





# Community of inquiry Framework Combined With Podcast Media in Nursing Education innovation During Covid-19 Pandemic: An Evaluative Study

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**Background:** The COVID-19 pandemic has not researched inquiry methods much, other than that it has never been combined with podcast media to better refine students' abilities. The purpose of this study was to determine student satisfaction with basic nursing theory and practice courses taught using the Community of Inquiry framework using podcast media.

**Methods:** This evaluation was done at a university using a validated Community of Inquiry survey (n = 54) and interviews (n = 20). A convenience sample of 54 graduate students enrolled in a core research field comprised the study participants. The quantitative data were analyzed descriptively and the qualitative data were thematically coded.

**Results:** Five major themes emerged: It was a new experience, and fun to learn; it is challenging to learn; it is an ongoing enthusiasm; it is well known, and useful to others. Overall, student satisfaction was high, especially in the cognitive presence (critical thinking) and instructor presence (mostly related to pedagogy) categories. Student perspectives on developing "social presence" vary, but the framework is generally effective for stimulating inquiry and fostering a sense of community. Students can gain thorough knowledge of the learning goals they wish to pursue.

**Conclusion:** Formation of an "investigation community" through the use of the media of podcasts. This framework has significant potential for use in the teaching of nursing research subjects; satisfaction is high when students report learning not only theory and practice, but also how to "make" character changes through the formation of professional and intellectual communities.

**Keywords:** COVID-19, nursing education research, podcast, inquiry

## Introduction

A global pandemic represents a previously inconceivable threat to the globe. The 2019 Corona virus illness (COVID-19) has already claimed thousands of lives worldwide.<sup>1</sup> In the healthcare industry, nursing institutions are prepared for the unique challenges of educating the next generation of caregivers.<sup>2</sup> This article explains how to use inquiry-based learning to study innovation through podcasts. As we confront this health issue, we recall earlier teachings. We address concerns raised by students. We are concerned about continuing to educate nurses in a society characterized by social alienation, isolation, and quarantine, while there is an ongoing need for frontline nurses.<sup>3</sup> In higher education, communities of inquiry-based learning have long been seen as ideal, but until recently, little was understood about the characteristics of an online learning environment or how such communities may be formed. How to build and maintain an online learning community was an area of special focus and difficulty.<sup>4</sup>

As a result of the inefficiency of online meetings, conference calls, and urgent emails, many issues and challenges are handled today.<sup>5</sup> Even though the majority of the coursework is completed online, students in this program must show that they have a firm grasp of the material in order to fulfill the criteria for a Bachelor of Nursing degree.<sup>6</sup> Nursing colleges

are less likely than other academic institutions to experience problems adjusting to distance learning in the digital era. However, we, like other Indonesian nursing schools, must make difficult decisions in order to implement effective online learning innovations.<sup>7,8</sup> The importance of raising educational standards is also emphasized.<sup>9,10</sup>

The developmental issues associated with the Community of Inquiry framework have enormous theoretical and practical implications. The Community of Inquiry (CoI) framework is formed by the intersection of three main elements social presence, cognitive presence and teaching presence.<sup>4</sup> Rapid technological advancements have extended the scope and delivery of innovative education. eLearning is one alternative. It is described as “electronically mediated learning in a digital format (through podcasts) to supplement or support teaching and learning”.<sup>11</sup> A theoretical framework may be used to use podcasts in conjunction with an inquiry-based approach to provide the groundwork for producing meaningful learning experiences in the classroom. This includes the framework for the Community of Inquiry (CoI),<sup>12</sup> Other related documents. Creating an environment for inquiry and deep learning through well-targeted and organized education, supervised student discussion and analysis, and reflection within a linked and collaborative online community is the fundamental premise of the Center for Inquiry.<sup>13,14</sup>

CoI is a framework for creating this teaching and learning experience via integrating three online identities social, cognitive, and instructional. A feeling of connectedness is linked with social presence.<sup>15</sup> Cognitive presence is defined as the process of building and applying knowledge, meaning, and curiosity in one’s life or one’s work. A lecturer’s attendance at teaching comprises participation in all aspects of the lecturer’s employment, ranging from course design and organization through facilitation, discussion facilitation, and instruction.

