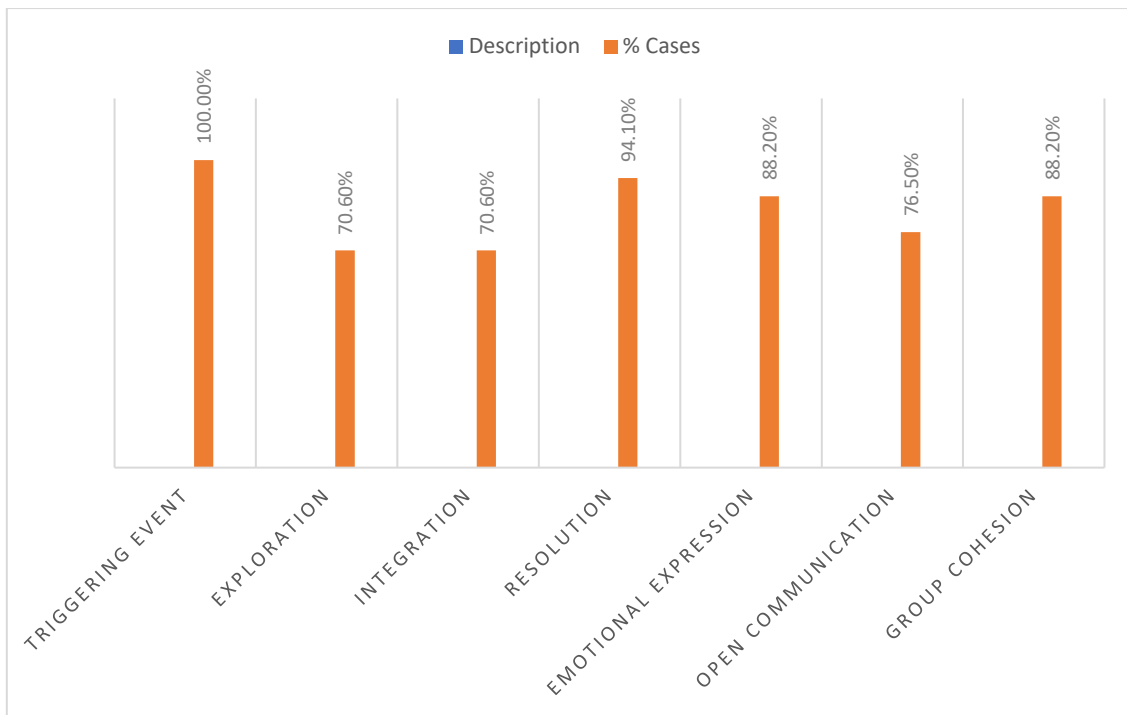
Figure 7: Cognitive and Social Engagement through Social Media(Kakaotalk)

Reflection on Teaching and Learning

The data I collected and observed from this first Cycle of my research affirms that the creation of a discussion forum using the LMS discussion board prepares and motivates my students to be cognitively and socially engaged in the online live sessions. This gave me a clearer perspective on how to redirect my pedagogical approach in delivering content and establishing better social interactions, inter-thinking, and co-construction of knowledge. I realized that taking advantage of the flexibility of the Learning Management system bridges the gap brought about by the covid 19 Pandemic. These results align with the thought that "Online discussions can give you feedback prior to or after a class; this feedback may indicate what content students understand and what requires further clarification" (Biriyai, A.H., & Thomas, E.V. 2014). Data shows that Students' participation in the Community of Inquiry prepares them for synchronous cognitive and social Engagement.

I also realized that Students' Audio recorded reflections of their learning give me a deeper understanding of who my students are and how they identify themselves in the online learning environment. It provided me robust information that helped me redesign not only the course framework but my pedagogical strategies. This prompted me to plan and refine my interventions which are presented in the next Cycle.

Cycle Report 2
Cycle Research Question: *If I use kakaotalk and youtube videos with Korean subtitles, What effect will it have on their cognitive and Social Engagement in the online learning environment?*

Data Observations

Figure 7 is a visual representation of the students' Cognitive and Social Engagement in social media (Kakaotalk). This figure reveals that the participants are cognitively engaged in the discussion group created in kakaotalk. When observing the data, it can be noted that although the students are cognitively engaged, there are still inhibitions in sharing their personal information and emotional expression. For instance, some of them are still hesitant to disagree with the other participants even if they disagree with the statement. Some of them are also conscious about how they frame their statements, even to the point of "unsending" the message. When I asked why they unsent their messages, one student says "I think I need to organize my Ideas before posting."
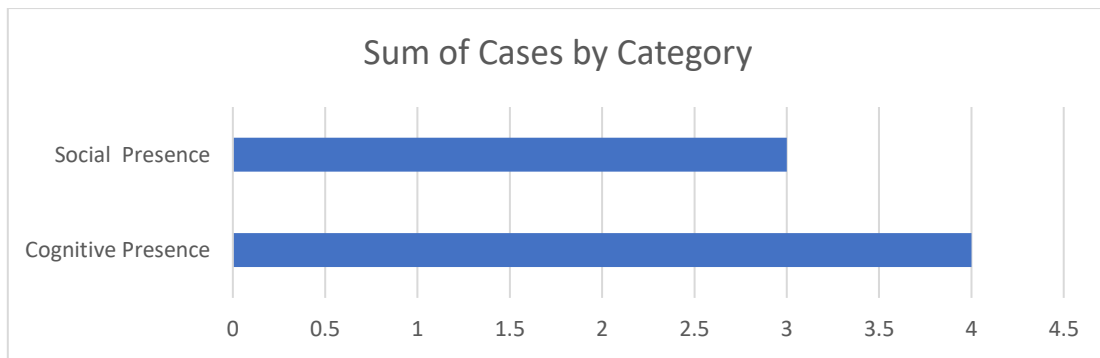
Sum of Cases by Category

