

## **High School Students' and Teachers' Experiences of Online Learning using the Community of Inquiry Framework**

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The Community of Inquiry framework (Garrison et al., 2000, 2010) is well researched within the higher education field but is only beginning to be studied within a K-12 context. In this study, all high school online learners and teachers were sent a survey to ask about their online learning and teaching experiences, framed around Garrison et al.'s framework. In total, 209 students and 53 teachers responded to online surveys, while 43 students and 21 teachers also participated in interviews. Findings showed that while the cognitive, teaching, and social presence elements of the Community of Inquiry framework were relevant to this level, fewer students reported experiencing these elements than teachers reported facilitating them. While the Community of Inquiry framework appears promising for high school online learning courses, further research is needed to investigate what is happening and why.

Rural schools in New Zealand are typically very small which means the range of subjects that can be taught is limited, and teachers cannot always teach their specialist area (Barbour & Siko, 2019; Education Gazette Editors, 2020; Pratt & Pullar, 2013). In the 1990s, some rural schools started to self-organise into eClusters (learning communities) to share teaching resources and provide classes at a distance for students within their cluster (Barbour, 2011). In 2020, there were five secondary eClusters, as well as one primary cluster, and the Virtual Learning Network (VLN) had been established as an umbrella organisation to facilitate eClusters' activities (see <https://vln.school.nz/>).

This study focused on the secondary eClusters as they usually implement a similar model of delivery in which students are typically based in their home school but are timetabled for their virtual class (or classes). Typically, there is a one-hour synchronous session per week, supported by additional activities. They are supported their eteacher, usually based in another school, as well as an eDean within their school (see Pratt & Pullar, 2013 for an in-depth exploration of how one cluster arranged its classes).

To date, there has been no systematic study on teacher and learner experiences within New Zealand's secondary eClusters (see Barbour et al., 2016; Williamson-Leadley & Pratt, 2017). With the Covid-19 pandemic came recognition that online learning was likely to be happening for some time, and the New Zealand Ministry of Education commissioned a study exploring this issue (see Lai & Pratt, 2020). The article reports on some of the data from this study, focusing on secondary school teacher and learner experiences, examined through the Community of Inquiry model (Garrison et al., 2000, 2010).

## THE CURRENT STUDY

What is different about this study to many recent studies is that while it was conducted during the pandemic, the teaching and learning model for the classes that the participating students and teachers were asked about had not changed. As in most places in the world, 2020 was a time of much disruption and ongoing uncertainty.

The first case of Covid-19 in New Zealand was reported on 28 February 2020 (see <https://covid19.govt.nz/about-our-covid-19-response/history-of-the-covid-19-alert-system/> for full details). This was followed by a slow increase in measures aimed at limiting its arrival and reducing the possibility of spread within the community (see <https://covid19.govt.nz/assets/resources/tables/COVID-19-Alert-Levels-detailed-table.pdf> for full details of the restrictions). A number of these measures impacted how schools could run. For example, physical distancing requirements were

in place for much of 2020, which was not always easy given the size of classrooms/number of students. Similarly, students were required to remain with their class and not mingle with other students. There were various mask requirements for both students and teachers, which made teaching and learning difficult.

In addition, there were lockdown periods which required a shift to remote learning, as well as lesser levels of restriction which also impacted the ability for students and teachers to attend schools. The phrase 'remote learning' has been carefully chosen to reflect that this was undertaken in an emergency situation, and only teachers and students who were involved in the ongoing online learning in New Zealand (less than 1% of all secondary students in New Zealand) had previously experienced this. This means even experienced online students were working with inexperienced online teachers (see Yates & Starkey, 2020 for further details of the New Zealand teaching and learning experience during the first year of the Covid-19 pandemic).

The results of this study will add to our growing understanding of what was happening in education during the Covid-19 pandemic, and the lessons we can learn from that experience. It will add to the growing body of research exploring learning through the COI model in contexts for which it was not designed. As such, the research questions for this study were:

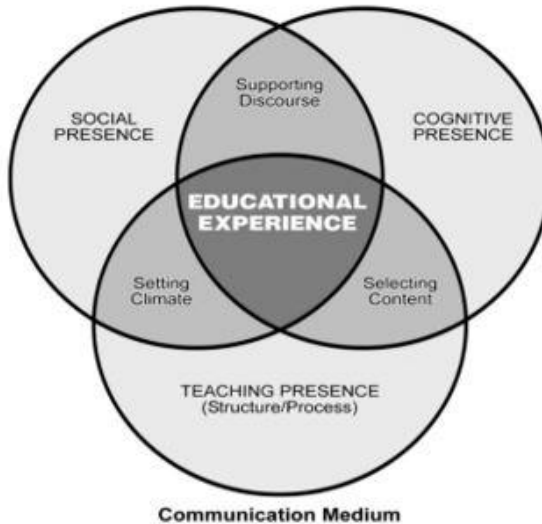
1. What is the learner experience of the VLN students in relation to the cognitive, teaching, and social presence of their online class?
2. What is the teacher experience of the VLN teachers in relation to the cognitive, teaching, and social presence of their online class?

