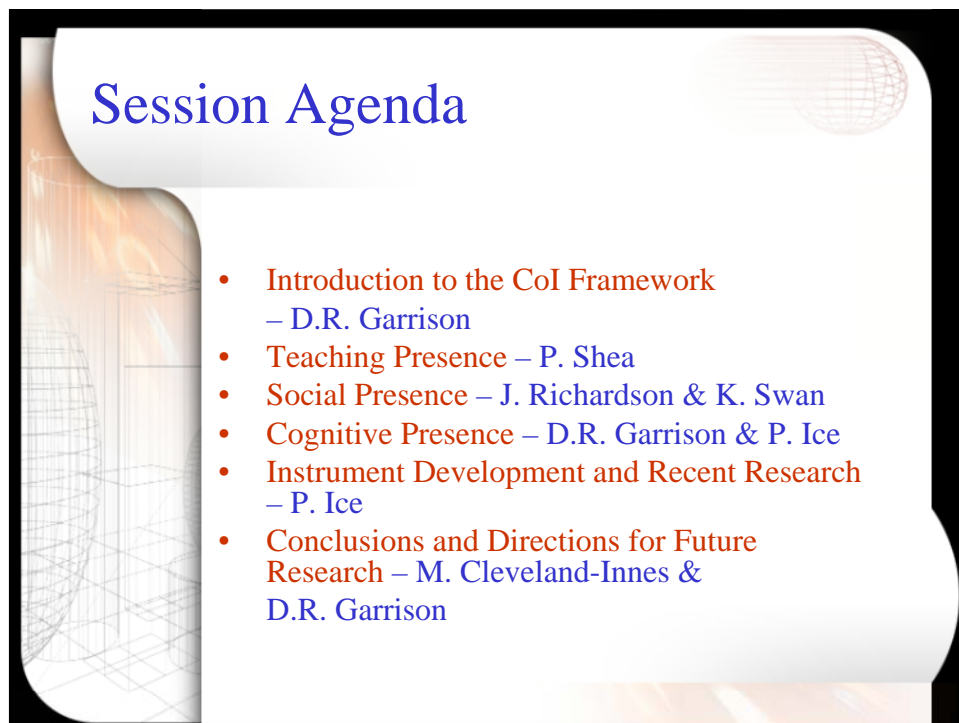


**Community of Inquiry Framework:
Validation & Instrument Development**

**Arbaugh, J.B.
Cleveland-Innes, M.
Diaz, S.
Garrison, D.R.
Ice, P.
Richardson, J
Shea, P.
Swan, K.**

13th Annual Sloan-C Conference

The slide features a background with a wireframe globe and a grid pattern. The title is in a blue, bold font, and the authors' names are listed in a red, bold font. The conference name is at the bottom in a smaller blue font.



Session Agenda

- Introduction to the CoI Framework
– D.R. Garrison
- Teaching Presence – P. Shea
- Social Presence – J. Richardson & K. Swan
- Cognitive Presence – D.R. Garrison & P. Ice
- Instrument Development and Recent Research
– P. Ice
- Conclusions and Directions for Future
Research – M. Cleveland-Innes &
D.R. Garrison

The slide features a background with a wireframe globe and a grid pattern. The title is in a blue, bold font, and the agenda items are listed in a red, bold font. The names of the presenters are in a blue, bold font.

Overview: Community of Inquiry Framework

Dr. Randy Garrison

University of Calgary
Teaching and Learning Centre
<http://tlc.ucalgary.ca>

Community

- ... community means meaningful association, association based on *common interest* and endeavor. The essence of community is *communication*, ...

>> *John Dewey*

University

- The word *university* is derived from the *Latin universitas magistrorum et scholarium*, roughly meaning "community of *masters* and *scholars*".

