

## The Interplay between Teaching Presence and Cognitive Presence in Online Discussion Forum: Evidence from Online Writing Classes



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**ABSTRACT:** Students' interaction with the teacher is essential to scaffold students' knowledge and cognition. However, in an online learning program, such interaction was minimum, making the learning process becomes more challenging. This study explored the students and teacher's interaction in four discussion forums in writing classes conducted online. Deploying the Community of Inquiry framework, this study aimed to find out the aspects of teaching presence appear in the forum, to examine the phases of cognitive presence that students engaged in the online discussion forums, and to determine which aspects of teaching presence that trigger the cognitive presence. Results indicated that (i) all of the teaching presence aspects were found in the overall discussion forums, (ii) three phases of cognitive presence (triggering event, exploration, and integration) were found in the overall discussion forums, and (iii) direct instruction was found to be the main trigger of teaching presence that promote the phases of cognitive presence to the exploration and integration phases.

**KEYWORDS:** interaction, discussion forum, community of Inquiry, teaching presence, cognitive presence

### I. INTRODUCTION

The massive development of technology has impacted all walk of life, including education system. Traditional classroom system which requires students' presence physically all the time has continually been shifted to online and blended learning system which allows students to interact more with their peers as well as the instructors aside from regular face-to-face meetings. Garrison, Anderson, and Archer (2000) introduces Community of Inquiry framework (CoI) for online learning and suggest that for effective online instruction there should be three presences available in the online instruction, namely teaching presence, cognitive presence, and social presence. These presences are embedded in the learning management system (LMS). LMS is a software used to provide a collection of tools and functions to support teaching and learning processes. The tools/features usually include, among others, course management tools, online group chat and discussion, homework collections and grading, and course evaluation. The use of online discussion forum within an online course has been very effective in engaging students more with the three presences (teaching presence, cognitive presence, and social presence). With discussion forum, students and teachers can share ideas and make reflection on their learning

The success of online learning is heavily dependent on the teaching presence, that is the teacher's ability to effectively create and organize the course material, facilitate discussion, and provide clear instructions and questions (Anderson et al., 2001). Although establishing instructional design and organization might be a shared responsibility for the learning community (Garrison et al., 2000), it is, in fact, the duty of the instructors. To guide students to endure ongoing cognitive development and to model critical thinking processes, teachers must also play a role in identifying misconceptions and offering students with probing questions, comments, and extra information. Such a process is called a cognitive presence (Anderson et al., 2001). The degree of a student's cognitive presence determines how well they can reflect on and communicate in an online discussion forum in order to create and verify meaning or concepts (Garrison et al., 2001). The four stages of cognitive presence—triggering events, exploration, integration, and resolution—allow students to process the problems and topics under discussion. Social presence is an additional component that interacts with teaching presence, cognitive presence, and both. A student's capacity for social projection within a community of learners is known as social presence (Garrison et al., 2004). In sum, those presences allow students who learn through online and blended learning to engage in similar learning processes to those found in a traditional classroom.

Research working on COI framework argues that teaching presence is very much interconnected to either cognitive presence, social presence, or even both of them. A study by Rubin and Fernandes (2013), for example, suggests that teaching presence has been shown to largely influence the social and cognitive presence. Similarly, Stein et al. (2013) also report that higher phases of cognitive presence have been associated with teaching presence that included feedback and coaching. As

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teaching presence becomes central and can affect other presences, more research is needed to see how teaching presence influence each of the other presences. Of particular, studies on the relationship between teaching presence and cognitive presence have been conducted by Redmond (2011) and Zhao and Sullivan (2017). Redmond (2011) investigated the relationship between teaching and cognitive presence in blended undergraduate teacher education courses. The findings suggest that indicators of cognitive and teaching presence were found in a variety of spaces within a blended course. The majority of instructors' contributions in online discussion were those of direct instruction, while the majority of student contributions were at the exploration level of cognitive presence. This study also showed that teaching presence can be found in a range of places beyond online discussion, it does change over time, and it can impact on students' cognitive presence and critical thinking in a course. In similar vein, Zhao and Sullivan (2017) examined how the level and nature of teaching presence impacted two online forum discussions from three dimensions: participation and interaction, cognitive presence, and knowledge development through assimilating peer messages. The results indicated that the nature of teaching presence in the study, specified to teacher initiation, roles of teaching presence, and means of making teaching presence, largely shaped the impact of teaching presence on learning. A higher level of teaching presence was observed to be associated with a lower level of student participation, peer interaction, cognitive presence, and learning uptake.