## PREVIOUS LITERATURE

Over twenty years ago, when technology was very different, a new model of distance/online learning emerged, whereby learners could communicate with one another and their teacher, using asynchronous text-based communication (see Pratt, 2016). Recognising that this was a departure from existing models of distance learning, which utilised technologies such as phones as well as mailing material back and forth, Garrison et al. (2000) created a framework to use when thinking about learning in higher education that utilised asynchronous text-based communication, known as the Community of Inquiry model.

Garrison et al. (2000) believed effective education required that teachers and students were part of a Community of Inquiry, and the framework they created assumed "that learning occurs within the Community through

the interaction of three core elements” (p. 88). As Figure 1 shows, the educational experience was perceived to be at the heart of the combined impact of cognitive, teaching, and social presence.



**Figure 1.** Garrison et al.’s (2010) original Community of Inquiry framework (p. 6).

Cognitive presence is related to students’ ability to construct meaning through the communication process of an online community and reflection on this process (Garrison et al., 2001; Kaczko & Ostendorf, 2023). In contrast, teaching presence is related to the role of the teacher as facilitator of the discussions, as well as in providing direction and instruction (Garrison et al., 2003, Kaczko & Ostendorf, 2023). In addition, it encompasses the design and structure of the learning experience and environment (Stewart, 2019). The final of the three elements, social presence, is about ensuring that learners feel able to engage in the Community of Inquiry (Kaczko & Ostendorf, 2023). It encompasses ideas around recognising people as real people with personalities (Sanders & Lokey-Vega, 2020) and the development of respectful relationships between members of the Community of Inquiry in order to allow for the open sharing of ideas (Garrison, 2017; Kaczko & Ostendorf, 2023).

Although originally designed for text based asynchronous courses, shortly after the development of the Community of Inquiry framework, various of the developers began applying it to other forms of learning; Garrison to blended learning, and Archer to higher education more

generally (Garrison et al, 2010). It has continued to be used extensively over the last twenty years in a range of higher education settings (Caskurlu et al., 2021; Kaczko & Ostendorf, 2023; Park & Shea, 2020). Recently, the framework has been used increasingly in non-higher education settings.

The use of the Community of Inquiry framework to conduct research K-12 settings has increased dramatically in recent years. Much of this increase can be attributed to the necessity to shift teaching and learning in K-12 settings online, due to the Covid-19 pandemic (e.g., see Johnson et al., 2023; Medina & Del Rosario, 2022; Nelson, 2023; Wallace, 2021). There were also, however, small number of studies using the framework before the pandemic made online learning and teaching more commonplace (Sanders & Lokey-Vega, 2020). A notable example of this was Sanders and Lokey-Vega's (2020) exploration of the alignment of the Community of Inquiry framework to K-12 settings. Based on their case study involving four teachers who were experienced at teaching at an online high school, they concluded that many aspects of teacher practice aligned with the Community of Inquiry framework. They also identified an element of difference between the Community of Inquiry framework in higher education and K-12 settings. They suggested adding an additional element; collegial presence, which refers to online teachers having access to people who can support them, leading to them better implementing cognitive, teaching, and social presences.

A common theme in research into online learning in the K-12 area has been the need for additional work exploring theoretical frameworks and models in the K-12 setting (Barbour, 2012, 2015; Zweig & Stafford, 2018). The previously discussed work done by Sanders and Lokey-Vega (2020) is a step in this direction, and this study continues their work exploring the use of the Community of Inquiry framework in K-12 settings.

## METHOD

This mixed methods study used online surveys along with interviews to gather data from students and teachers involved in the Virtual Learning Network in New Zealand. The interviews were conducted in a range of formats to suit the preference of the participants, and to allow for flexibility during a time of ongoing disruption due to Covid-19. These formats were either individual or zoom phone interviews, a zoom group interview, or an asynchronous method. The asynchronous method involved participants being sent the questions via email and responding in their own time via return email or a recorded response.

