

Online tutoring and the Relationship of Inquiry survey

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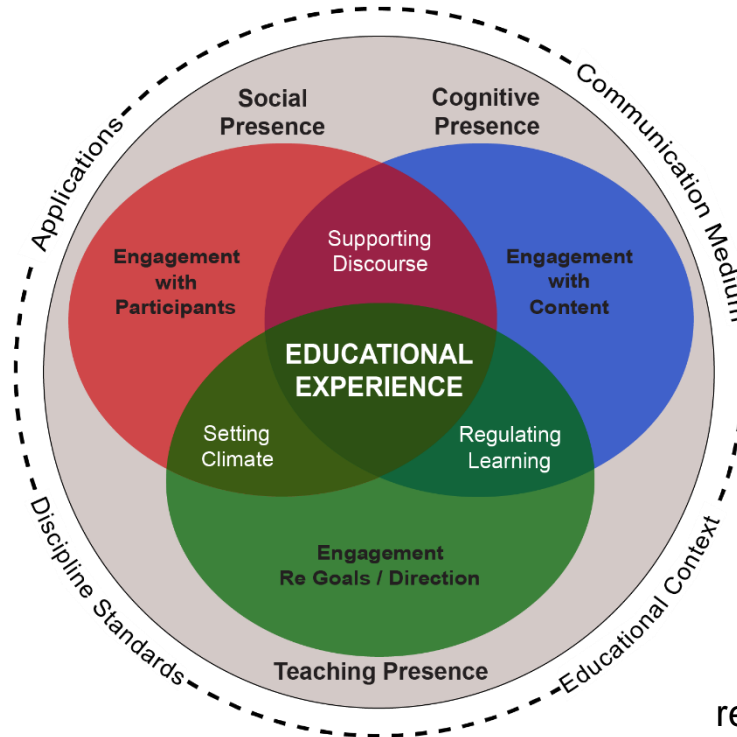
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The Community of Inquiry

Social Presence

The ability of participants in a community of inquiry to project themselves socially and emotionally as 'real' people (i.e., their full personality), through the medium of communication being used.



Cognitive Presence

The extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry.

Teaching Presence

The design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes.



Emotional presence

The expression of emotion, affect, and feeling

Categories

- Activity emotion
- Outcome emotion
- Directed Affectiveness

Cleveland-Innes, M., & Campbell, P. (2012)

Stenbom, S., Cleveland-Innes, M., & Hrastinski, S. (2016)

Time	From	Message
06:12	Student	No... 😞
06:13	Student	1 m (square) = 1000 L
06:15	Coach	And that does that become in our case? 😊
06:15	Student	Is is $0.24 * 100 = 240$?
06:16	Student	Oh, crap
06:16	Student	Mistyped 😞
06:17	Student	It should stand: $0.24 * 1000 = 240L$
06:17	Coach	Correct! 😊
06:17	Student	WHAT?? 😱
06:18	Student	ooh, how nice!
06:18	Student	THANK YOU! 😄
06:18	Student	Wait so the box holds 240L
06:19	Coach	Yes. 😊
06:20	Student	OK!
06:20	Coach	Is there anything else I can help you with?