The present study is built from the limited research on the relationship between teaching presence and cognitive presence in blended learning setting with particular interest on examining the interplay between teaching presence and cognitive presence in the online discussion forum of four writing courses conducted through blended learning. This study also extends the discussion to the aspects of teaching presence that promote the cognitive presence. The study focused on the posts put up by the instructors and students in order to analyze the sense of teaching presence and the phases of cognitive presence students engaged in discussion forum. Three research questions were set out to guide the study.

1. What aspects of teaching presence appeared in the online discussion forum of four writing courses?
2. What phases of cognitive presence did students engage in the online discussion forum of four writing courses?
3. What aspects of teaching presence mostly promoted the phases of cognitive presence in the online discussion forum of four writing courses?

### **METHOD**

This research was conducted by using quantitative content analysis techniques. Quantitative content analysis is a process that includes segmenting communication content into units, assigning each unit to a category, and providing tallies for each category (Rourke & Anderson, 2004, p. 5). It was also used to map the intellectual path of the conversation and enables the researcher to make systematic and objective inferences.

### **Setting and Participants**

This study examined the teaching presence and cognitive presence instances expressed by the participants in the discussion forums. This study was undertaken in the four writing courses in a blended learning context in one of the university in Jakarta. The observed online discussion forums were Writing-3 (Meeting 2), Writing-4 (Meeting 2), Writing-4R (Meeting 9), and Writing-4S (Meeting 10). A total of 71 online learners that joined the four discussions participated in this study, 24 learners from Writing-3, 8 learners from Writing-4, 23 learners from Writing-4R, and 16 learners from Writing-4S. There were two instructors that lead the discussion, instructor A led Writing-2 and Writing-4 courses, and instructor B led Writing-4R and Writing-4S.

### **Course Description**

The meeting 2 of Writing-3 course participated by 24 students was performed from March 15th – 17th 2022. The discussion was about introductory paragraph where the students were asked to write the definition of a paragraph, the part of the paragraph and to create a paragraph about one of the given themes (jogging, presidential election, and rock music). Meanwhile, the meeting 2 of Writing-4 course was held from March 16th to 17th, 2022. The discussion was designed to focus on "Introductory Paragraph". Eight students were asked to share his or her knowledge about parts of the introductory paragraph and write an example of introductory paragraph based on the given theme (environment, education, and politic). In these two courses held by instructor A, students were expected to give feedback on their friends' work in the form of opinion, correction, addition, and questions.

Meanwhile, students of the other two courses held by instructor B were not asked to give feedback, yet only to answer the questions. These courses include Writing-4R (meeting 9) conducted on May 11th – 12th, 2022 and Writing-4S (meeting 10) conducted on May, 14th to 18th, 2022. The two discussions were triggered by the task given by the instructor. In Writing-R, students were instructed to share their understanding on the structure of an essay, introductory paragraph and they also asked to make a thesis statement about Social Media. Meanwhile, Writing-4S's students had to write an outline of the essay about Social Media.

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## Data

The data of this study are the instructor and students' posts which have the sense of teaching presence and also the students' posts which will be then categorized to the phases of cognitive presence.

## Data Analysis Procedure

To answer research questions 1 and 2, the data from the participants' posts (the teachers and students' posts) were coded and tabulated into coding scheme based on the teaching presence analysis and cognitive presence analysis adapted from Garrison and Anderson (2003). Then, the researcher established an inter-rater reliability to decide the final data set for further analysis. Research question 3 was addressed by looking carefully at the message (posts) chain from the students as they responded to teachers' prompt questions (trigger).

## Reliability

The quality and consistency of the coder's analysis of the content are critical to ensure reliability (Ng & Murphy, 2005). In this study, inter-rater reliability was established. This is the extent to which different coders, each codes the same data set, come to the same coding decisions to dismiss the possibility of bias (Rourke, Anderson, Garrison, & Archer, 2001, p. 11). The first rater was the researcher himself, and the second rater was the co-author of this paper who was researching under the Community of Inquiry framework. All of the aspects, phases and indicators of teaching presence and cognitive presence have been discussed and understood. The inter-reliability result stood at 81.90%, and it was the amount of the final data used in this study.