Figure 8 presents a visual representation of the transcribed and coded Student's Audio recorded reflection for cycle 2. It can be observed from the graph the greater distribution of reference to the different categories. The figure also presents that greater percentage of students referenced to the Integration (85.70%), which deals with the connecting ideas, Resolution (92.90), which deals with Application of new ideas, Open communication(85.70%), which deals with risk-free expression, and Group cohesion(85.70%) wich deals with encouraging collaboration. Table 7 shows the students' sample statements.

Figure 8. Student Audio Recorded Reflection Cycle 2
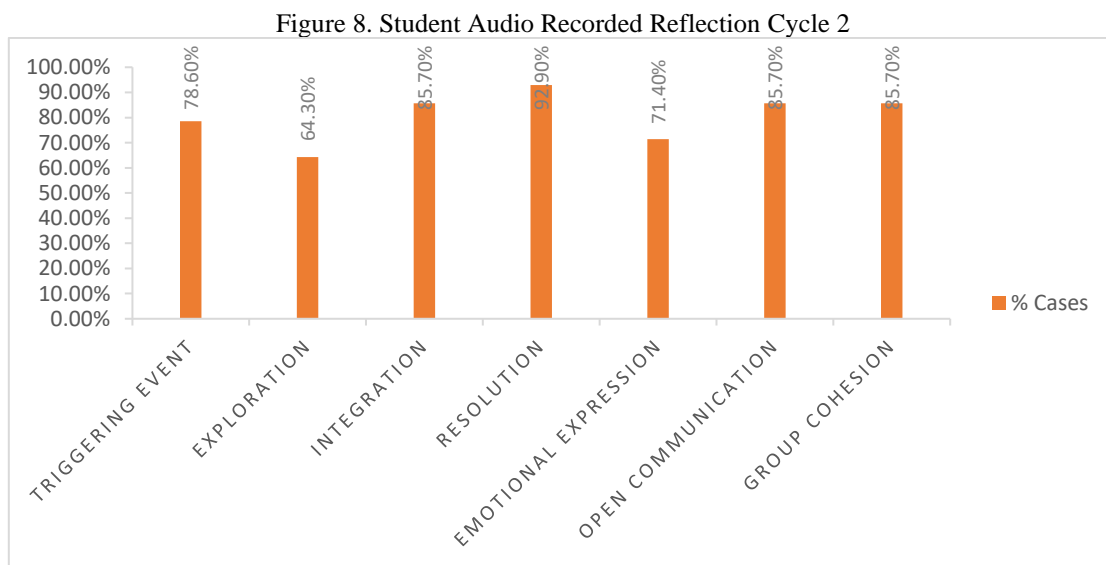
Table 7: Students' Sample statements

Category	Code	Description	Sample Statement
Cognitive Presence	Triggering Event	Sense of Puzzlement/Curiosity	This week the main topic was identity, and I was interested in this topic because I'm into intersectionality feminism.
Cognitive Presence	Exploration	Information Exchange	seniority is an essential part of communication here in Korea
Cognitive Presence	Integration	Connecting Ideas	I was able to practice effective intercultural communication while doing the team test in class.
Cognitive Presence	Resolution	Application of Ideas	we should keep in mind our conversation can affect others and ourselves
Social Presence	Emotional Expression	Expression of Feelings	my experience was different, and this intersectionality explains my feelings.

Social Presence	Open Communication	Risk-Free expression	After we finished our task, we asked each other questions as they asked me where I am from, exactly which City of Germany I am from.
Social Presence	Group Cohesion	Encouraging Collaboration	In our team, a student had worked in Japan, a student who studied in the Philippines while I went abroad for tourism only.

Reflection on Teaching and Learning

Before implementing the Intervention for cycle 2, my goal was to increase the level by which students apply the ideas they learn in their day-to-day life and to encourage more collaboration. Data collected revealed that the Intervention was effective in attaining this goal as 92% of them referred to Resolution, and 85.70% made reference to Open communication and Group Cohesion.

The data gathered from this Cycle helped me understand that this generation of learners values effective communication through social network services like kakaotalk, considering its real-time component—my real-time connection with them through this application foster faster information exchange, collaboration, and feedback. "SNS is the place where they established sense of belonging to the learning community with a close and friendly relationship with the instructor and peers" (Mohsen Saadatmand et al., 2017)

As a strategy, however, I realized that I have to maintain a media presence as they are using different applications in their discussions. When using this strategy, it is important that I am actively involved in their discussion.