Podcasts are digital audio files that frequently take the shape of a story or a conversation. The concept of audio files in education is not original, but podcasts offer a fascinating platform for evaluation due to their timely and realistic nature. However, despite the ubiquitous use of computers and the internet in higher education, there has been little research into the application of the CoI architecture in nursing schools. And there is no indication that it is being utilized to deliver online nursing research teaching via podcasts.

## Aim

This research aimed to determine student satisfaction with a form of instruction using podcasts provided via a Community of Inquiry (CoI) framework.

## Method

### Design

This evaluation-based study examined student satisfaction with the redesigned subject. Using a validated Communities of Inquiry Instrument, both qualitative and quantitative data were gathered and analyzed to assess student satisfaction. Permission-based follow-up interviews were used to investigate these findings in greater depth.

The selection of podcast media because this media is a trend among students, thus fostering interest in learning. In the second stage, the students presented the problem formulation and findings, they were given case studies and summaries. In this implementation, they use podcast media to report and share information on podcast media. Interview data was collected to ascertain students’ perceptions of the class. Students attend two sessions each week for seven weeks for a total of 14 sessions, each lesson lasting 45 minutes. Students at are presented with reverse courses and online learning resources, with new topics, has been described as shown in Figure 1. We collect and evaluate qualitative and quantitative



**Figure 1** Steps to Implement Inquiry Learning using podcast media.

data to determine student satisfaction using a validated Community Inquiry Instrument<sup>3</sup> and using the COREQ method for satisfaction interview. Follow-up interviews were conducted to further investigate these results.

## Sampling and Participants

Fifty-four undergraduate nursing students were selected at random from a convenience sample for this study. They were enrolled in a core research topic in either Semester 1 and Semester 2. After receiving briefings regarding Steps to Implement Inquiry Learning using podcast media, students were contacted by email and asked to engage in a study survey and a personal telephone interview with the research team. The email invitation includes a link to the online version of the CoI Survey, which may be completed at your convenience. Completing the poll constitutes consent in this case. We received responses to a total of 54 questionnaires, resulting in a response rate of 100% (n = 54). Participants in the poll did not provide any demographic information. Respondents are invited to engage in a telephone interview as part of the last survey question. It is necessary for students who want to participate in the interview to contact the topic coordinator in advance. Participants who express an interest in participating will get information sheets and permission forms. Before conducting a telephone interview, you must get written permission from the person you are interviewing. Twenty students took part in a semi-structured individual telephone interview that was conducted over the phone. All interviews were done by a single researcher who was not associated with any of the professors in order to guarantee uniformity in data collection and to minimize the possibility of coercion. The interviewees conducted the interviews: fifteen women and five men. Interview duration ranged between 11 and 46 minutes. Participants were interviewed about their common topic experience, peer-to-peer contact, and student-to-facilitator engagement, all questions related to satisfaction not present in the CoI Survey.

Learning Each aspect of the framework was included into the design of the learning activities, tactics, and evaluation methods used. Article critiques and peer reviews, weekly online conversations, and course redesign prototype projects were among the most important tasks students were required to do. When we had our first online conversation, the teacher showed us how to do it right. For the next weeks, students were tasked with moderating and facilitating the online conversations in order to evenly spread the teacher's time and energy. The transcript analysis did not include teacher posts because of this. Garrison and Anderson stress the need of distributing instructional presence since student moderation might lessen the teacher's authority and enable more open conversation. As part of the final project, students were asked to combine everything they learned in class into a new course.

## Community Survey Instruments

The Inquiry Instrument consists of three parts, Attendance, Social Presence, and Cognitive Presence, as well as eleven subsections. Each question was graded on a five-point Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement. CoI has been validated as a measure of Teaching, Social, and Cognitive Attendance in previous research. Cronbach's alpha values greater than 0.7 imply high reliability and internal consistency for all CoI scales and subscales.

## Analyses of Data

SPSS version 22 was used to do statistical analysis on quantitative survey data. The data from the survey were examined descriptively. The subscale's average score is determined by combining the responses to individual questions and dividing it by its total number of questions (12). In addition, responses to individual questions were shortened to include both agree and strongly agree with responses when applicable. There are three types of responses: agree, disagree, and strongly disagree for Community Inquiry Instrument. The Consolidated Criteria for Reporting satisfaction interview (COREQ) was used to structure and report the study.