## Participants

All secondary students were invited to participate in this research, and 209 students responded, for a 13.5% response rate. The majority (60.4%) of students were female, while nearly three-quarters (74.6%) were of New Zealand European (NZE) descent. Around 12% (12.4%) of respondents were Māori or Pasifika, and the remaining were Asian (8.6%), Middle Eastern/Latin American/African (2.9%) or of another ethnicity (1.4%).

Most students were in their final years (Year 11-13) of secondary school (Y11, 14.45, Y12 43.1%, and Y13 39.1), with only 3.5% in years 9 or 10. They were taking a range of subjects via their online classes. These were classified by type, as can be seen by Table 1. Due to the small number of participants in the health and physical education group, these students were not included in analyses focusing on school subject.

**Table 1**  
Number of students enrolled in each subject area

Subject	Frequency	Percentage
Humanities	39	20.9
Languages	34	18.2
Sciences and Maths	29	15.5
Social Sciences	28	15.0
Technologies	26	13.9
Commerce	24	12.8
Health & Physical Education	7	3.7
Total	187	100

Of the 209 student survey respondents, 43 volunteered for interviews. The majority of interviews were conducted by email (26), with the remainder by phone (16) or zoom (1). Only two of the students who were interviewed had previous experience of online learning.

All secondary teachers within the VLN network who were teaching in 2020 were invited to participate (124), with 53 responding (43% response rate). Most of the teachers who participated were female (77.4%) and of NZE ethnicity (83%). A small number of teachers were Māori (2), Pasifika (1), or of Asian (4) or other (2) ethnicity. The participating teachers had a mean of 6.77 years of online teaching experience ( $SD=5.41$ ). For the purpose of comparisons, teachers were divided into three categories following Rodríguez and McKay (2010): Beginning, having one year of online teaching experience (7, 3.2%), Experienced, up to five years of

online teaching experience (21, 39.6%); and Most experienced, more than five years of online teaching experience (25, 47.2%). The teachers taught across the seven categories of classes identified previously.

Of the 53 teachers who responded to the survey, 21 (39.6%) agreed to participate in interviews. Six teachers chose to participate via email interviews, while nine had individual zoom interviews. The remaining teachers were interviewed in two group zooms, one with two teachers and the other with four. The individual interviews took between 30 and 50 minutes, and the group interviews took around one hour. In line with the survey data, the majority of interview participants were female (19) and of NZE ethnicity (20).

### **Instruments**

Two types of instruments were developed for this study: surveys and interview schedules. For the data discussed in this article, two versions of each were developed, one each for the students and the teachers. Survey instruments were reviewed by a group of those involved in online learning to ensure face and content validity and were piloted by teachers and students.

#### ***Online Survey***

The student surveys comprised demographic and background information, and questions about their overall learning experience. Nine questions were also asked about cognitive, teaching, and social presence (see Table 2) with some of these adapted from the survey instrument of the Community of Inquiry model (Garrison et al., 2000; Stewart, 2019). As part of the larger study, questions were asked about barriers and affordances, but were not included for the purpose of this analysis.

The teacher survey also comprised demographic and background information, and questions associated with cognitive, teaching, and social presence (see Table 2). As with the student survey, additional questions were asked about the larger study, but were not included for the purpose of this analysis.

Each survey concluded by asking participants if they were willing to participate in an interview. If they said yes, they were asked about their preference for the format of this.

**Table 2**  
**Questions used to measure cognitive, teaching, and social presence**

Students	Teachers
<b>Cognitive Presence</b>	
I used a variety of Internet information sources to help me learn in this online class	I encouraged students to use a variety of Internet information sources to support learning in this online class
My participation in the live videoconferencing helped me to understand the key ideas of what the class was about to learn	I used videoconferencing in this online class mostly for discussing the key ideas of what students were about to learn
My participation in the online platforms helped me to understand the key ideas of what the class was about to learn	I used online platforms in this online class mostly for discussing the key ideas of what students were about to learn
<b>Teaching Presence</b>	
My online teacher encouraged the class to share ideas and work together	I encouraged students to share ideas and work together in this online class
My online teacher explained our learning goals and how we were making progress towards them	I guided students to understand the learning goals and how to achieve them in this online class
<b>Social Presence</b>	
I felt comfortable interacting with my classmates and teacher in this online class	I felt comfortable interacting with students in this online class
My classmates in this online class have provided feedback to help me learn	
I felt a sense of belonging in this online class	

### ***Interviews***

The interview protocols for each group were developed based on the literature and survey questions and designed to further explore issues and experiences related on online learning. The interview prompts were designed to be sent directly to email participants for them to respond to and to be used as prompts in the phone and zoom interviews.