Cycle Report 3

Cycle research question: *If I add collaborative activities during the online live sessions and Video recorded reflections, What effect will it have on their Cognitive and Social Engagement?*

Data Observations:

Cycle 3 presents a refinement of the strategies I used in cycle 2. Here, I created collaborative activities like team presentations and group case analyses during the online live sessions. I have observed that during the team presentation, students were engaged in the topic being presented by their classmates. Some of them also requested that they be allowed to record the session as the topic being presented is new to them, and they wanted to review it for their individual reflections. During the breakout sessions, where they were asked to analyze a case related to the presentation, I observed that the team facilitators encouraged the other students to share their opinion by translating the content of the case into Korean. This fostered better interaction and collaboration in the group.

Figure 9 is a visual representation of their Video recorded reflection. The shift from Audio to video recording is a result of the observations I gathered from cycles 1 and 2. Since I observed that the students are more comfortable and more confident to face the camera, I introduced the use of the Video recording component of Teachertools.

When observing this piece of evidence, it could be gleaned that there is a relatively balanced distribution of reference to the different categories. The data shows that the students are more engaged in sharing information(Exploration: 100%) while doing the collaborative activities. It can also be observed that there is an even reference to the three sub-categories of Social Engagement. (90%)

Figure 9: Video Recorded Reflection (Cycle 3)
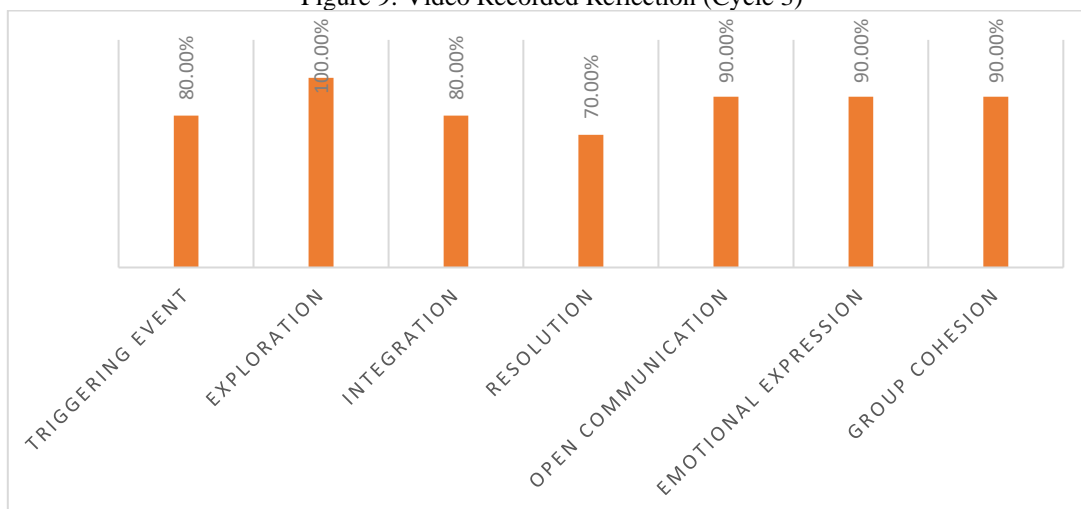
Reflection on Teaching and Learning

Data gathered in this Cycle of action research taught me that my students are more Cognitively and socially engaged if provided with collaborative activities. Figure 9 tells me that sharing of information (Exploration), Connecting Ideas (Integration), and Applying ideas (Resolution) can be triggered by creating activities where they can freely inter-think and co-construct knowledge. Also, this data tells me that they become more expressive(Emotional Expression) in sharing what they feel about an event and freely communicate with each other without fear of being judged or rejected. Lastly, this data proves that I was wrong in my assumption that Korean University Students hate working with each other when accomplishing a task. I realized that with proper facilitation, they learn to blend with each other and accept differences.

General Research Question: *What effect can the Community of Inquiry Model have on the Korean University Students' Engagement in the Online Learning Environment Amidst Covid 19 Pandemic?*

In answering the general research question, I used the Community of Inquiry Student Self-Report Survey. The following Figures show the students' self-report.