Relationship of Inquiry

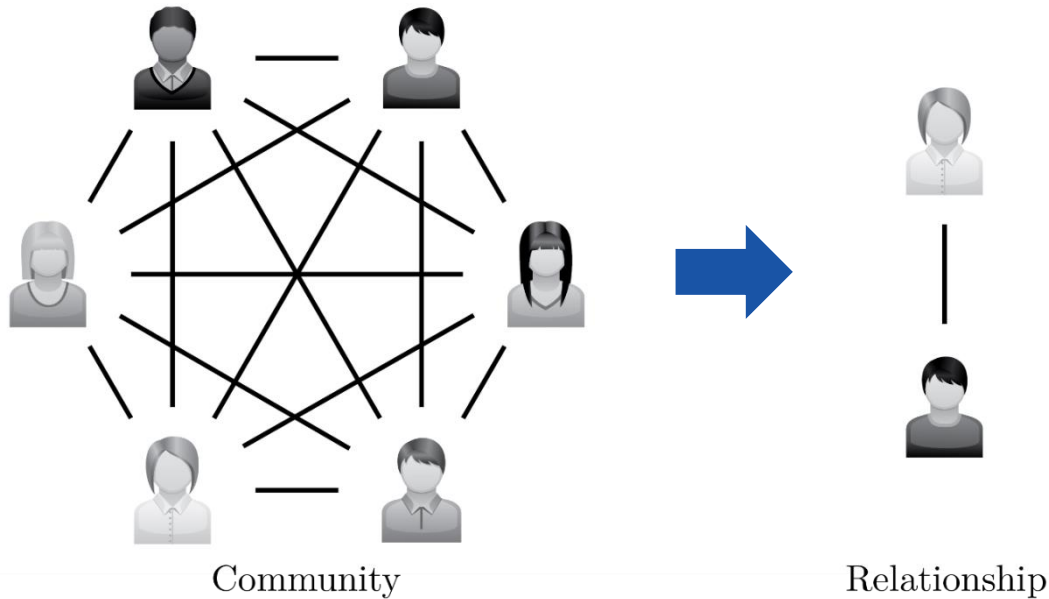



Figure 5: Illustration of a Community and a Relationship.

 Stefan Stenbom, 2015. People icons from WebDesignHot used with permission.



Element	Category
Cognitive presence	Triggering event
	Exploration
	Integration
	Resolution
Teaching presence	Design and organization
	Facilitating discourse
	Direct instruction
Social presence	Open communication
	Relationship cohesion
Emotional presence	Activity emotion
	Outcome emotion
	Directed affectiveness

Appendix A: The Relationship of Inquiry survey items.

Cognitive presence

1. Coaching piques students' curiosity.
2. Students asking for coaching are motivated to explore content related questions.
3. Coaching is shaped around problems posed by the student.
4. Coaches and students use a variety of information sources to explore problems posed.
5. Brainstorming and searching relevant information helps students answer questions.
6. Online discussion is valuable in helping students appreciate different points of view.
7. I provide a learning activity that helps students construct explanations/solutions.
8. Reflection on content and dialogue helps students understand fundamental concepts.
9. Combining new information helps students answer questions raised in coaching discussions.
10. Students can describe ways to test and apply the knowledge provided when being coached online.
11. Students develop solutions to problems that can be applied in practice through online coaching.
12. Students can apply the knowledge gained in coaching to other areas of learning/work.

Teaching presence

13. I clearly communicate important information required to assist the student learn while coaching.
14. I clearly communicate important topics.
15. I clearly communicate important content goals.
16. Students are coached regarding the use of time as it applies to learning.
17. I focus discussion on relevant issues in a way that helps students to learn.
18. I provide feedback in a timely fashion.
19. I provide feedback that helps students understand her/his strengths and weaknesses.
20. I keep students engaged and participating in productive dialogue.
21. I keep students on task in a way that helps students to learn.
22. I guide students toward understanding topics in a way that is helpful to students.
23. I help to identify areas of accuracy and error regarding content understanding that helps students learn.
24. I encourage students to explore new concepts to solve problems.
25. My actions reinforce the development of a working relationship with students.

Social presence

26. Students feel comfortable interacting with coaches online.
27. Students feel comfortable conversing through the online medium.
28. Students feel comfortable sharing her/his need for assistance online.
29. Students feel comfortable disagreeing with coaches while maintaining a sense of trust.
30. Students' point of view is acknowledged during online coaching.
31. Online discussions with coaches helps students develop a sense of collaboration.
32. Getting to know students creates a connection important to the coaching relationship.
33. Students are able to form distinct impressions of the coach and the coach role.
34. Web-based communication is an excellent medium for coaching interaction.

Emotional presence

35. Emotion is expressed by students during coaching.
36. Expressing emotion in relation to math coaching is acceptable.
37. I acknowledged emotion expressed by students during coaching.
38. In my role as coach, I demonstrate emotion online during coaching.
39. I find myself responding emotionally about problems or issues that come up during coaching.