## FINDINGS

### What aspects of teaching presence appeared in the online discussion forum of four writing courses?

The purpose of the first research question was to find out the aspects of teaching presence appeared in the four online discussion forums. In general, the role of teaching presence is largely taken by the instructor, but at some points, all participants might demonstrate this form of presence through facilitating discourse and giving direct instruction, because it initially becomes a shared responsibility within the learning community (Garrison et al., 2000). Below are the results of the total posts, and the teaching presence instances and aspects found in the four online discussion forums:

**Table 1. Teaching Presence instances in the four online discussion forums**

Instructor	Course/ Meeting	Total Posts	Teaching Presence Instances		Teaching Presence Aspects					
			Instructors	Students	Instructional Design and Organization		Facilitating Discourse		Direct Instruction	
					N	%	N	%	N	%
A	Writing 3	97	34	18	4	7.7	19	36.5	29	55.8
	Writing 4	44	31	1	2	6.25	12	37.5	18	56.25
B	Writing 4-R	45	21	0	1	4.77	5	23.8	15	71.43
	Writing 4-S	33	15	0	1	6.7	2	13.3	12	80
<b>Total</b>		219	101	19	8	6.6	38	31.7	74	61.7

From the table above, 101 teaching presences were expressed by the instructors and 19 teaching presence expressed by the students from the total 219 posts were found. However, the amount of the teaching presence expressed by either the instructors and the students were different in each course. The highest number of teaching presence expressed by both instructor and students was found in Writing 3 and Writing 4 courses conducted by Instructor A with 52 instances and 32 instances respectively. Meanwhile, the other two courses conducted by Instructor B received the lowest number of teaching presence expressed only by the instructor. Below are the specific aspects and indicators of the teaching presence found in the four online discussion forums:

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**Table 2. Teaching presence aspects and indicators**

Aspects	Indicators	Number of Instances
<b>Instructional design and organization (TP_IDO)</b>	Setting curriculum (TP_IDO1)	4
	Designing methods (TP_IDO2)	2
	Establishing time parameters (TP_IDO3)	-
	Utilizing medium effectivity (TP_IDO4)	-
	Establishing netiquette (TP_IDO5)	2
	Making macro level comments about course content (TP_IDO6)	-
<b>Total</b>		<b>8 (6.6%)</b>
<b>Facilitating Discourse (TP_FD)</b>	Identifying an area of agreement/disagreement (TP_FD1)	-
	Seeking to reach consensus/understanding (TP_FD2)	2
	Encouraging, acknowledging, or reinforcing student contributions (TP_FD3)	29
	Setting climate for learning (TP_FD4)	-
	Drawing in participants, prompting discussion (TP_FD5)	7
	Assessing the efficacy of the process (TP_FD6)	-
<b>Total</b>		<b>38 (31.7%)</b>
<b>Direct Instruction (TP_DI)</b>	Present content/questions (TP_DI1)	15
	Focus the discussion on specific issues (TP_DI2)	2
	Summarise the discussion (TP_DI3)	1
	Confirm understanding through assessment and explanatory feedback (TP_DI4)	52
	Diagnose misconception (TP_DI5)	4
	Inject knowledge from diverse sources, e.g., textbook, articles, Internet, personal experiences (includes pointers to resources) (TP_DI6)	-
	Responding to technical concerns (TP_DI7)	-
<b>Total</b>		<b>74 (61.7%)</b>

According to the table above, all of the three aspects of teaching presence were found in the four online discussion forums. Direct Instruction aspect received the highest percentage (61.7%) with 74 total number of teaching presence. Direct Instruction aspect covers seven indicators, including “confirm understanding through assessment and explanatory feedback”, which most likely to be found in the four online discussion forums. Then, it is followed by Facilitating Discourse aspect (31.7%) with 38 total number of teaching presence in the four online discussion forums. Facilitating Discourse aspect covers six indicators, including “Encouraging, acknowledging or reinforcing student’s contributions” expressed by the participants. The least teaching presence aspect found in the four online discussion forums was Instructional Design and Organization (6.6%) with 8 total number of teaching presence. This aspect was only expressed by the instructor who held the responsibility to manage the online mediated learning.

### What phases of cognitive presence did students engage in the online discussion forum of four writing courses?

The purpose of the second research question is to examine the phases of cognitive presence appeared in the four online discussion forums. Cognitive presence is a purposeful and collaborative process interdependent with social and teaching presence in particular (Garrison, 2017), because the ideal environment for cognitive presence begins when the instructors help students engage with critical thinking and encourage them to develop their own questions and responses (Beck, 2015). Below are the results of the total posts and the cognitive presence found in the four online discussion forums:

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**Table 3. Cognitive Presence instances in the four online discussion forums**

Instructor	Course/ Meeting	Total Posts	Cognitive Presence Instances	Cognitive Presence Phases							
				Triggering Events		Exploration		Integration		Resolution	
				N	%	N	%	N	%	N	%
A	Writing 3	97	42	2	4.77	31	73.80	9	21.43	0	0
	Writing 4	44	25	0	0	17	68	8	32	0	0
B	Writing 4- R	45	23	0	0	23	100	0	0	0	0
	Writing 4- S	33	18	0	0	18	100	0	0	0	0
<b>Total</b>		219	108	2	1.85	89	82.41	17	15.74	0	0