Teacher Presence

Figure 10: Design and Organization

Note: Students are mainly in Strong Agreement that Important course topics, course goals, instructions on how to participate, and due dates are clearly communicated.
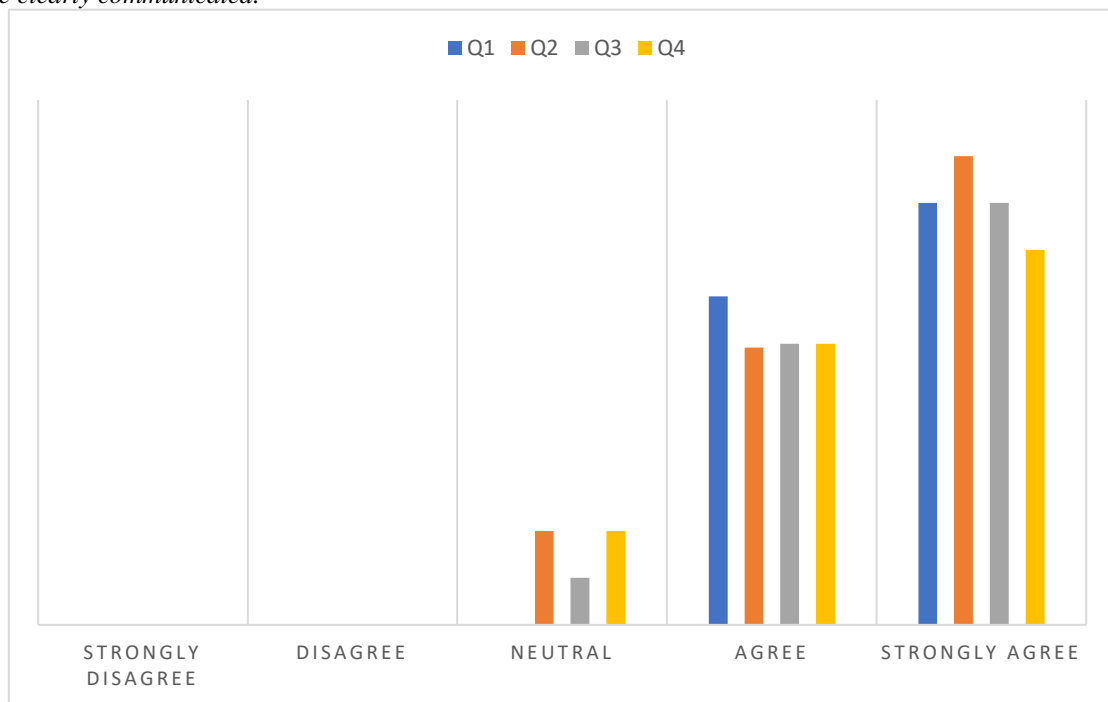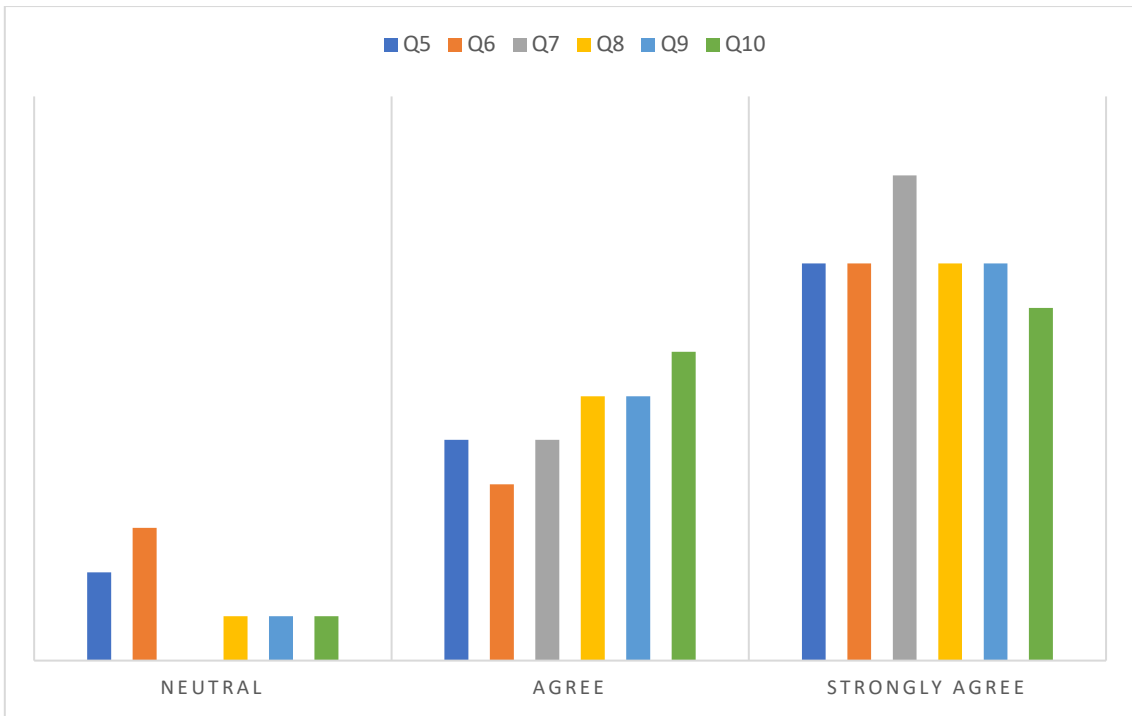

Figure 11 Facilitation

Note: Bulk of students either Agree or Strongly Agree that the Teacher was helpful in identifying areas of Agreement and disagreement, guiding the class towards understanding, keep the participants engaged in productive dialogue, keep the participants on task, encourage exploration of new concepts and development of a sense of community.