Survey instrument

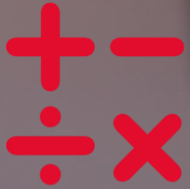
39 survey items

All items corresponds to a category and an element

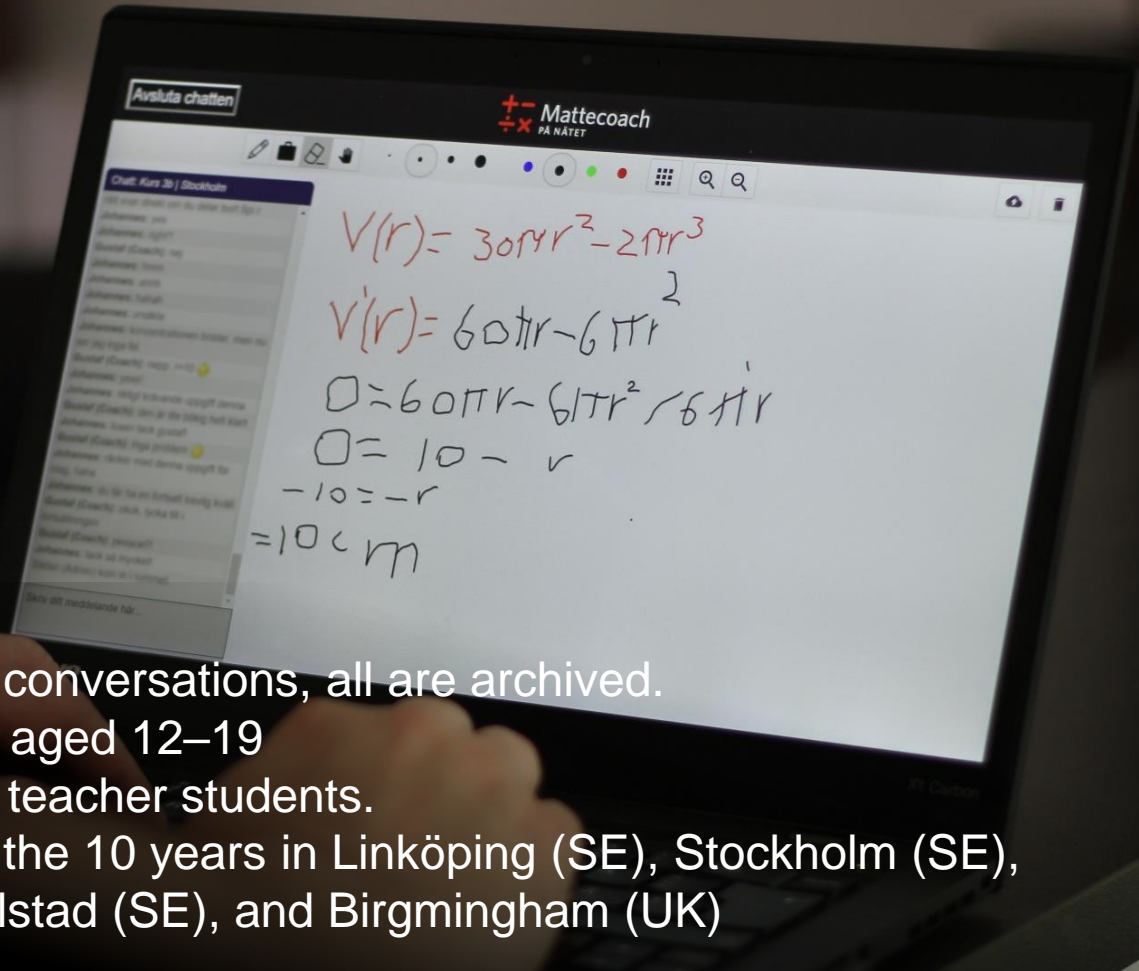


The purpose of this presentation is...

to further explore the Relationship of Inquiry survey using a longitudinal approach.



Mattecoach
PÅ NÄTET



- Started in 2009.
- More than 50 000 conversations, all are archived.
- Students are pupils aged 12–19
- Coaches are Math teacher students.
- Coach hubs during the 10 years in Linköping (SE), Stockholm (SE), Göteborg (SE), Karlstad (SE), and Birmingham (UK)



Research question:

What similarities and changes in the tutor's perception of a Relationship of Inquiry can be identified from 2012 and 2017?

Participants:

Tutors in Math coach

2012: $N = 41$ (100%)

2017: $N = 36$ (78%)

Reliability (w Cronbach's alpha)

Table 3: Reliability of the elements.