Inquiry

- Is problem or *question driven*
- Typically has a *small-group* feature
- Includes *critical discourse*
- Is frequently *multi-disciplinary*
- Incorporates *research methods* such as information gathering and synthesis of ideas"

Community of Inquiry

- The importance of a community of inquiry is that, while the objective of critical reflection is *intellectual* autonomy, in reality, critical reflection is “thoroughly *social* and communal”.

>>Lipman, 1991

Community of Inquiry Framework

Social Presence

The ability of participants to identify with the community (e.g., course of study), communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities.

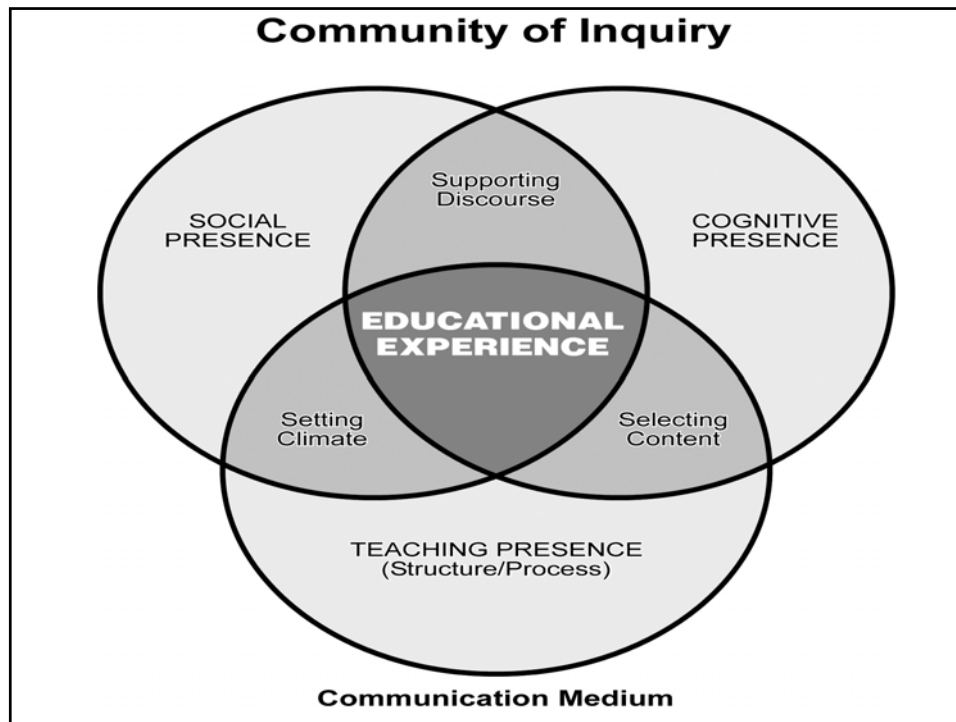


Cognitive Presence

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



ELEMENTS	CATEGORIES	INDICATORS (examples only)
Social Presence	Open Communication Group Cohesion Personal/Affective	Learning climate/risk-free expression Group identity/collaboration Self projection/expressing emotions
Cognitive Presence	Triggering Event Exploration Integration Resolution	Sense of puzzlement Information exchange Connecting ideas Applying new ideas
Teaching Presence	Design & Organization Facilitating Discourse Direct Instruction	Setting curriculum & methods Shaping constructive exchange Focusing and resolving issues