Figure 12 Direct Instruction
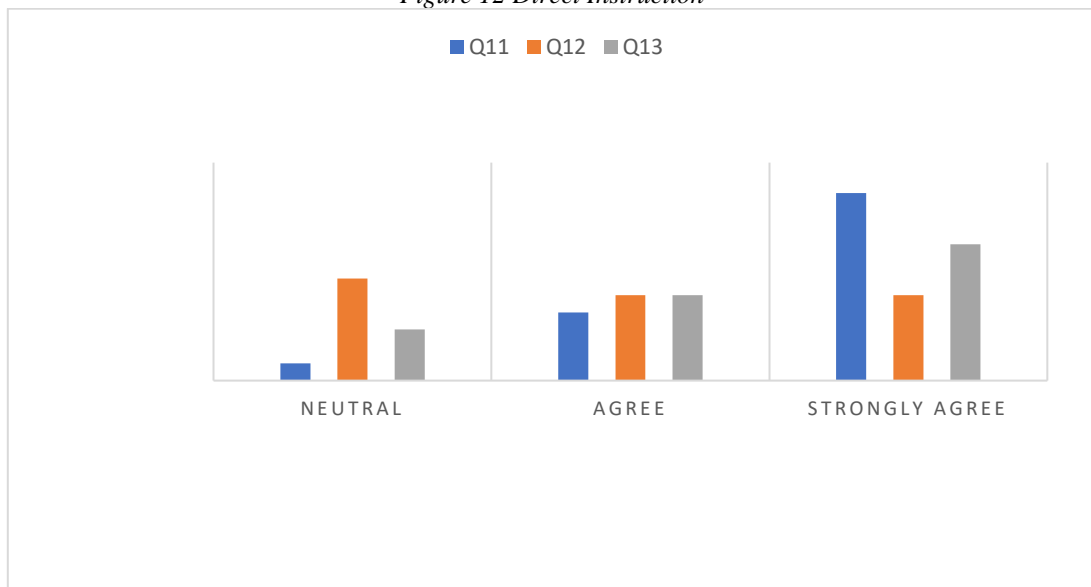
Note: Students are divided between Neutral, Agree, and Strongly agree that the Teacher helped them focus on discussion on relevant issues that helped them learn, that the Teacher provided feedback that helped them understand their strengths and weaknesses relative to the course goals and objectives, and provided feedback in a timely manner.

Social Presence

Figure 13 Emotional Expression
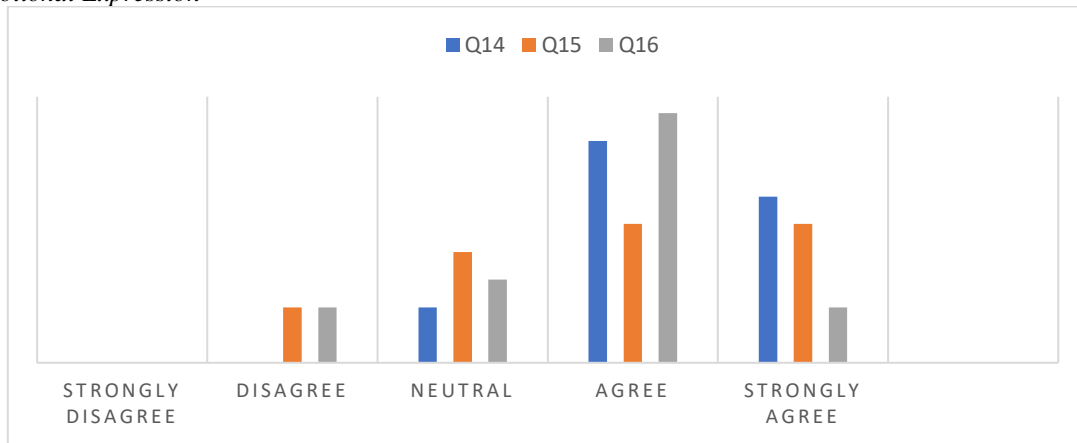
Note: Students are either neutral, Agree, or Strongly agree that getting to know the other participants gave them a sense of belonging in the course. They are also divided between Disagree, neutral, Agree, and Strongly agree as to whether they formed distinct impressions of some course participants and that online or web-based communication is an excellent medium for social interaction.