The script for the semi-structured telephone interview is based on the two axes (1) experience and satisfaction with the simulation program (How was your experience with the learning program? And How did you feel when you participated in this type of learning?); and (2) the perceived effect of the learning program (What did you get from the learning program? In your opinion, what factors do you think this training helped you improve? For you, what are the weaknesses of this type of learning? And To what extent where is this learning program useful to you?).

Furthermore, a correlation analysis was performed to identify the link between the variables under consideration (teaching attendance, cognitive attendance, social attendance).<sup>16</sup> Interviews were meticulously recorded and transcribed precisely as they were said. The Nvivo 12 software was used to evaluate the data. All team members participated in discussions to achieve consensus on the final theoretical idea. Qualitative and quantitative data are combined to triangulate, clarify, and elaborating on conclusions. Internal logic and credibility are established via the use of quotations from the text.

This method was used to examine how aspects of the community of inquiry had evolved throughout time. It is possible to make reliable and accurate judgments from data using transcript analysis, which is utilized here. In accordance with the study approach, both manifest and latent content analysis methodologies were used to code and investigate the posting patterns of social presence, teaching presence, and cognitive presence. Category indications specified in the CoI framework were used together with the message's context to determine how the researchers classified it. The transcripts were examined using an agreed coding technique by the study's first author and a research assistant. For practice and familiarity, researchers categorized two conversation transcripts from a prior online course. The inter-rater reliability of the first transcript coding training session was. Despite the adoption and advantages of a negotiated coding technique, this offered an assessment of the coders' dependability. It was via this negotiation process that the researchers were able to arrive at a final evaluation of the coded transcripts. It was only via negotiation that the coding scheme could be improved, small faults could be corrected, boosting the system's overall dependability.

## Result

During the classification procedure, five main themes were identified, two of which had sub-themes, as well as the number of participants according to the theme as shown in Table 1. The overwhelming majority of students were pleased with the topic, with the substantial majority stating that it exceeded their expectations in every aspect. Several contributing factors have been identified, including the subject's adaptability in delivery modes, flexible options for participating in live online learning circle meetings, adaptability in the presentation of assessments, and the strong connections that lecturers foster between university studies and workplace-relevant research practice. Despite the fact that some students expressed discontent with this course component, the descriptive statistical analysis of the survey data revealed that the majority of students were pleased with the topic's design and delivery (Table 2). The majority of survey participants concurred with every survey statement. Design and Organization (Teaching Attendance), Open Communication (Social Presence), Trigger Event, Exploration (Cognitive Presence), and Resolution (Cognitive Presence) all received overwhelming support from participants (Cognitive Event). Consensus was also expressed by

**Table 1** Theme and Sub-Theme

Theme	Sub-Theme	N
New experience and fun to learn	Lecturers bring more attention to each student	6
	Do not force the ability	5
Challenging in learning	Topics of daily events	9
	Does not care about right or wrong; the important thing is to think	6
Continuous enthusiasm	Main foundation motivation	7
	Student support system	7
Personal branding	Increase online reputation	7
	The more people hear our voice	5
Useful for others	A responsive person	5