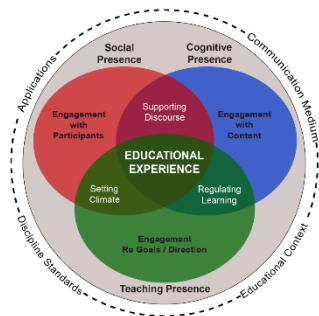
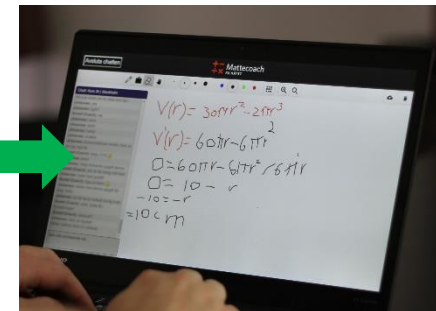
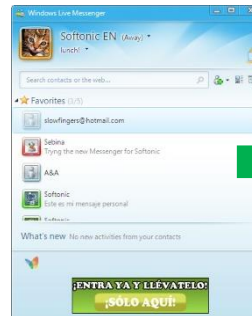
	N_{2012}	α_{2017}	N_{2012}	α_{2017}
Cognitive presence	12	.71	12	.72
Teaching presence	13	.85	13	.82
Social presence	9	.68	9	.76
Emotional presence	6	.74	6	.77

Results (Mean values, Mann-Whitney tests)

Element	Category	M_{2012}	M_{2017}	U	p	r
Cognitive presence	Triggering event	3.75	3.57	5769.5	.11	
	Exploration	3.81	3.45	5076.5	< .01	-.21
	Integration	3.97	3.77	5444	.03	-.14
	Resolution	3.79	3.48	4922.5	< .01	-.19
Teaching presence	Design & Organization	3.76	3.77	10855	.94	
	Facilitating discourse	4.12	4.08	25363	.55	
	Direct instruction	4.09	3.80	5190.5	< .01	-.19
Social presence	Open communication	4.25	4.25	6241.5	.87	
	Relationship cohesion	3.88	3.72	5935.5	.23	
Emotional presence	Expression, acknowledge, support	3.50	3.83	17923	< .01	.16

Two major differences from 2012 to 2017

Change of platform – from Windows Live Messenger, via Lync to an internally developed.



Relationship of Inquiry part of the formal tutor training.



Further readings

Cleveland-Innes, M., & Campbell, P. (2012). Emotional presence, learning, and the online learning environment. *The International Review of Research in Open and Distance Learning*, 13(4), 269–292.

Garrison, D., Anderson, T., & Archer, W. (2000). Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education. *Internet and Higher Education*, 2(2–3), 87–105.

Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of distance education*, 15, 7–23.

Stenbom, S. (2015). *Online coaching as a Relationship of Inquiry: Exploring one-to-one online education*. (Doctoral Thesis), KTH Royal Institute of Technology, Stockholm.

Stenbom, S., Cleveland-Innes, M., & Hrastinski, S. (2016). Emotional presence in a relationship of inquiry: The case of one-to-one online math coaching. *Online Learning*, 20(1).

Stenbom, S., Jansson, M., & Hulkko, A. (2016). Revising the Community of Inquiry framework for the analysis of one-to-one online learning relationships. *The International Review of Research in Open and Distributed Learning*, 17(3), 36-53.



Extra material

Element	Category	Indicators (examples only)	Examples
Cognitive presence	Triggering event	Stating a problem, changing direction.	“Here’s the problem: ...” “I have another issue.”
	Exploration	Brainstorming, broad search for insights, information exchange.	“Perhaps I could use...” “Am I thinking right here?” “What is a square root?”
	Integration	Connecting ideas, computations.	“I can combine ... with ...” “ $7/12 - x = 1/4$ ”
	Resolution	Achieve solution, analysis of solution, implementation.	“The answer is 3!” “I made a mistake with...” “Then the apple is cheaper...”
Teaching presence	Design and organization	Establishing interaction, setting parameters for the inquiry.	“What can I help you with?” “You can type in the textbox or draw on the whiteboard.”
	Facilitating discourse	Stimulating constructive inquiry, assessing process.	“Do you have an idea?” “What answer did you get?”
	Direct instruction	Providing steps to solution, summarizing the discussion.	“You should multiply with 10.” “ $1/3 + 1/4 = 4/12 + 3/12$ ”
Social presence	Open communication	Acknowledging, trivial expressions.	“Okay!”, “Perfect.” “I can’t see the figure.”
	Relationship cohesion	Greetings, vocatives, building links.	“Hello.”, “Good luck.” “What should <i>we</i> do now?”
Emotional presence	Activity emotion	Emotion about the inquiry.	“We solved it!! :-)”
	Outcome emotion	Emotion about the consequence of the inquiry.	“Gah! I have a test on Monday that I will fail if I don’t get this.”
	Directed affectiveness	Emotion towards the other person.	“Thank you for helping me!” “;-)” , “:- (“ , “:-P”