Figure 14 Open Communication
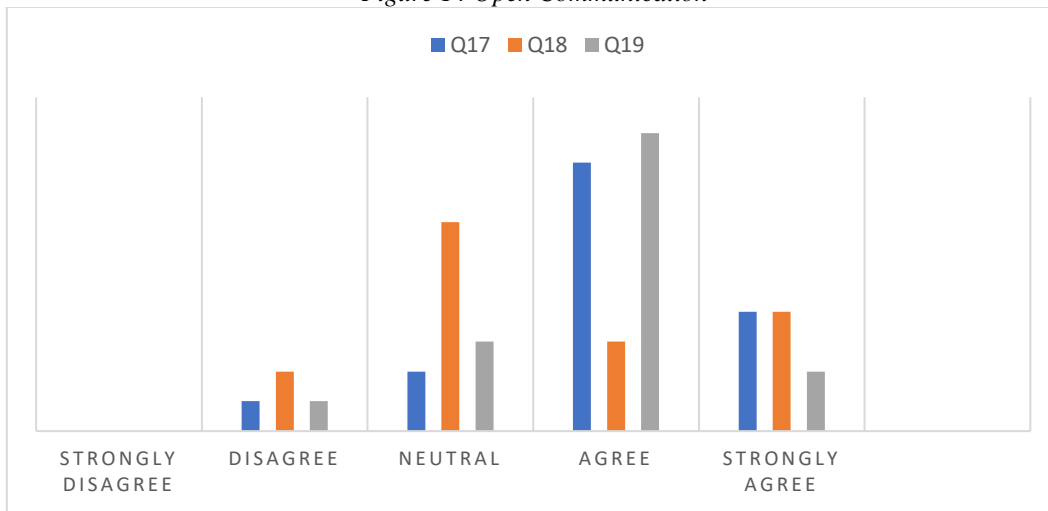
Note: Bulk of students either neutral, Agree, Strongly agree that they felt comfortable conversing through the online medium, participate in the course discussions, and interacting with other course participants.
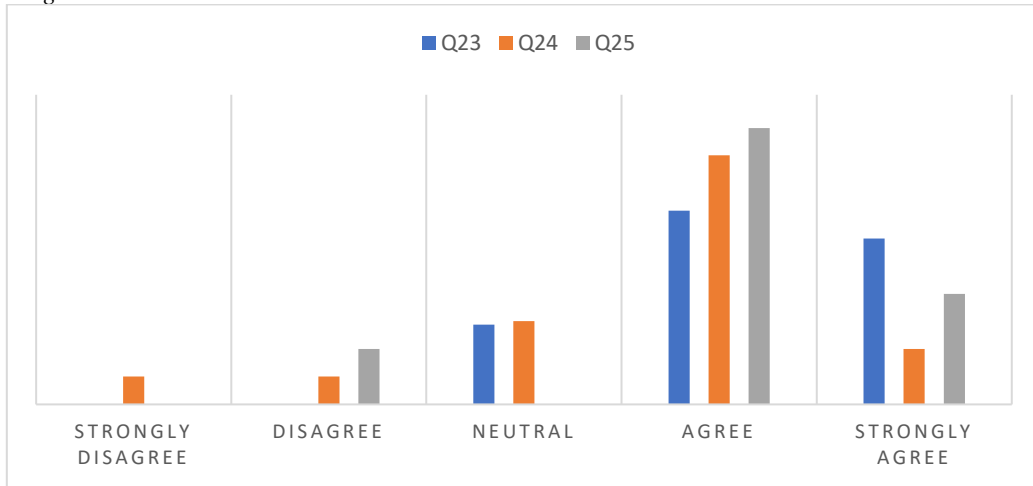
Figure 15 Group Cohesion
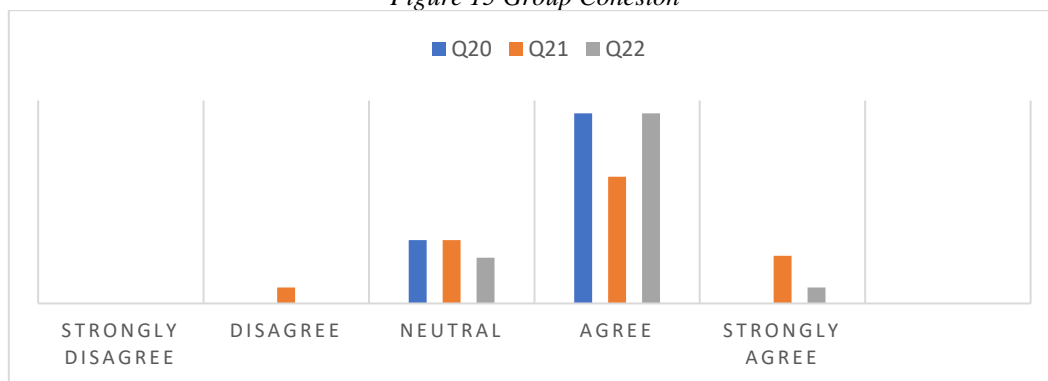
Note: Greater number of students agree that they felt comfortable disagreeing with other course participants while maintaining a sense of trust, that their point of view was acknowledged by the other participants, and online discussions help them develop a sense of collaboration
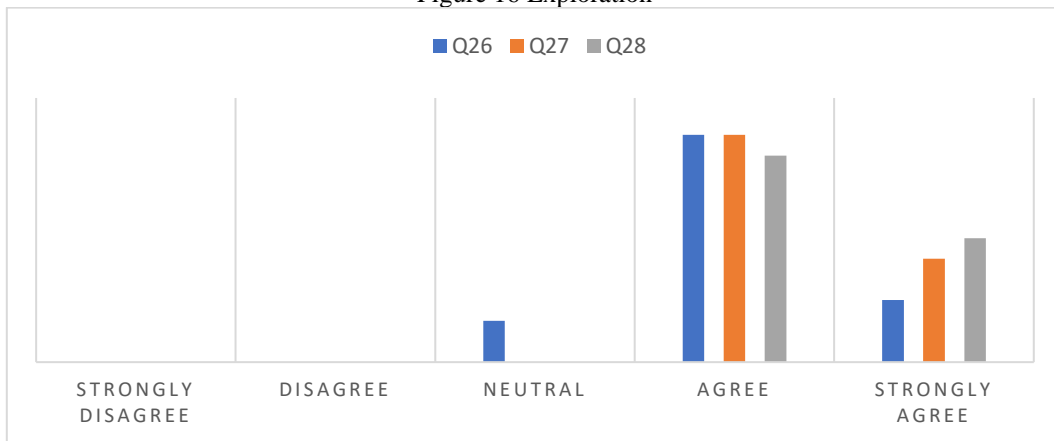
Cognitive Presence

Figure 16 Triggering Event

Note: Students generally agree that problems posed increased their interests in course issues, activities piqued their curiosity, and motivated them to explore content-related questions.