**Table 2** A Descriptive Statistical Analysis of the Findings of the Col Survey Using Podcast

Scales	Sub-Scales Questions	Mean	SD	% Agreed or Strongly Agreed	Overall Mean Sub-Scale Score	Overall SD Sub-Scale Score
Teaching Presence	Design and organization				4.40	0.55
	1. The instructor delivers critical subject material succinctly.	4.24	0.63	90%		
	2. The teacher conveys critical course goals succinctly.	4.38	0.62	93%		
	3. The teacher educates students explicitly on how to conduct subject-specific learning activities.	4.38	0.77	90%		
	4. The teacher provides critical dates/timeframes for learning tasks in a clear and concise manner.	4.62	0.49	100%		
	Facilitation				3.82	0.79
	5. The teacher was quite helpful in highlighting areas of agreement and disagreement on the subject, which improved my understanding.	3.76	0.87	60%		
	6. The lecturer is really helpful in directing the class toward a thorough grasp of the subject matter, which assists me in clarifying my thoughts.	3.96	0.82	72%		
	7. Instructors assist students in remaining engaged and contributing to meaningful conversation.	3.76	1.06	65%		
	8. The teacher assists me in learning by keeping course participants on target.	3.72	0.84	62%		
	9. The lecturer encourages students to experiment with new concepts during this course.	3.93	0.84	69%		
	10. The instructor's efforts lead to the creation of a sense of community among the topic participants.	3.86	1.09	62%		
	Direct instructions				4.02	0.84
11. The teacher assists me in focusing the conversation on pertinent subjects in a way that facilitates my learning.	3.86	0.91	59%			
12. The teacher gives constructive comments that assists me in identifying my strengths and limitations.	3.93	1.13	69%			
13. Instructors offer comments on a timely basis.	4.27	0.99	79%			
Social Presence	Affective expression				3.55	1.23
	14. Getting to know people in different subjects helps me feel a feeling of connection to them.	3.76	1.27	59%		
	15. I am capable of developing a variety of impressions about some of the subject participants.	3.48	1.22	59%		
	16. Online communication, or web-based communication, is an excellent way to engage in social interaction.	3.55	1.31	63%		
	Open communication				3.97	0.84
	17. I am at ease communicating via internet media.	4.00	0.96	78%		
18. I am at ease participating in a debate about the issue.	4.00	0.88	78%			
19. I am at ease while conversing with other subjects.	3.92	0.92	70%			

(Continued)

Table 2 (Continued).

Scales	Sub-Scales Questions	Mean	SD	% Agreed or Strongly Agreed	Overall Mean Sub-Scale Score	Overall SD Sub-Scale Score
Cognitive Presence	Group cohesion				3.69	0.90
	20. I am confident in my ability to disagree with others while retaining trust.	3.63	0.88	59%		
	21. I believe that other subjects acknowledge my viewpoints.	3.74	0.86	63%		
	22. Online conversations aid in my development of a collaborative spirit.	3.73	1.17	67%		
	Triggering events				3.79	1.12
	23. The issue raised heightens my interest in the subject.	3.81	1.07	74%		
	24. Subject-related activities aroused my interest.	3.80	1.19	70%		
	25. I am inspired to investigate issues about the subject	3.76	1.18	74%		
	Exploration.				4.07	0.78
	26. To examine the problems addressed in this course, I use a range of sources of information.	4.17	0.83	89%		
	27. Brainstorming and discovering essential data aides me in addressing content-related difficulties.	3.97	0.85	78%		
	28. Online conversations have been helpful in helping me appreciate alternative points of view.	4.06	1.03	74%		
	Integration				3.86	0.84
	29. Integrating new material enables me to respond to questions given during class activities.	3.84	0.77	70%		
30. Educational activities assist me in developing explanations/solutions.	3.87	0.98	63%			
31. Reflections on course content and discussions assisted in my grasp of the class's core concepts.	3.84	0.98	63%			
Resolution				4.00	0.69	
32. I am capable of describing how to evaluate and apply the knowledge gained in this course.	3.80	0.88	78%			
33. I have created practical answers to topic difficulties.	4.00	0.78	78%			
34. I am capable of applying the information gained in this topic to my work or other non-class activities.	4.19	0.68	85%			

participants regarding the Direct Instruction (Teaching Attendance) and Integration (Cognitive Presence) subscales, with the majority of comments on each subscale expressing agreement. Less than two-thirds of respondents agreed or firmly agreed with the majority of subscale items on the majority of subscale issues. There was no accord among the participants regarding facilitation (class attendance), affective expression (social presence), and group cohesion (Social Attendance).

In addition, a CoI survey instrument was provided at the conclusion of the session to examine the links between the three CoI presences and student perceptions of learning and happiness. Developed and tested by Ice et al, the equipment is now in use worldwide. Cronbach's Alpha was 0.94 for the presence of instruction, 0.91 for the presence of social interaction, and 0.95 for the presence of cognition. The survey administered by the Community of Inquiry (CoI) included 13 questions about perceptions of teaching presence, 9 questions about perceptions of social presence, 12 questions about perceptions of cognitive presence, one question about perceptions of learning, and one question about perceptions of satisfaction. In the Likert-type scale, things were rated from 1 (strongly disagree) to 5 (strongly agree) on a scale of one to five. The survey was completed by 20 students. Four open-ended questions were included in the survey to allow students to express any problems or difficulties they had with the course in terms of both their learning and their overall happiness. Constant Comparative Analysis (CCA) was used to analyze the students' replies to these questions, which included open coding, anatomical coding and selective coding in three stages.