## Procedure

All principals of schools involved in the Virtual Learning Network were contacted via email. The purpose of the project was explained, and they were asked to distribute information about the project and a link to the relevant survey to students and teachers who were associated with online learning. Survey data was received, and note was made of those participants willing to take part in an interview. Interviews were conducted with all willing participants, in their preferred format. Synchronous interviews were conducted at a mutually agreed upon time. Where required, interviews were audio recorded before being transcribed.

Survey data was exported to SPSS for analysis. All text data was analysed using the constant comparative method (Maykut & Morehouse, 1994). Quotes representing comments that were either typical or uncommon were highlighted for use in publications.

## Results

Within the findings, firstly the data from students will be presented. Initially a composite score will be reported, along with tests identifying demographic details which impacted on these. This will be followed by details of their experiences, organised by Garrison et al.'s (2000, 2010) presences. In doing this, we will draw on data from both the survey and the interviews conducted with secondary students. This will be followed by an exploration from teachers, which will follow a similar pattern.

### *Experiencing teaching, cognitive, and social presence: Students*

The degree of internal consistency of the nine-item scale used to measure students' experience of the three presences was tested and found to be satisfactory (Cronbach's  $\alpha = .819$ ). Having confirmed the reliability of the measure, an overall score of all the items was constructed, with the mean composite score of 3.58 (1= strongly disagree, 5=strongly agree). T-tests and ANOVAs were conducted on this score to see if there were differences based on demographic factors. No differences were found in gender [ $t(182) = .306, p = .760$ ], but a one-way ANOVA on the effect of ethnicity on the presences found a significant difference between the three groups [ $F(2, 178) = 3.396, SD = .036$ ]. A Tukey post hoc test was conducted, and a significant difference between the Asian ( $M = 3.99, SD = .46$ ) and NZE students ( $M = 3.57, SD = .66, p = .037$ ), indicating that Asian students had experienced more cognitive, teaching, and social presence than NZE students in their online class. No significant difference (all  $p$ 's  $> .05$ ) was found between any other ethnicities.

The one-way ANOVA conducted to explore the impact of school year on students' experiences of the presences found a significant difference [ $F(3,180)=2.651, p=.050$ ]. A Tukey post hoc test was conducted and found a significant difference between Year 9-10 ( $M=4.24, SD=.41$ ) and Year 13 students ( $M=3.54, SD=.70, p=.034$ ), indicating Year 9-10 students had experienced more cognitive, teaching, and social presence than Year 13 students in their online class. No significant difference between any other year groups was found (all  $p$ 's  $>.05$ ).

A one-way ANOVA was conducted to test the impact of school subject on students' experiences on the presences. A significant difference was found [ $F(5,159)=5.315, p<.001$ ]. A Tukey post hoc test was conducted and found a significant difference between students taking language classes ( $M=3.96$ ) and those taking science and math classes ( $M=3.23$ ). In addition, there was a significant difference between students taking commerce classes ( $M=3.93$ ) and those taking science and maths classes. No significant difference between any other school subject groups was found at the .05 level of significance. This shows that in the language and commerce classes, students had experienced more cognitive, social, and teaching presence than students in science and mathematics.

In addition to asking about their experience of social, cognitive, and teaching presence, students were asked to provide an indication of their overall learning experiences. As Table 3 shows, the majority of students enjoyed, were successful at, and motivated in, their online classes. In order to see if there was a relationship between students' overall experiences and their experience of the presences, a Pearson product-moment correlation was conducted. A strong, positive, and significant correlation was found ( $r = .632, n = 194, p <.001$ ), indicating that students who experienced a positive cognitive, teaching, and social presence also had an overall positive learning experience.

**Table 3**  
Students' experience of their online class

	Very enjoyable/ Enjoyable (%)	Neutral (%)	Very unenjoyable/ Unenjoyable (%)
What was your overall experience of this online class?	77.0	9.6	13.4
	Very successful/ successful (%)	Neutral (%)	Very unsuccessful/ unsuccessful (%)
Were you successful in meeting the learning goals of this online class?	77.0	15.3	7.7
	Strongly agree/ Agree (%)	Neutral (%)	Strongly disagree/ Disagree (%)
I was motivated to learn in this online class.	62.4	24.7	12.9

**Cognitive Presence.** Most students agreed or strongly agreed to the three questions focused on cognitive presence (see Table 4). It should be noticed, though, that more students agreed that they used a variety of Internet sources, something they could do on their own, than did regarding the use of the videoconferencing and online platforms.