Figure 16 Exploration

Note: Students mainly Agree that they utilized a variety of information sources to explore problems posed in the course, that brainstorming and finding relevant information helped them resolve content-related questions, and online discussions were valuable in helping them appreciate different perspectives.

Figure 17 Integration
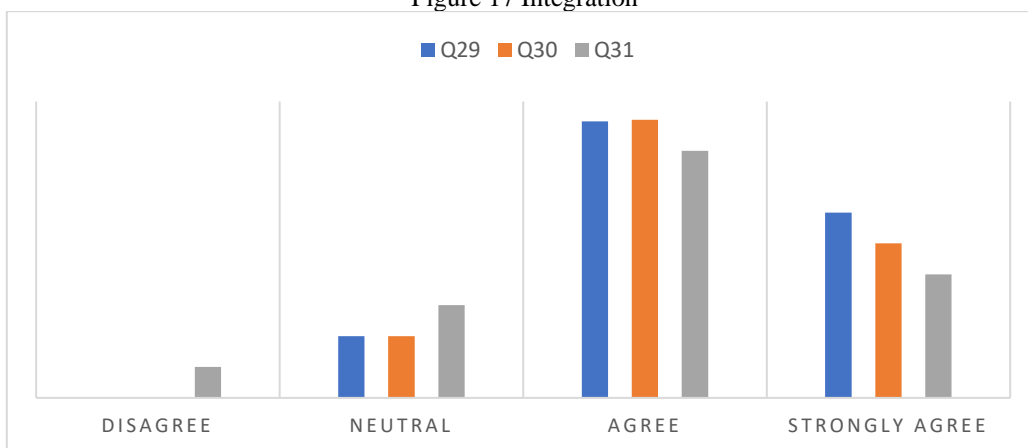
Note: Students are neutral, agree, or strongly agree that combining new information helped them answer questions raised in course activities, learning activities help them construct explanations or solutions, and reflection on course content and discussions helped them understand fundamental concepts in the class.

Figure 18 Resolution
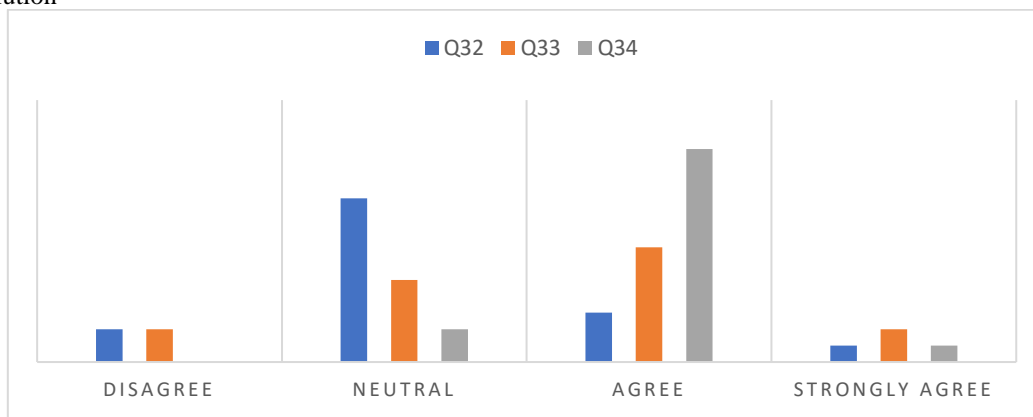
Note: Some students disagree that they can describe ways to test and apply the knowledge created in the course, developed solutions to course problems that can be applied in practice, and apply knowledge created in the course to their work or other non-class related activities. However, greater numbers are spread over neutral, agree, and Strongly Agree.

Reflection on the Data

This data tells me that the use of the Community of Inquiry Model helps enhance the Korean University Students' Engagement in the online learning environment. It reaffirms that Teacher Presence(See Figure 10,11 and 12) play a very important role in the students' Cognitive and Social Engagement in the online learning environment. It also revealed to me that students' motivation to participate in the activities provided in the synchronous depend on design and organization and clear communication of objectives. In a world (Al-dheleai, Y., 2020) increasingly focused on internet interaction, social presence theory speaks to the expectations students have for higher education. Ultimately, like Garrison (2021) states, Cognitive presence goes to the heart of the community of inquiry. It is defined by the inquiry process where learners are tasked with a problem or issue and, through iteration between discourse and reflection (public and private worlds), construct meaning and confirm understanding.

This Self-report survey also affirms that the Interventions I implemented and strategies used in each of the cycles had a great impact on their Cognitive and Social Engagements in the online learning educational experience. Integrating appropriate technology and pedagogy in designing an online learning environment and instructors' instantaneous presence and facilitation throughout the course can foster interaction with other learners and content (Zhang, R, 2020).