## New Experience and Fun to Learn

Lecturers pay attention to students' abilities is essential for students because they want to be treated according to their abilities. So that they are free to express what they are able and willing to. In addition, each student has different abilities, so they only need to appreciate their abilities without forcing students' abilities. However, efforts and motivation are needed so that they can improve their abilities. A different approach that makes them more open and comfortable, just like their peers.

## Lecturers Bring More Attention to Each Student

Lecturers always remind of future commitment and motivation to make lectures different. And the focus of learning is the ability of students, making them feel valued and valuable, so they are motivated

The lecturer is more open and pays attention to the students' comprehension, so we feel comfortable and clear Participant 3,4,6,8,11,17

A challenging aspect of lecturer design and delivery relates to managing students' learning commitments and interactions. Students who expressed pleasure commented that the flexibility in subject delivery alleviated some of the challenges.

## Do Not Force the Ability

Students' abilities vary depending on many factors. Lecturers are required to analyze abilities and provide different methods according to the abilities of these students.

At first I didn't understand, and it was explained repeatedly so that I understood, but with my ability, it was difficult for the lecturer to understand my situation Participant 2,15,18,19,20

Explanation: Students need to know their character, so it requires more effort, but it will increase their satisfaction. By getting to know them, the lecturer will not give assignments beyond their abilities but always accompany them so that their abilities can improve.

## Challenging in Learning

Challenging learning is learning in which students are faced with problems, new possibilities, dilemmatic problems, and paradoxes according to the level of intelligence.



## Topics of Daily Events

Mandates learning that is interactive, inspiring, fun, challenging, and motivating students.

The topics raised are exemplified as the circumstances around us so that we understand better to understand what is meant by Participant 1,3,5,7,9,10,13,17,20

Learning by linking everyday encourages and encourages students to achieve achievements, techniques, dare to express and actualize themselves and compete.

## Does Not Care About Right or Wrong; the Important Thing is to Think

Learning that provides opportunities for students to establish meaningful collaboration with their friends or teachers. Inspirational learning is learning that encourages and triggers students to find out

The topics raised are exemplified as the circumstances around us so that we understand better to understand what is meant by Participant 2,4,6,8,11,19

A series of activities that allow students to express and actualize themselves through various meaningful activities and works.

## Continuous Enthusiasm

### Main Foundation Motivation

Learning by motivating the learning process for students can make students active and can be involved in learning. In addition, good learning must also provide the right stimulus to make students want to learn with lessons.

It's fascinating and self-building, the first time we meet, because it's always an uplifting motivation. Participant 4,7,9,11,16,19,20

The potential to achieve the indicators planned in each learning process will be achieved. The diversity of students' character in a class will make the teacher must be able to read and understand students. So that learning plans can be arranged in such a way as to accommodate all the characters possessed by students. One method that can be used by someone to raise the enthusiasm and enthusiasm of students in learning is the teacher's ability to provide motivation or reinforcement in the learning process.

## Student Support System

Lecturers have carried out various efforts of online learning services not to burden students, but teachers are still experiencing problems in the field. Fortunately, there is a support system built to support learning.

We feel we belong because we have to support each other with our friends, that is more important than the material given Participant 6,7,8,9,16,18,20

Learning system support applied in the learning model will be an instrument for lecturers to move learning activities. Another function of the learning model is a guide for learning design creators and educators to determine strategies and implementation of learning activities so that learning objectives can be achieved successfully.

## Personal Branding

### Increase Online Reputation

The adoption of social media has become something that should be done -if you do not want to say it is a must-by university in Indonesia. Besides being very useful as a promotional medium, social media is also beneficial as a means of communication, especially during the Covid-19 pandemic, where lectures are no longer conducted face-to-face.

We are proud that our name is on google search, so we are excited to make podcasts Participant 3,5,7,10,16,17,19



During the pandemic, many universities in Indonesia maximize the function of social media, both for teaching and learning activities, new student admissions, and public relations. However, that does not mean they are adopting social media now. Most of them have used social media for these purposes for a long time.