According to the table above, 108 cognitive presences out of the total 219 posts perceived by the students were identified. However, the amount of the cognitive presence perceived by the students were different in each course. The highest number of cognitive presence perceived by the students was found in Writing 3 course and Writing 4 course conducted by instructor A with 42 instances and 25 instances respectively. Meanwhile, the other two courses conducted by Instructor B received the lowest number of cognitive presence perceived by the students. Below are the specific cognitive presence phases and indicators found in four online discussion forums:

**Table 4. Cognitive presence phases and indicators**

Practical Inquiry phases	Indicators	Socio-cognitive processes	Number of Instances
<b>Triggering Event (CP_TE)</b>	Recognize problems (CP_TE1)	Presenting background information that culminates in a question	-
	Sense of puzzlement (CP_TE2)	Asking questions Messages that take the discussion in a new direction.	<b>3</b>
<b>Total</b>			<b>3 (2.78%)</b>
<b>Exploration (CP_EX)</b>	Divergence – within the online community (CP_EX1)	The unsubstantiated contradiction of previous ideas	<b>1</b>
	Divergence – within a single message (CP_EX2)	Many different ideas/themes presented in one message	<b>68</b>
	Information exchange (CP_EX3)	Personal narratives/descriptions/facts (not used as evidence to support a conclusion) Sharing of literature/resources Questions of clarification	<b>13</b>
	Suggestions for consideration (CP_EX4)	The author explicitly characterizes message as exploration, e.g., "Does that seem about right?" "Am I way off the mark?"	<b>6</b>
	Brainstorming (CP_EX5)	Adds to established points but does not systematically defend/justify/develop a situation	-
	Leaps to conclusion (CP_EX6)	Offers unsupported opinions	-
<b>Total</b>			<b>88 (81.48%)</b>
<b>Integration (CP_IN)</b>	Convergence – among group	Reference to the previous message followed by substantiated agreement (e.g., "I agree	<b>5</b>

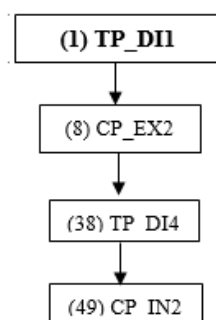
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	members (CP_IN1)	because . . .") Building on, adding to others' ideas	
	Convergence – within a single message (CP_IN2)	Justified, developed, defensible, yet tentative hypotheses	12
	Connecting ideas, synthesis (CP_IN3)	Integrating information from various sources – text book, articles, personal experience	-
	Creating solutions (CP_IN4)	Explicit characterization of a message as a solution by the participant	-
<b>Total</b>			<b>17 (15.74%)</b>
<b>Resolution (CP_RS)</b>	Vicarious or real-world application of solutions/ideas (CP_RS1)	Providing examples of how problems were solved Results of the application	-
	Defending solutions (CP_RS2)	Defending why a problem was solved in a specific manner	-
<b>Total</b>			<b>0</b>

According to the table above, only three phases of cognitive presence occurred in the overall discussion forums. Exploration phase received the highest percentage (82.41%), with 89 total number of cognitive presence. Exploration phase covers six indicators, including “Divergence within a single message” which is the most common indicator occurred in the four online discussion forums. Then, it is followed by Integration phase (15.74%) with 17 total number of cognitive presence identified in the four online discussion forums. This phase covers four indicators, including “Convergence within a single message”, which was most likely to be found in the four online discussion forums. The last cognitive presence phase identified in the four online discussion forums was Triggering Events (1.85%) with only 2 total number of cognitive presence.

### What aspects of teaching presence mostly promoted the phases of cognitive presence in the online discussion forum of four writing courses?

The purpose of the third research question is to determine which aspects of teaching presence mostly promote students' cognitive presence in the four online discussion forums. To understand the association of the teaching presence towards cognitive presence, below are the examples of interaction maps for each online discussion forum:



**Figure 1. Example of interaction map of Writing 3 course**

The figure above illustrated general findings of the third research question. Instructor-initiated topic proposed through main questions in the four online discussion forums, with code (1) indicated the first post, and TP\_DI1 indicated the aspect of teaching presence; Direct Instruction – Present questions/content. As a result of the instructor-initiated topic/question, the students would likely jump to exploration phase (78 instances) because the instructor's main question took the role of triggering events, and when students were already familiar with the topic being discussed (perhaps the topic have been previously discussed in the face-to-face meetings), then it was not necessary for them to propose questions as the sign of recognizing problems.

Moreover, after students explored the main questions proposed by the instructors, the participants –mainly the instructor, would question students' answers and/ give feedback to almost each student's answers. Then, when the students answered and/



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revised their answers, it would be considered as the integration part (7 instances), because they justified and developed their arguments. However, students' behavior in regards to feedbacks given by each instructor were different. In Instructor A's courses, several students successfully moved to integration phase with the guidance of enhanced teaching presence expressed by the participants. However, in Instructor B's courses, all students did not respond to the instructor's feedback; they were stuck in the exploration phase.