**Table 4**  
Cognitive presence in the online classes

	Strongly agree/ Agree (%)	Neutral (%)	Strongly disagree/ Disagree (%)
I used a variety of Internet information sources to help me learn in this online class	79.3	15.0	5.7
My participation in the live videoconferencing helped me to understand the key ideas of what the class was about to learn	68.3	22.8	8.9
My participation in the online platforms helped me to understand the key ideas of what the class was about to learn	64.7	28.4	7.0

Data from the interviews highlighted the differences in ways that students experienced their online courses, and in particular, the videoconference component. There were two distinct approaches commonly used in the one-hour videoconference. Just under half the students interviewed (49%) reported experiencing a very teacher-centred approach. These students experienced very little discussion, often that it was “Pretty much a lecture” (SS59). As one student said,

[The teacher] will give us a lesson, and then she has a website where we go through, and each week she set us homework. And we do the homework, and we scan it in and we send it to her. And she checks it over and gives us feedback... she sometimes asks a question. But there’s practically no discussion. (SS75)

Other students had a very different experience, with the videoconferencing being used largely as a time to discuss the content and clarify issues.

I think we discussed for the full hour, we talk about the topic...sometimes [the teacher] does split our class up into different Zoom call so that we can talk with our peers about a topic and then work on a Google Doc so that we know more about the topic that we are doing...And he then comes in and inspects what we’ve been doing. And then we get back together as a class. And then we discuss what we’ve written and what we found out. And this way, we get some of our own research and get different opinions on different aspects of the topic that we’re doing. (SS10)

So through zoom, [the teacher] goes through the work that we’re going to do during the week. And because that sets as homework, and then also does some sort of teaching within that where we practice speaking [language class], and we would go into groups and do some group work as well. (SS51)

**Teaching Presence.** The majority of students also agreed with the three statements related to teaching presence, although generally in smaller numbers than did with the cognitive presence statements. As Table 5 shows, more students responded positively to the statement regarding learning goals than the other statements. The lowest percentage of students who agreed with the statement was related to concept of sharing ideas and working together, perhaps not surprising, given the teacher-focused nature of many of the videoconference sessions.

**Table 5**  
Teaching presence in the online classes

	Strongly agree/ Agree (%)	Neutral (%)	Strongly disagree/ Disagree (%)
My online teacher provided regular feedback to help me to learn	67.5	16.5	16.0
My online teacher encouraged the class to share ideas and work together	63.8	20.8	15.4
My online teacher explained our learning goals and how we were making progress towards them	70.3	19.3	10.4

Although over two-thirds of students agreed or strongly agreed that their teacher provided them with regular feedback, feedback was a concern for students. In answering a survey question that asked what the worst thing about their online class was, one quarter of students responded that it was the lack of immediate feedback. They missed being able to talk to the teacher and get immediate answers, or to ask for help from a classmate.

I was often confused as to what was happening and I wasn't in a classroom full of people where I could just turn and ask them. I would have to email the teacher and they would often take a long time to reply. (SS100)

Students reported that even if they could ask questions in class, doing so in a videoconference environment was more intimidating, as questions were asked in front of the whole class, rather than as the teacher walked by. They could and did use email and chat to ask questions but found this more difficult than asking questions "in real life".

It is extremely hard to ask questions without feeling intimidated as you don't really get one-on-one time with a teacher like you would in a classroom. Emailing was an option to help improve this issue, but it is much harder to communicate electronically as you cannot really rebound ideas with each other, and misinterpretation is easy. Learning in class with a physical teacher is much easier and more effective for me. (SS200)

Physical access to the teacher affected the students in other ways too. Students doing practical classes felt that they missed out on demonstrations of techniques, while others did not have easy access to equipment that would have been provided in a traditional classroom.

**Social Presence.** The social presence questions were the only ones where fewer than half of the students agreed or strongly agreed with the statements (see Table 6 as seen in the two latter statements, which involve classmates and a feeling of belonging. This is perhaps not unsurprising, given the earlier comments regarding a lack of discussion in some classes. Nine of the interview students commented that they had rarely talked to each other. It is somewhat reassuring, however, that more than half the students felt comfortable interacting with their classmates and teacher. This comfort in interacting with classmates and teachers was not always the case, however, with one student commenting that “We couldn’t really talk to each other that much because we have to listen to what the teacher said. But sometimes the teacher didn’t show up. And everyone was too scared to talk to each other” (SS62).