Social Presence

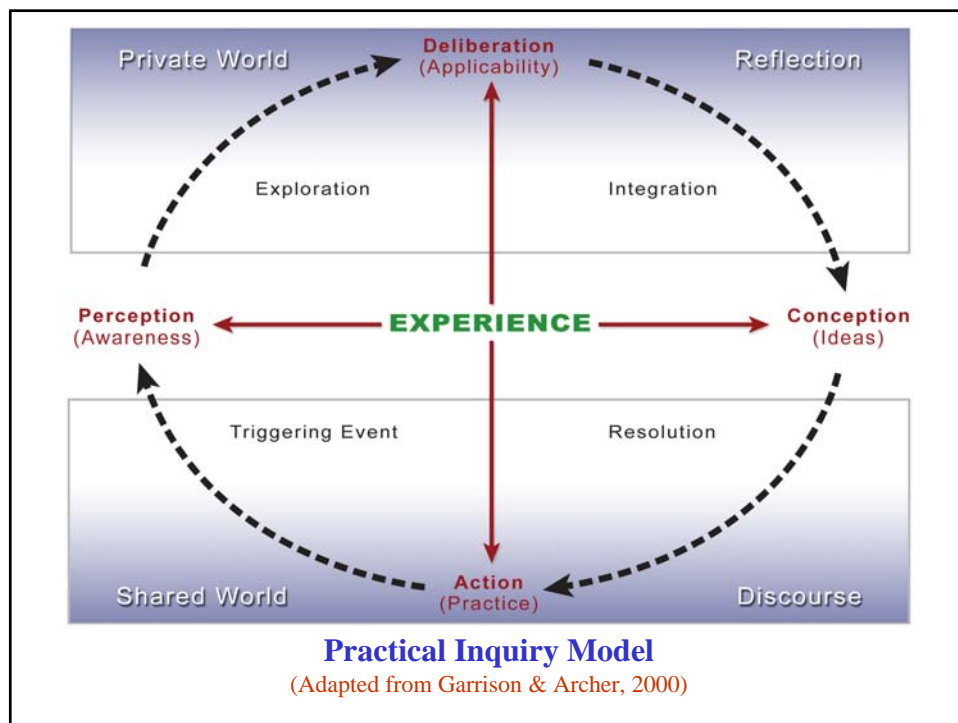
- Social presence is defined here as the ability of participants to project themselves *purposefully and socially* within a community of inquiry.
 - Effect of medium not most salient factor (contrary to Short, et al., 1976)

SP Categories

- Open Communication
- Group Cohesion
- Affective Expression

Cognitive Presence

- Extent to which participants critically *reflect*, (re)construct meaning, and engage in *discourse* for the purpose of sharing meaning and confirming understanding.