### **DISCUSSION**

#### **Aspects of Teaching Presence Appeared in the Online Discussion Forum**

According to the findings of this research, three aspects of teaching presence occurred in over all discussion forums. Similar to Redmond (2011:110) and Hulkko and Janson (2013)'s findings, the most common aspects to appear in the online posts was the direct instruction aspect, followed by facilitating discourse, then instructional design and organization. Meanwhile, another study by Evans et al. (2017) shows that facilitating discourse was the most common aspect to appear, followed by direct instruction, then instructional design and organization. She highlighted that it might be an indication of perceived teaching style within the course context. However, it might also related to the type of tasks given by each instructor. Instructors that become the data source of this study and Redmond (2011)'s study gave a structured task where students were mainly asked to directly answer several questions, and in Hulkko and Janson (2013)'s study, it was a project-based task, where students have to create a product at the end of the lesson. In other words, the instructors were predominantly triggering students with questions to be explored. Meanwhile, in Evans et al. (2017), the instructor gave an issue for students to sense and recognize, then through discussions with their peers, students will finally be able to explore and integrate their ideas.

The direct instruction aspect found in this study mostly showed how participants of generally four online discussion forums mainly confirm understanding through assessment and explanatory feedback (52 instances). The following posts illustrated the example of explanatory feedback posted by the instructors and student:

(Instructor A's explanatory feedback)

Hi Lukman, your paragraph is good. To make it excellent you need to develop some more supporting details of why 'people should use their choice to choose the right one on April 17th' so that the main idea can be more developed.

(Instructor B's explanatory feedback)

Your thesis statement is still not correct. You write the thesis statement in a paragraph; however, it is only one sentence. You need to revise thesis statement.

(Student's explanatory feedback)

I think the topic of the presidential election in your paragraph is still lacking. Because you only explained about general elections in Indonesia, and only one sentence explained about the presidential election. You can still add more sentences about the presidential election and also add concluding sentence in your paragraph

At this point, both of the instructors proposed similar explanatory feedback in regards to students' work. However, students from Writing 3 course held by the Instructor A would likely contribute more rather than students from the other two courses held by Instructor B. There is mainly a reason why the students would like to contribute, in this case; giving explanatory feedback to other students, it was highly related to how the instructor design the methods of the online mediated learning and discussion forum. The following post illustrated the example of designing methods posted by instructor A:

(Instructor A's designing methods)

This discussion will not only be with me but it will be a discussion between me, you, and your classmates. Therefore you are expected to give feedback to each other's answers. Your feedback could be in forms of opinion, addition, correction, and questions. If you answer the question you will get 50 points but if you answer the questions and give your feedback to your classmate's answers you will get 100 points.

It was clearly stated in the Instructor A's designing methods that the students were highly encouraged to give feedbacks to other's answers, and there will be promising rewards from doing that. Meanwhile, it was not stated in Instructor B's opening posts of how the discussion should run. Instructor B was merely setting the curriculum and present questions without prompting any discussions to occur.

Moreover, eventhough both of the instructors were indeed giving explanatory feedbacks, Instructor B did not state the students' name, yet only the feedbacks stated in a row of posts. This was worsen by the online discussion forum that cannot be set in a threaded form, therefore, it was really hard and ineffective to directly understand to whom someone's posts were targetted. As Garrison (2015) said that, teaching presence should be easier to perform with the support of e-learning, because of the existence of a medium to support thoughtful dialogue. However, it became hard to perform here because the medium was failed to support the potential discussions between students-instructor and student-students.

The next most common indicator of the direct instruction aspect found was presenting content or questions (15 instances). The way both of the instructors in presenting content/questions might be similar, but one of them actually have caused

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misunderstanding for students to answer the questions. The following posts illustrate the example of instructor's way of presenting content/questions:

(Instructor A's content/questions)

There are three questions that I will give to you and you should answer all of them completely 1) what is a paragraph? 2) what are the parts of a paragraph? 3) Write a paragraph with one of these topics: a.) Jogging b.) Presidential election c.) Rock music

(Instructor B's content/questions)

After reading the lesson meeting 8 and 9, now answer these questions. 1.)What is the structure of an essay? 2.)What are in the Introductory paragraph? 3.) Write a thesis statement for a topic "Social Media"

At first, both of the instructors post the materials in .doc format, then they present main questions with assumption that students have understood all of the materials. However, perhaps Instructor B made a typo in the second question, but she clearly did not clarify it. Therefore, many students were lost and give the wrong answers. At this point, Instructor B should have re-checked her questions more than stating "you are wrong..." to many students. This is why presenting content/question should be more highlighted by the instructors whether or not it has been clear and understandable. Compared to the Instructor A's question which has been successfully understood by most of the students; when a student made mistakes in giving the answer, the other students would see this as a chance to give more contributions to the discussion forum. The following post illustrated the example of diagnosing misconception done by the student:

(Student's diagnosing misconception)

I'm sorry before ms. Nay, but I think your number 3 answer is more than a paragraph, it's obviously a text about jogging.