Cognitive presence

Item	M_{2012}	M_{2017}	U	p	r
1. Coaching piques students' curiosity.	3.53	3.39	651.5	.44	
2. Students asking for coaching are motivated to explore content related questions.	3.53	3.14	515	.02	-.27
3. Coaching is shaped around problems posed by the student.	4.20	4.19	719.5	.84	
4. Coaches and students use a variety of information sources to explore problems posed.	3.90	3.31	488.5	.01	-.29
5. Brainstorming and searching relevant information helps students answer questions.	3.98	3.47	489.5	< .01	-.32
6. Online discussion is valuable in helping students appreciate different points of view.	3.56	3.56	716	.81	
7. I provide learning activity that helps students construct explanations/solutions.	3.95	3.69	553.5	.09	
8. Reflection on content and dialogue helps students understand fundamental concepts.	4.00	3.89	677.5	.50	
9. Combining new information helps students answer questions raised in coaching discussions.	3.95	3.74	582.5	.17	
10. Students can describe ways to test and apply the knowledge provided when being coached online.	3.62	3.44	595.5	.42	
11. Students develop solutions to problems that can be applied in practice through online coaching.	3.95	3.50	497.5	.02	-.27
12. Students can apply the knowledge gained in coaching to other areas of learning/work.	3.79	3.50	547	.08	



Teaching presence

Item	M_{2012}	M_{2017}	U	p	r
13. I clearly communicate important information required to assist the student learn while coaching.	4.29	4.06	577	.05	
14. I clearly communicate important topics.	4.05	4.17	652	.42	
15. I clearly communicate important content goals.	3.46	3.63	619	.45	
16. Students are coached regarding the use of time as it applies to learning.	3.18	3.13	551	.61	
17. I focus discussion on relevant issues in a way that helps students to learn.	4.03	4.11	688.5	.72	
18. I provide feedback in a timely fashion.	4.24	3.71	427.5	< .01	-.38
19. I provide feedback that helps students understand her/his strengths and weaknesses.	4.00	3.58	542	.03	-.24
20. I keep students engaged and participating in productive dialogue.	3.93	3.92	723	.86	
21. I keep students on task in a way that helps students to learn.	4.10	4.00	661.5	.62	
22. I guide students toward understanding topics in a way that is helpful to students.	4.53	4.11	460	< .01	-.35
23. I help to identify areas of accuracy and error regarding content understanding that helps students learn.	4.20	4.47	575.5	.10	
24. I encourage students to explore new concepts to solve problems.	4.07	4.14	717.5	.82	
25. My actions reinforce the development of a working relationship with students.	3.88	3.86	730.5	.93	



Social presence

Item	M_{2012}	M_{2017}	U	p	r
26. Students feel comfortable interacting with coaches online.	4.23	4.31	607.5	.28	
27. Students feel comfortable conversing through the online medium.	4.20	4.33	640	.36	
28. Students feel comfortable sharing her/his need for assistance online.	4.31	4.11	624	.27	
29. Students feel comfortable disagreeing with coaches while maintaining a sense of trust.	3.85	3.64	646.5	.53	
30. Students' point of view is acknowledged during online coaching.	3.98	3.81	702.5	.70	
31. Online discussions with coaches helps students develop a sense of collaboration.	3.83	3.72	702	.68	
32. Getting to know students creates a connection important to the coaching relationship.	3.24	3.67	550	.05	.23
33. Students are able to form distinct impressions of the coach and the coach role.	3.80	3.55	553.5	.15	
34. Web-based communication is an excellent medium for coaching interaction.	3.76	3.72	702.5	.70	



Emotional presence

Item	M_{2012}	M_{2017}	U	p	r
35. Emotion is expressed by students during coaching.	4.17	4.08	644.5	.29	
36. Expressing emotion in relation to math coaching is acceptable.	3.75	4.17	542	.05	
37. I acknowledged emotion expressed by students during coaching.	3.73	4.17	541.5	.03	.25
38. In my role as coach, I demonstrate emotion online during coaching.	3.05	3.86	420	< .01	.38
39. I find myself responding emotionally about problems or issues that come up during coaching.	2.78	2.76	678	.83	
35. Emotion is expressed by students during coaching.	4.17	4.08	644.5	.29	
36. Expressing emotion in relation to math coaching is acceptable.	3.75	4.17	542	.05	
37. I acknowledged emotion expressed by students during coaching.	3.73	4.17	541.5	.03	.25
38. In my role as coach, I demonstrate emotion online during coaching.	3.05	3.86	420	< .01	.38