Teaching Presence

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

TP Categories

- Design & Organization
- Facilitation
- Direct Instruction

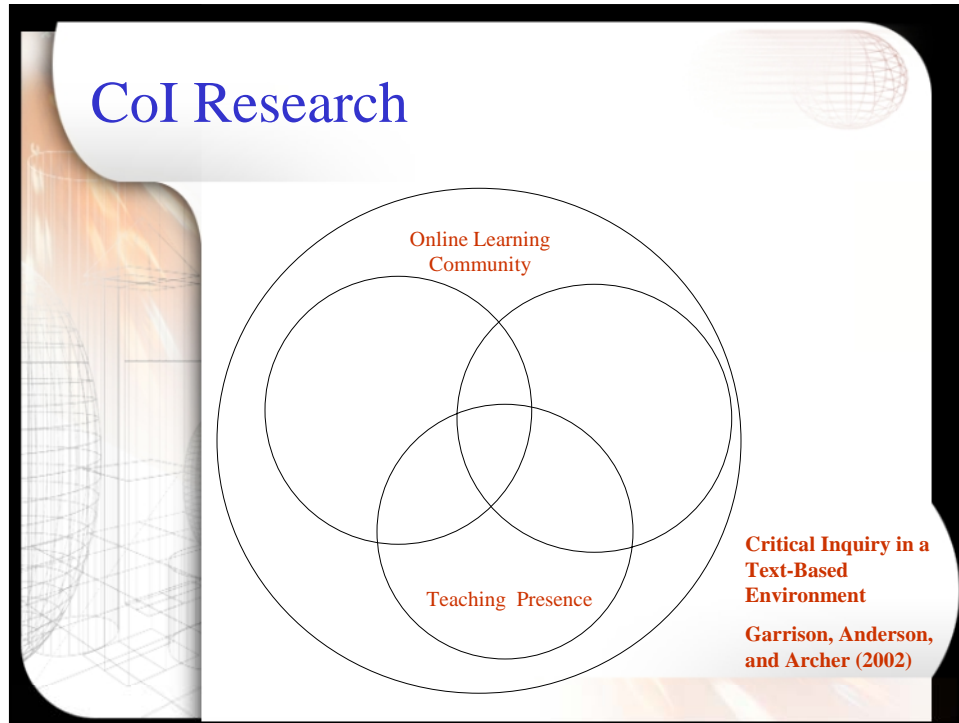
References

- Garrison, D. R. (2007). Online community of inquiry review: Social, cognitive and teaching presence issues. *Journal of Asynchronous Learning Networks*, 11(1), 61-72.
- Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *Internet and Higher Education*, 10(3), 157-172.

Teaching Presence

Dr. Peter Shea

**University at Albany, State
University of New York**



- ## Instructional Design and Organization
- **Setting the Curriculum**
 - **Designing Methods**
 - **Establishing Time Parameters**
 - **Utilizing the Medium Effectively**
 - **Establishing Netiquette**

Facilitating Discourse

- Identifying areas of agreement and disagreement
- Seeking to reach consensus/understanding
- Encouraging, acknowledging, and reinforcing student contributions
- Setting climate for learning
- Drawing in participants, prompting discussion
- Assessing the efficacy of the process

Direct Instruction

- Presenting content and questions
- Focusing the discussion
- Summarizing the discussion
- Confirming understanding
- Diagnosing misperceptions
- Injecting knowledge from diverse sources
- Responding to technical concerns

Items: Design & Organization

1. The instructor clearly communicated important course topics.
2. The instructor clearly communicated important course goals.
3. The instructor provided clear instructions on how to participate in course learning activities.
4. The instructor clearly communicated important due dates/time frames for learning activities.

Items: Facilitation

5. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.
6. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.
7. The instructor helped to keep course participants engaged and participating in productive dialogue.

Items: Facilitation

8. The instructor helped keep the course participants on task in a way that helped me to learn.
9. The instructor encouraged course participants to explore new concepts in this course.
10. Instructor actions reinforced the development of a sense of community among course participants.

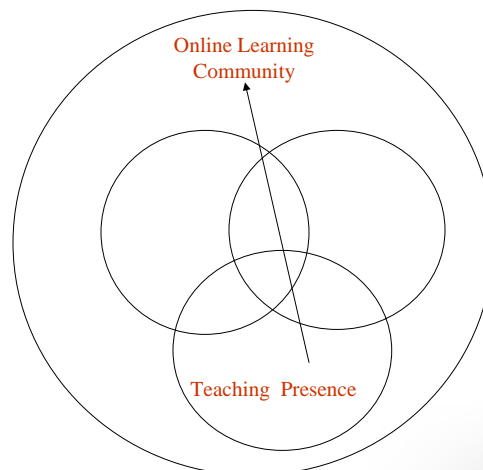
Items: Direct Instruction

11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.
12. The instructor provided feedback that helped me understand my strengths and weaknesses.
13. The instructor provided feedback in a timely fashion.

Research on Teaching Presence

- Shea, P. and Li, C. S. (2006). A comparative study of “teaching presence” and student sense of learning community in online and classroom environments. *The Internet and Higher Education*, 9 (3), 175-191.
- Shea, P., Pickett, A., Pelz, W. (2003). A follow-up investigation of teaching presence in the SUNY Learning Network. *Journal of Asynchronous Learning Networks*: 7 (2), 61-80.
- Shea, P., Swan, K. & Pickett, A. (2005). Teaching presence and establishment of community in online learning environments, in J. Moore (ed.), *Elements of Quality Online Education: Engaging Communities, Wisdom from the Sloan Consortium, Volume 2 in the Wisdom Series*. Needham, MA: Sloan-C, 2005. (ISBN 0-9766714-1-7)
- Shea, P., Fredericksen, E., Pickett, A., and Pelz, W. (2003). A Preliminary Investigation of Teaching Presence in the SUNY Learning Network, in *Quality Studies: Online Education Practice and Direction, Vol (4)*. Needham, MA: Sloan-C. (ISBN 0-9677741-5-2)

CoI Research



**Critical Inquiry in a
Text-Based
Environment**

**Garrison, Anderson,
and Archer (2002)**

Research: Teaching Presence and Online Learning Community

- A way to assess learning community is via research instruments such as Rovai's Student Sense of Community Index (SSCI)
- 20 item survey with tested validity and reliability measures.