Furthermore, students' level of lively contribution perhaps was also influenced by the topic of the discussion. In presenting content/questions, it was notable that Instructor A proposed three topics for students to write about, while Instructor B only proposed one topic. Then, with the help of designing methods, and drawing in participants, prompting discussion, the discussion can be more lively and interactive. The "drawing in participants, prompting discussions" belongs to the facilitating discourse aspect of teaching presence. This was the next common aspect which have the sense of teaching presence. Both instructors and students are able to perceive the facilitating discourse as well as direct instruction aspect, because according to Garrison et al. (2000), those aspects initiate a shared responsibility. Within the facilitating discourse aspect, the participants of generally four online discussion forums mainly encouraging, acknowledging, or reinforcing student contributions (29 instances); drawing in participants, prompting discussion (7 instances); and seeking to reach consensus or understanding (2 instances). The following posts illustrated the examples of the participant's drawing in participants:

(Instructor A's drawing in participants)

I am inviting anyone who can give a critical comment on Nur Inayah's paragraph about Jogging. Anyone who wants a perfect score could give the comments:)

(Student's drawing in participants)

I agree with you rahma, ..... What do you think guys?

With the elaboration above, it is concluded that variety of enhanced teaching presence proposed by the instructor will foster students' contribution and build teaching presence expressed by the students in the online discussion forums.

### Phases of students' cognitive presence appeared in the online discussion forum

From the four online discussion forums, 108 cognitive presence out of 219 posts were found. Similar with most of the previous studies' (Garrison et al., 2001; McKlin et al., 2001; Meyer, 2003; Pawan et al., 2003; Vaughan & Garrison, 2005; Kanuka et al., 2007; Stein et al., 2007; and Redmond, 2011) findings, the exploration phase got the highest amount (82.41%) with total 89 cognitive presence. Students from the four online discussion forums mainly presented different ideas/themes in one message (69 cognitive presence); asking for clarification and providing personal narratives/descriptions/facts (13 cognitive presence); asking for suggestions (6 cognitive presence); and stating unsubstantiated contradiction of previous ideas (1 cognitive presence).

The exploration phase mostly occurred when students were giving answers and responding to the instructor's main questions and content. Specifically in the two courses held by Instructor B, there were no further discussions that will bring up students' phase of cognitive presence higher than exploration. Eventhough explanatory feedbacks from the instructor were provided, and the instructor have already asked them to revise their answers, the problems were still there. Firstly, it was not clear to whom the feedbacks were targetted, because the instructor did not mention the name. Secondly, the instructor did not specify where and when the writings should be revised, meaning that there was no time parameters. Meanwhile, two courses held by Instructor A have more variety of cognitive presence phases because the lecturer were actively guide and encourage the students to be interactive in the discussion forums. As a result, the students were actively asking for clarification, asking for suggestions, and presenting unsubstantiated contradiction of previous ideas as the forms of their contribution:

(Student's asking for clarification)



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Panji, I want to ask you a question. I only know the part of a paragraph are topic sentence, supporting sentences, and concluding sentence. But, in your answer there is the transition sentence. I wanna know, is the transition sentence similar with concluding sentence?

(Student's asking for suggestion/consideration)

Hi miss .... I'm not really sure about it, but I think that is a thesis statement as the part which differentiate an introductory paragraph with other paragraph. Isn't it?

(Student's presenting unsubstantiated contradiction of previous ideas)

Hi Fajriah, the thesis statement is the main idea of your paper that states the purpose and plan of the whole essay. The topic sentence is a sentence that captures the meaning of a paragraph, it starts from each of the papers and explains why the thesis statement is true. There is only one thesis statement. There is one topic sentence for each body paragraph you write.

Furthermore, in the two courses held by Instructor A, integration phase was occurred in the students' posts (15.74%) with total 17 instances. This phase was only perceived by the students from Instructor A's courses, where they justified and developed defensible yet tentative hypotheses (12 instances) and when they were building on, adding to others' ideas (5 instances). This was caused mainly by the lively discussions between students which was resulted from the designing methods done by the instructor. There are two integration indicators occurred; convergence within a single message and convergence among group members.