**Table 6**  
Social presence in the online classes

	Strongly agree/ Agree (%)	Neutral (%)	Strongly disagree/ Disagree (%)
I felt comfortable interacting with my classmates and teacher in this online class	58.4	26.7	14.9
My classmates in this online class have provided feedback to help me learn	27.2	27.7	45.0
I felt a sense of belonging in this online class	46.6	40.1	13.4

Other students made similar comments, noting that any relationship they had with their online classmates was a formal one, due to not knowing the classmates and spending time outside of classes with them. One student commented about the difference between connecting with their classmates and their teacher:

I found the overall class relationship awkward and unsatisfying. I think the distance made it really hard to properly connect with classmates. I connected with my teacher but that is most likely because she was accustomed to connecting virtually. (SS95)

Some teachers did their best to help classmates create relationships, but as one student noted:

As I discovered over lockdown, it is very difficult to have a casual conversation over a video conference even if you know the people you are talking to very well. (SS77)

Several interview students reported that the lack of a relationship with their classmates impacted on their learning, something that was identified by 7% of the survey respondents as being the worst thing about an online class.

I don't get top grades in this class, and I believe that is purely because I don't have a physical class [of] students to bounce ideas off...If I want to learn anything, I learned it myself... (SS105)

Another student lamented that lack of opportunities to make friends, and to learn from more capable others:

I feel like I would be good friends with some of my classmates if the barrier of distance wasn't an issue. I also like learning with people who are above my skill level, but since I have no way to have a conversation with my peers I can only rely on my teacher for help. (SS87)

### ***Facilitating teaching, cognitive, and social presence: Teachers***

The degree of internal consistency of the seven-item scale used to measure teachers experience of the three presences was tested and found to be satisfactory (Cronbach's  $\alpha = .701$ ). Having confirmed the reliability of the measure, an overall score of all the items was constructed, with the mean composite score of 4.23 (1= strongly disagree, 5=strongly agree). T-tests and ANOVAs were conducted on this score to see if there were differences based on demographic factors. No differences were found in gender [ $t(48) = .075, p = .940$ ], but a one-way ANOVA on the effect of ethnicity on the presences found a significant difference based on online teaching experience [ $F(2,47) = 7.010, p = .002$ ]. A Tukey post hoc test showed that the beginning teacher group ( $M = 3.76$ ) was significantly lower than both the experienced teacher group ( $M = 4.25, p = .013$ ), and the most experienced teacher group ( $M = 4.37, p = .001$ ). However, there was no significant difference between the experienced teacher and the most experienced teacher groups ( $p = .577$ ), showing that  $p$  beginning teachers had facilitated

cognitive, teaching, and social presence in their online classes to a lesser degree compared to the experienced and most experienced teachers.

**Cognitive Presence.** Overall, more teachers were positive about the cognitive presence statements than students. Over 90% agreed or strongly agreed that they encouraged students to use a variety of internet source, while 90% said they used videoconferencing mostly for discussing the key ideas of what students were about to learn (see Table 7).

**Table 7**  
Cognitive presence as perceived to have been facilitated by teachers

	Strongly agree/ Agree (%)	Neutral (%)	Strongly disagree/ Disagree (%)
I encouraged students to use a variety of Internet information sources to support learning in this online class	92.2	7.8	0.0
I used videoconferencing in this online class mostly for discussing the key ideas of what students were about to learn	90.0	8.0	2.0
I used online platforms in this online class mostly for discussing the key ideas of what students were about to learn	78.0	12.0	10.0

Based on the interview data, teachers seemed to facilitate cognitive presence in three ways. Firstly, they used the videoconference as a place for asking questions and discussion, in which everyone was expected to participate. Secondly, they used collaborative work to encourage students to work together and learn from one another. Finally, they focused on the needs of their students, by getting to know them and their interests, and adapting their work to align with these. Examples of how teachers facilitated cognitive presence can be seen in the following quotes:

I've got a really nice classroom culture. We talk a lot. I make my kids talk to me...I start every lesson with a catch-up question. And when we get a little bit more confident, I asked the kids like now you're going to ask everyone a question, and they take turns doing that. I end my first few lessons with question time...they learn very quickly that I'm going to make you talk every lesson. (ST8)