Results of Research

- Summer and Fall SLN 2004 surveys
- 3500+ respondents
- Scores for SSCI subscales and total score
- Relationships: Learning Community and Teaching Presence
- Results – strong relationship...
- Questions: which are most important?
- How can we improve Learning Community?

SSCI

- Student Sense of Community Index (SSCI)
- Two scales:
 - Learning 0-40 points
 - Connectedness 0-40 points
 - Maximum score 80 points

Results on SSCI

- The average score for the 2314 respondents to the summer 2004 survey was:
 - Connectedness 24.13
 - Learning 29.22
 - Learning Community Avg. 53.35

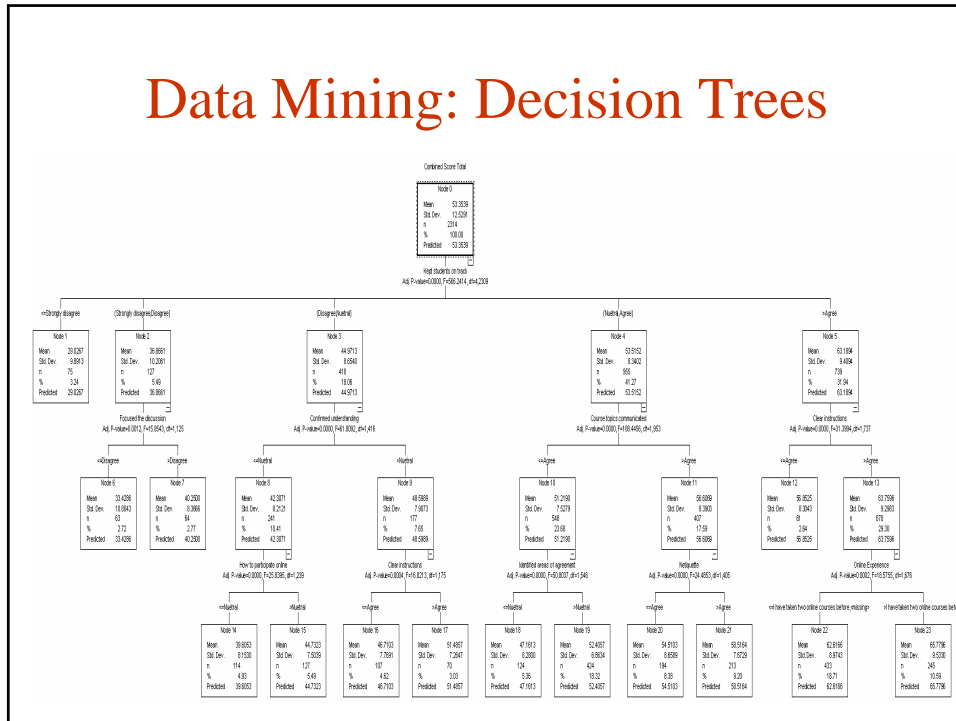
Relationships

- Assessing the relationship between teaching presence and community:
 - Correlation
 - Data Mining – Decision Trees
- The stronger the correlation the more important the component...both methods point to the same components...