(Student's reference to the previous message followed by substantiated agreement)

Yeah, I agree with you. Especially now that there is a growing black campaign that is trying to damage the reputation of presidential candidates. And this is our duty as the young generation of Indonesia to oversee the running of the electoral process from the campaign to the running of the government, the simplest way is to echo the clean campaign movement in the surrounding community.

(Student's justified, developed, defensible, yet tentative hypotheses)

It's a bit chaos, I think. Not the candidates, but the supporter, it's not necessary to call "cebong" and "kampret" but most of us did it. So, I think we don't need to call those who are having the different choice with us, with either "cebong" or "kampret" that's all I think about the presidential election mr deava

The convergence among group members post refer to the exploration phase answer by a student, while the convergence within a single message post refer to the triggering events post in an attempt to ask questions and start a discussion. The triggering events phase became the last and the least phase perceived only by the students from Instructor A's class where students ask questions and post messages that take the discussion in a new direction (2 instances). According to Akyol et al. (2009), the explanation for this was highlighted in the blended learning settings which allows students to recognize and be familiar with the topics in the face-to-face meetings, so that they were able to move directly to exploration phase when questions were raised. It was supported by the types of task that the instructor gave to students. In the four online discussion forums, the tasks were merely in a series of questions ready to be answered by the students. Below are illustrated the example of triggering events perceived by a student:

(Student's sense of puzzlement)

what do you think about the condition of the current presidential election in Indonesia?

Once again, it is noteworthy that because the question above did not mention the name of the student, it was perceived as a general question for everyone who was writing a paragraph about presidential election. Two students were responding to the question. It could be very helpful if the discussion was able to be set in a thread form, in case the participants forgot to mention the name. Furthermore, aside from affecting the interactive and lively discussion, topics and types of task chosen by the instructors might cause the resolution phase did not occur at all in the four online discussion forums. However, it is also notable that eventhough all of the four courses have the same amount of participants, the quantity of cognitive presence were only influenced by the number of students who participate by writing a post and/ comments in the discussion forum. In other words, not all of the registered students participate and give contributions in the online discussion forums.

### Aspects of teaching presence that promote students' cognitive presence

From four online discussion forums, 86 out of 108 cognitive presence were promoted by the aspect of teaching presence, that is direct instruction aspect. The direct instruction aspect that promote students' cognitive presence includes presenting content/questions (11 teaching presence) and confirming understanding through assessment and explanatory feedback (4 teaching presence). Four presenting questions of the direct instruction aspect were distributed in an opening post as the main questions in each discussion forum, then resulted into 75 answers which indicated as the divergence within a single message of exploration phase. Meanwhile, the other two presenting questions of the direct instruction aspect resulted into two indicators of exploration phase, they are; information exchange (2 instances) and suggestions for consideration (2 instances). Below are presented the dialogue of how presenting questions of the direct instruction aspect promote information exchange and suggestions for consideration of the exploration phase:

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(Instructor's presenting question)

What about the difference in their functions?

(Student's personal narratives/description)

good morning Ms. Dwi, i think i know the diference between topic sentence and thesis sentence. topis sentence is the main idea of paragrah. i don't really understand about thesis sentence but in the modul i found thesis statement is just like a topic sentece for a paragraph it names the spesific topic and the controlling ideas or major subdivisions of the topic

(Student's suggestion for consideration)

I'm interested to answer this question.. I got a little thing which differentiate between topic sentences with thesis sentences. It may be placed on how spesific the sentences is. I think a thesis sentences is more complex than topic sentences. I only got this thing. Anybody, you may correct me if i'm wrong hehe:D

Moreover, presenting question of the direct instruction aspect have also promoted students' cognitive presence to the integration phase (convergence within a single message)

(Instructor's presenting question)

Hi Fajriah, ....., What main ideas will you write or develop in the body paragraphs of this essay taken from this introductory paragraph?

(Student's justified, developed, defensible yet tentative hypotheses)

The main idea that I want to write is about the rules and laws governing education, because I see the uneven education in Indonesia

Not only presenting questions, confirming understanding through assessment and explanatory feedback have also been the indicator that foster students' cognitive presence to the integration phase. This was indicated by students' revised answers that previously have been given a feedback from either the instructor and/ the other students. Below are presented the dialogue of how confirming understanding through assessment and explanatory feedback has promoted students' answers to be in the integration phase; divergence within a single message.

(Instructor's explanatory feedback)

Thank you for your answer, I would like to give my feedback on number 3: ...

Notes: - jogging: use a capital letter to start a sentence.

- many benefits, namely increased lung capacity. : you mentioned 'many benefits' but named only one 'to increase lung capacity.