## The More People Hear Our Voice

Young people, as students, must be empowered to work optimally. Their pure voices must not only be heard but also acted upon. So they feel they belong.

People hear our voices from all over the world, so we are happy because we can speak for the world Participant 4,9,11,16,19

The pandemic period made students voice their voices even though they could not meet face to face. With the media, students are increasingly free to voice their voices to be heard. So that they contribute to each other.

## Useful for Others

### A Responsive Person

Students are young intellectuals who have a role not only for themselves but also for the community, nation, and state. The role and function of students to create intellectuals who care about their nation must be supported by the development of human resources for students who have good morals and intellect.

The principle of always giving makes us more solid and useful for others participant 5,8,14,15,20

Students are the seeds of the next fighters who become Agents of Change in all fields and become Social Controls who will continue to uphold openness. Students are said to be the generation of hope that will be able to bring about change for the Indonesian state to be able to compete with countries in the world.

## Discussion

The COVID-19 pandemic began an extensive, sudden, and automatic digital transformation in society.<sup>17</sup> The pandemic forces us to take extraordinary digital leaps in our daily lives and practices, including students and their education.<sup>16</sup> In an instant, their education went from traditional classroom practice to remote digital practice.<sup>18</sup> Suddenly, an entire generation of children had to start managing and mastering digital devices to participate in their compulsory primary education, including the col method combined with podcast media.<sup>14,19</sup>

The collaborative constructivist framework, CoI, has been the topic of many studies, discussions, and debates through podcasts. While the research attests to CoI's efficacy in "considering the many intricacies of teaching and learning",<sup>4</sup> it raises concerns regarding how various "presences" interact to improve learning and student satisfaction.<sup>20</sup> A distant education researcher argues that lecturers' behaviors and attitudes, as well as the structure of topics, "are probably the greatest recipe for successful online learning", a remark that is mirrored in the data provided in themes one and two this study. The primary axis is the presence of lecturers, and the features of their presence (design, delivery, and facilitation) influence the degree of learning and inquiry (cognitive attendance).<sup>21</sup> Lecturers' behaviors also affect students' and community members' feelings of belonging<sup>20</sup> (social presence). Akyol and Garrison also emphasize the critical importance of teacher attendance, stating that "students who perceive greater levels of instructor attendance also report better rates of attendance, learning, and cognitive satisfaction".<sup>4</sup>

The participants in this study discovered that while live online learning circle meetings were highly effective at providing support, information, and direction in conjunction with assessment, discussion, which is thought to be critical for promoting investigation,<sup>12</sup> is less visible.<sup>22</sup> Based on the assumption that discussion is a collaborative endeavor, it Argues that the presence and actions of lecturers may promote and drive discussions toward deeper inquiry and learning.<sup>23</sup> Emphasize the need to devote time to developing more in-depth conversations. Social presence has a significant impact on cognitive presence in studies on CoI.<sup>14</sup> Observes that social presence "develops interpersonal skills but may not be required to synthesize knowledge",<sup>24</sup> a feature that may be regarded positively in terms of nursing research education.<sup>25</sup> While some students, particularly those who participated in the interviews, expressed a sense of community, active inquiry, and connectedness, others expressed discomfort communicating openly in live online learning circle sessions and blogs, a factor related to

personality, IT skills, and individuality. Regardless of community existence, a lack of group cohesion suggests a growing community rather than an established community.<sup>26</sup>

Collaboration skills development is becoming more essential in the current world and contemporary research community.<sup>27</sup> Nurse researchers must be both collaborative and critical thinkers.<sup>28</sup> This is why, when designed and executed correctly, CoI with podcasts is ideally suited for teaching nursing research; it may prepare students with not just subject-matter knowledge and critical thinking but also with the skills necessary for contemporary cooperation.<sup>29–31</sup> The interactive component of the three CoI attendances using podcast media substantially impacts students' learning results and satisfaction with their learning. The study's results demonstrate how the operation and success of one presence affect the outcome of another. The results, in particular, confirm the critical significance of facilitation and the application of specific facilitation techniques in boosting higher-order cognitive processes.<sup>32</sup> Students said that establishing deadlines to submit comments and views and guaranteeing prompt teacher responses on such remarks may help foster community growth. Connecting the three presence elements of the CoI framework to podcast media is critical for optimizing online learning, positive collaborative social experiences, and productive outcomes while also providing additional evidence for discussion about the importance of each presence functioning effectively for optimal outcomes.<sup>33</sup>