I structure my lessons, basically, with a reflection on what we've just been doing... we'll work together on a question and then we come back and relook at what we are covered... this year because of COVID, I have got them working in two separate groups, and they are doing the assessment as a group activity. So they're all collaborating, they're all working on it...I'll give them time in a breakout room to work on the report and ask questions of each other talk with each other, then we'll come back again. (ST22)

I run all my work through Google community...And I do a bit quite a bit of discussion at the beginning of the year about where do you think this is taking? What are you interested in? Unlike the kids at school, you can tailor to what they're interested in, of course, you get the feedback, and you get the buy in, and I just found that so important. (ST9)

**Teaching Presence.** The majority of teachers agreed or strongly agreed with the statements regarding teaching presence (see Table 8). No teachers indicated that they disagreed with the statements regarding regular feedback or guiding students to understand and achieve learning goals. In contrast, while over three-quarters of teachers agreed that they encouraged students to share ideas and work together, nearly six percent disagreed.

**Table 8**  
Teaching presence as perceived to have been facilitated by teachers

	Strongly agree/ Agree (%)	Neutral (%)	Strongly disagree/ Disagree (%)
I encouraged students to share ideas and work together in this online class	76.5	17.6	5.9
I provided frequent feedback to students to track learning progress in this online class	86.3	13.7	0.0
I guided students to understand the learning goals and how to achieve them in this online class	96.1	3.9	0.0

The mostly commonly identified issue facing teachers trying to facilitate teaching presence was the demands that the different approach to teaching and learning made. This included the issue of contact time with students, both formal (one hour instead of four to five hours per week) and informal, such as incidental meetings around the school which could be used to check in on students' progress. Some teachers were concerned that students were not doing the out of video conference work, and so felt like they "had to cram this one lesson with as many information as I could" (ST47), which may explain the teacher-centred approach taken by some.

Teaching online also demanded more preparation from teachers. They felt they needed to be more organised in terms of what they wanted to happen during the videoconference lesson, and because they had "to plan lots of tasks, screencast, video etc. for my students to work during their study time" (ST47).

In line with comments from students, a number of the teachers felt that online learning is more of an independent and individual experience. In contrast to the students, though, teachers generally found this to be positive, with one teacher noting:

In online teaching you can hand over quite a bit of agency to the students, who are signing up for it out of choice...The benefits are that you can answer students immediately when they have a query or need...The more complex questions can be written out so the student can come back and read again, which is also helpful. Online teaching allows a sense of individual teaching... (ST31)

**Social Presence.** In contrast to the discomfort many students expressed about interacting in the online environment, nearly all (98%) of teachers agreed or strongly agreed that they "felt comfortable interacting with students in this online class", with no teachers disagreeing. They saw social presence as being important, and a number found it easier to build relationships with their online students than their in-person students. As one teacher explained,

It is the fact that you can actually build relationships with those students online...it's easier because on a face-to-face classroom [it] would almost be a bit abnormal for the students to text the teacher. Where is it's quite normal [in the online class]...In fact, it's important for them to either text me or email me as constant as they do. I think if it was a face-to-face class, teachers would feel that sort of crossing boundaries if you've got a student that is sending you a text message. (ST22)

A number of teachers also acknowledge that building relationships in an online class was something that had to be done deliberately. Doing so, however, could again result in stronger relationships than with in-person students.

But I wouldn't say it's especially difficult to build relationships with students online, but it takes a lot of deliberate planning. And that often I've had a stronger community and stronger connections with my online classes... because we've deliberately put those things in place. (ST11)

In line with previous comments, a number of teachers commented on the duality of the online classroom, where students are largely working independently, but also developing a community and collaborative approach. As one teacher explained when comparing their in-person classes to their online classes,

In my [online] class, it's very much more an individual student inquiry [but] oddly the online class is more community based and more collaborative. I feel like part of that is that there's a lot of deliberate things that I do in the background of my online class to create a certain kind of culture, atmosphere. (ST11)

## DISCUSSION AND CONCLUSION

This study invited all students and teachers involved in secondary learning online classes to participate in research exploring their experiences of online learning and teaching according to Garrison et al.'s (2000) Community of Inquiry framework. While both students and teachers generally had positive experiences in the online classes, there appeared to be differences between what students reported experiencing, and what teachers felt they had done.

The first research question asked what the learner experience of the VLN students was in relation to the cognitive, teaching, and social presence of their online class. In general, students had a positive experience in terms of cognitive and teaching presence, but their experience of social presence was different. Comments from the interviews also gave context to learners' experiences of all three presences which were less than ideal.