- You need to add the concluding sentence in your paragraph

(Student's exploration; divergence within a single message)

ok miss, thank you for your correction. I hope this is the right answer. Jogging has many benefits, namely increasing lung capacity, increasing metabolism and burning fat. Without realizing it or not, when we practice regularly, our physical endurance increases. Another advantage of this sport is increasing our body's metabolic processes. The longer we can survive as long as we run, the more calories and fat our body will burn. In conclusion, jogging is very good for health and our appearance.

(Student's explanatory feedback)

Hi Wina, I think your paragraph is good, but in the line two, I think the sentence should be 'There are so many benefits of jogging for our body'. Because you mentioned the benefits more than one.

(Student's exploration; divergence within a single message)

Ahh my mistake. Thank you Any I will fix it 😊 Jogging is the one of simple sport that everyone can do. There are so many jogging benefits for our body. Jogging is good for our heart, brain development, bone growth and many more. The best time to do it is in the morning before we start our daily activity. We should go jogging to keep our body healthy.

It was rather hard to find students' attempt to revise their answers in both of Instructor A and B's courses, mainly because of the format of the e-learning that does not provide threaded discussion, making it hard for students to follow the discussion. Eventhough it has also been confirmed that the tasks will be discussed more in the face-to-face meeting (in Instructor A's courses), unclear instruction for students to respond to the feedbacks given might be the cause why many students do not respond to the feedbacks. As the designing methods only said that students must answer and give comments to others' answers, students might also think that it was unnecessary to revise their work, eventhough other students have successfully diagnosed the misconception and giving explanatory feedbacks. Below are presented of how this phenomena occurred:

(Student\_NI's answer)

1. paragraph is a group of words put together to form a group that is usually longer than a sentence.

2. the topic sentence, the supporting sentences, the transition sentence

3. jogging

Everyone has the intention to get fit. .... the more you put yourself to it the more you can maximize your full potential. It may somehow take enormous effort and will power but reaping its benefits, both for present and long-term, is priceless.

(Student\_NI's contribution on asking for clarification)

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I wanna ask to you saka bubu what the benefite for the healt body when we are jogging??

(Student's diagnosing misconception toward S\_NI answer)

I'm sorry before ms. Nay, but I think your number 3 answer is more than a paragraph, it's obviously a text about jogging.

(Student's explanatory feedback toward S\_NI answer)

Hii Nay you answer no 3 are too long for a paragraph. I think you can make it more concise than this.

However, the designing methods done by Instructor A brought an indirect yet great impact to the richness of the discussion forums. It was also supported by the quick and precise explanatory feedbacks given to students' answers, so that students will be able to model the way instructor give comments and feedbacks to students' works. Moreover, Instructor A was also actively drawing in participation, prompting discussion which resulted to more interactive and lively discussions between students. This phenomena was not directly related with how cognitive presence was promoted by teaching presence, yet enhanced teaching presence surely contribute to the richness of the discussion between students, and thus students' phases of cognitive presence will be developed. Direct instruction aspect was one of the enhanced teaching presence, that potentially promote students' cognitive presence, however, clear content, questions, and feedbacks, and how it was delivered should always be highlighted to help students move from exploration to the integration and even resolution phase.

### CONCLUSION

To maintain a meaningful and sustainable learning community, three presences; teaching presence, cognitive presence and social presence must be well-reflected in the online mediated learning. However, this study only focused on exploring the teaching presence instances, cognitive presence instances and how they are related in the online discussion forums. General findings indicate that all the aspects of teaching presence appeared in the discussion forum, however, in terms of cognitive presence, students only engaged in the triggering event, exploration, and integration. There was no evidence of students engaged in a resolution in the discussion forum. In addition, direct instruction was found to be the main trigger of students engaged in cognitive presence phases. The main reason why direct instruction received the highest portion of teaching presence was because it related to feedback and questions proposed by the participants. Furthermore, it was also notable that Instructor A had designed the learning to be interactive enough for students to finally be able to reach the exploration and integration phases through student-led discussion.

This study was limited by only analyzing the posts conveyed by the participants in the online discussion forums. It is recommended for the online mediated learning instructors to provide a variety of current topics to start the discussion. Then, instructions, design, content, and instructor-initiated questions should be clear and meaningful to students, so that students will be able to follow the rhythm of the discussion sessions. For future researches, it would be better to use additional instruments, such as interview for both students and instructors to understand better the reasons behind their posts in the online discussion forums. Further research on exploring and examining the relationship between teaching presence and cognitive presence through experimental study was also needed to support the current study, because it is suggested that a strong and active presence on the part of the instructor – one in which the instructor actively guides the discourse – should take place in the early stages for both a sense of student connectedness and learning.

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