We describe the most prominent themes as New experiences and pleasures to learn and discuss them in previous literature and the critical insights they inform us of experiences in formal learning contexts. Previous research found that fantasy/natural conditions in the field are the main ingredients of fun learning.<sup>25</sup> We saw several cases of natural conditions in the field that became the main attraction during this learning method.<sup>34</sup> The most critical challenge most students face in higher education is the cognitive challenge—challenges in their learning. Students find media and approaches to new learning methods is a challenge to understand a learning material. Considering that active learning methods that have been learned are synergized into podcast media, it is a big challenge for most students. Understanding concepts is a big challenge for most students in higher education, from undergraduate to doctoral degrees emphasize this point of view. Challenges in understanding the concepts taught in their program and facing challenges to coordinate content with their future.<sup>35</sup>

It may be voluntarily assumed in online classes by student-enthusiasts who are willing to guide their less knowledgeable online classmates. Their contribution to the learning environment is the greatest so that other friends also become fans. They have a penchant for leading group discussions and skillfully stimulating them even online. When fans stimulate online group discussions and direct classmates in virtual classes, they help others develop a sense of belonging, emotional connection, and well-being.<sup>36</sup> The theoretical implications of this research will complement the use of Coi with various media in the future, so that students are more creative. In addition, this study complements previous research related to Coi which only uses synchronous and asynchronous media.<sup>36</sup> Campus managerial implications with the results of this research, they will make rules related to Coi that can be used in their learning with modifications to all the latest media.<sup>37</sup>

Students' learning results and happiness with their learning are influenced by the interactivity of all three CoI presences. Results from this research show how one presence's functioning and success influences the other's results. Not only that, but the statistics reaffirm the importance of the function of facilitation and the application of certain facilitation approaches in encouraging higher-order thinking. Students argued that requiring students to write comments and perspectives by a certain date and providing timely teacher response on such remarks might help foster a sense of community. For optimum online learning, good collaborative social experiences and productive outputs, it is critical that all three presences of the CoI paradigm be linked together, and that each presence functions properly.<sup>2</sup>

## Limitation

**Limitations** The present study is constrained by its limited sample size, thereby diminishing the extent to which the results can be extrapolated to the broader nursing populace, particularly in island regions. The limited correlational analysis was due to the absence of aggregated demographic information.

## Conclusion

The pandemic of COVID-19 triggered a widespread, abrupt, and automated digital change in civilization. The pandemic compelled us to create a remarkable digital leap forward in nursing education via Community of Inquiry (CoI) podcast media. Students in this study reported pleasure with their educational experiences, improved their research abilities, and identified routes

to apply research to practice, all of which are deep and meaningful learning characteristics. However, instructors should pay more attention to facilitating social and intellectual interaction to maximize the benefits of CoI using podcast media. This study is unique in that it shows the potential efficacy of CoI with podcasts in delivering nursing research education and building the knowledge, skills, and paths necessary to implement research results in practice. When appropriately utilized, CoI with podcast media is useful as a comprehensive teaching approach for research-related topics, both content and practice. The recommendation for further research is to use virtual reality media and also for practice it is necessary to apply it when practicing in hospitals.

## Abbreviations

COVID-19, Corona Viruses Disease 2019; CoI, Community of Inquiry.

## Availability of Data and Materials

The quantitative dataset generated and analyzed for this investigation is available upon request from the corresponding author. Due to the preservation of participants' anonymity and confidentiality, the qualitative dataset generated and analyzed during the current evaluation is not publicly accessible.

## Ethics Approval and Consent to Participate

This study was conducted in adherence with the principles of the Declaration of Helsinki and the ethical principles followed at STIKes Kepanjen. The current study received ethical approval from the Institutional Review Board (IRB) of STIKes Kepanjen. The research protocol was approved by STIKes Kepanjen Ethics Committee (272/S.Ket/KEPK/STIKesKPJ/VI/2021). All participants provided written informed consent. Participant's informed consent including publication of anonymous responses.

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## Disclosure

The authors report having no competing interests.

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