While most students agreed with the cognitive presence statements, it was clear from the comments in the interviews that students had very different experiences. It appeared that what happened in the

videoconferences impacted on students' perceptions. It also seemed that students preferred an interactive approach rather than a teacher-centred approach, where information was presented with little time for questions or discussion. This is not surprising, given the focus on discussion and reflection in Garrison et al.'s (2000, 2010) concept of cognitive presence.

As with the cognitive presence statements, the majority of students were in agreement with the statements on teaching presence. Those interviewed did, however, raise issues around the ease of getting timely feedback, and, in particular, the difficulties in getting informal feedback and answers to questions of understanding, or about what was required.

In contrast to the previous presences, for the majority of students in this study, social presence was lacking. While nearly 60% reported they felt comfortable interacting in the online class, from the comments it appeared that this was largely with regard to the teacher. The majority of students neither felt a sense of belonging or believed they learned from one another. In general, students seemed to believe that despite some teachers making an effort, relationships were hard to build in this environment. This is an issue that could be explored in more depth, perhaps through identifying classes where social presence was successfully achieved, and what led to this.

Despite the different foci of the three presences, key themes arose. It appeared that interaction, feedback, and relationships impacted all aspects of students' learning experience from the point of view of the Community of Inquiry framework.

The other part of the first research question asked whether factors such as gender, ethnicity, year level, and learning area affected overall online learner experience and cognitive, teaching, and social presence. Very few demographic details were found, although it appeared that the subject being studied influenced students' experience of cognitive, teaching, and social presence. While it is perhaps not unexpected that language students, for whom communication is a necessary part of class, experienced more presence than science and mathematics students, why commerce students also experienced this is less clear, and again requires further investigation. The final significant difference, that Year 9 and 10 students experienced more presence than Year 13 students was not explained in the comments but would appear to be due to the different requirements of the year levels. Year 13 students face high-stakes assessments at the end of the year, and teaching is often focused on this. In contrast, there is more freedom for teachers in Years 9 and 10.

The second research question addressed the same issues as the first, but this time with the focus on teachers. Overall, more teachers agreed with the statements about the three presences than did students, suggesting a clear difference between what teachers felt they were doing, and what students

felt they were experiencing. An example of this is with regards cognitive presence. While only 68.3% of students reported that the videoconferencing sessions were used mostly for discussing the key ideas, 90% of teachers agreed that they had done so. Similarly, while over three-quarters of teachers believed that they encouraged students to share ideas and work together, compared to 64% of students. Based on teacher comments, it is important to recognise that many of them acknowledge that they were attempting to provide experiences to students but found difficulties finding time to do so effectively. A key difference was between students' and teachers' perceptions of social presence. A number of teachers commented that while the learning journey for students was independent, they felt the class was more collaborative than their in-person classes, which was not indicative of how students felt.

There was a significant statistical difference in teachers' agreement with regards their provision of cognitive, teaching, and social presence based on their experience. Teachers with fewer than five years of online teaching experience had significantly lower scores than teachers with more experience. It would be interesting to explore further what these differences are, how they manifest, and what can be done to ensure these less experienced teachers get the support they required to provide what is needed for an effective Community of Inquiry.

In general, teachers' comments focused on the experiences in the videoconference class, rather than considering the course as a whole. In addition to the one-hour videoconference, students are provided with study periods in which they were also expected to be working on their online subjects. While some comments were made with regards to this, these were less nuanced than comments around the videoconference sessions. It would seem there is a need for online teachers to think more holistically about the class, ensuring that cognitive, teaching, and social presence are support throughout the entire course, and not just the synchronous aspect.

While this study did not explore the concept of collegial support suggested by Sanders and Lokey-Vega (2020) due to the timing of the study, previous research on individual clusters involved in the VLN network have emphasised the important of ongoing professional learning and development, which is in line with their concept of collegial support. It seems that using the Community of Inquiry approach in K-12 settings has value and should continue to be explored. It would also be interesting to explore the concept of collegial support in higher education settings, to see if there really is a difference.

It must be recognized that this study had a number of limitations. Being conducted during the first year of COVID raises questions about the generalizability of the results outside of this, while the pandemic also

meant that qualitative data was not collected in a consistent manner. Despite these issues, this study has clearly shown that while elements of cognitive, teaching, and social presence were present in the VLN classes taught in 2020, there is room for improvement. Further exploration is needed to identify why students and teachers have such different perspectives in all areas. In addition, work needs to be done to enhance students' experiences of social presence.

### DECLARATIONS

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