Conclusion

The main purpose of this action research was to explore the use of the Community of Inquiry Model in enhancing the students' online Engagement. The research addressed the question: What effect can the Community of Inquiry Model have on Korean University Students' Engagement in the online learning environment amidst the Covid 19 pandemic?

After analyzing and reflecting on the data produced, I conclude that the community of Inquiry Model embedded in the course activities enhanced the Korean University Students' Engagement in the online learning environment. Positive outcomes were revealed in the data findings in cycles 1, 2,3.

The data findings show that the creation of a discussion forum through the LMS discussion board, the use of social media(kakaotalk), the use of collaborative activities had a great impact on the students' cognitive and Social Engagement.

Action Potential

After Analysing and reflecting on the data collected in Cycle 1,2 and 3, and the student Self-Report survey, I saw the robust potential of implementing the following actions in the next Cycle
1.   The use of a buddy system to promote better social interaction and support
2.   The Integration of online content creation
3.   The use of flipgrid for out-of-class activities.

REFERENCES:
1. Abas, Zoraini Wati. (2009). Towards a More Effective Engagement of Learners and Tutors in Online Discussion Forums. Asian Association of Open Universities Journal. 4. 10.1108/AAOUJ-04-01-2009-B005.
2. Al-dheleai, Yahya & Tasir, Zaidatun & Al-Rahmi, Waleed & Al-Sharafi, Mohammed A. & Mydin, Alamin. (2020). Modeling of Students' Online Social Presence on Social Networking Sites and Academic Performance. International Journal of Emerging Technologies in Learning (iJET). 15. 56-71. 10.3991/ijet.v15i12.12599.
3. Biryai, A.H., & Thomas, E.V. (2014)Online Discussion Forum: A Tool for Effective StudentTeacher Interaction. International Journal of Applied Science-Research and Review www.ijas.org.uk
4. Creswell, J.W. (2013). *Qualitative inquiry & research design: choosing among the five approaches*. Thousand Oaks, CA: Sage Publications, Inc.
5. Garrison, D. R. (2017). E-Learning in the 21st Century: A Community of Inquiry Framework for Research and Practice (3rd Edition). London: Routledge/Taylor and Francis
6. Garrison, D. & Anderson, Terry & Archer, Walter. (1999). Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education. The Internet and Higher Education. 2. 87-105. 10.1016/S1096-7516(00)00016-6.

7. Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical Thinking, Cognitive Presence, and Computer Conferencing in Distance Education. American Journal of Distance Education
8. Garrison, D. R., Anderson, T., & Archer, W. (2010). The first decade of the community of inquiry framework: A retrospective. The Internet and Higher Education, 13(1–2), 5–9. https://doi.org/10.1016/j. iheduc.2009.10.003
9. Garrison, D. R., Cleveland-Innes, M., & Fung, T. S. (2010). Exploring causal relationships among teaching, cognitive and social presence: Student perceptions of the community of inquiry framework. The Internet and Higher Education, 13(1–2), 31–36. https://doi.org/10.1016/j.iheduc.2009.10.002
10. Ghorbanpour, Amir. (2013). The effect of online forum participation on the EFL learners' writing performance and their attitudes towards learning English. Barnolipi. 2. 207-237.
11. Janse, B & Van Vliet, V. (2021). *Action Research*. Retrieved [March,2021] from toolshero: https://www.toolshero.com/change-management/action-research/
12. Kumar, S, & Ritzhaupt, A (2014) Adapting the Community of Inquiry Survey for an Online Graduate Program: implications for online programs https://journals.sagepub.com/doi/pdf/10.2304/elea.2014.11.1.59
13. Learning in Communities of Inquiry: A Review of the Literature. https://files.eric.ed.gov/fulltext/EJ836030.pdf
14. Mo, Su Kyoung & Lee, Sangmin. (2017). The relationships among the presences of Community of Inquiry and the perceptions of EFL college students in online learning. Multimedia-Assisted Language Learning, 20(2), 11-35.
15. Mohsen Saadatmand et al. (2017).Examining Learners' Interaction in an Open Online Course through the Community of Inquiry Framework European Journal of Open, Distance and e-Learning – Vol. 20 / No. 1 61 ISSN 1027-5207 © EDEN
16. Nasir,M , Khalid,M & Quick, D. (2016). Teaching Presence Influencing Online Students' Course Satisfaction at an Institution of Higher Education. International Education Studies. 9. 62. 10.5539/ies.v9n3p62.
17. Redmond, Petrea & Abawi, Lindy-Anne & Brown, Alice & Henderson, Robyn & Heffernan, Amanda. (2018). An Online Engagement Framework for Higher Education. Online Learning Journal. 22. 10.24059/olj.v22i1.1175.
18. Singleton, K K, (2019) "Reimagining the Community of Inquiry Model for a Workplace Learning Setting: A Program Evaluation". https://scholarcommons.usf.edu/etd/7944
19. Zhang, R. (2020). Exploring blended learning experiences through the community of inquiry framework. Language Learning & Technology, 24(1), 38–53. https://doi.org/10125/44707