Correlations with Composite Learning Community Ratings

Instructor:	R
Kept students on task	.703
Sought to reach consensus	.684
Drew in participants	.673
Focused the discussion	.669
Presented content/questions	.669

Data Mining: Decision Trees

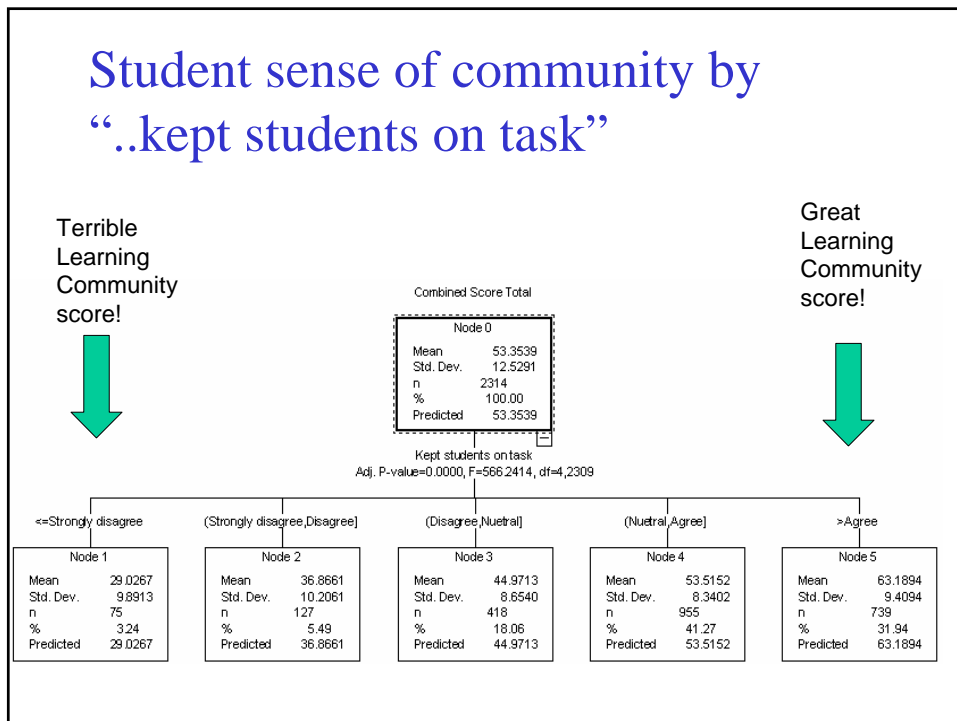


Teaching Presence and Learning Community: Connections

- Strongest association between Teaching Presence and Learning Community appears at the top of the decision tree...

Facilitation of Discourse

“Overall the instructor for this course helped keep students on task in a way that assisted me to learn”



Lesson: Keep students on task

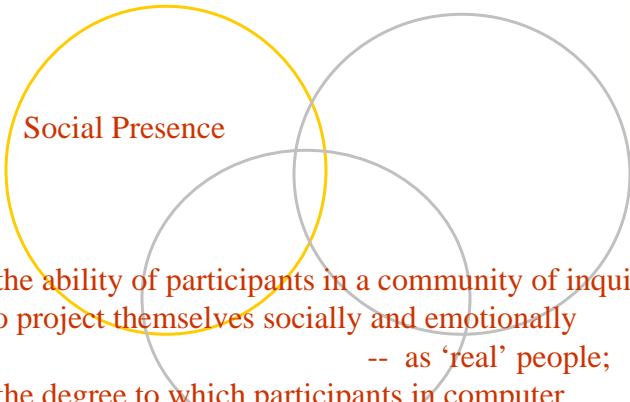
- To improve learning community instructors should actively keep students on task in their online courses.
- Strategies: regular check in, follow discussion closely, post suggestions when students are off topic, provide timely feedback, do discussion ratings, tell students “how they are doing”. Others?
- Focus LMS improvements on streamlining this role for instructors

Social Presence

Dr. Jennifer Richardson
Purdue University

Dr. Karen Swan
Kent State University


Social Presence



Social Presence

- the ability of participants in a community of inquiry to project themselves socially and emotionally -- as 'real' people;
- the degree to which participants in computer mediated communication feel socially and emotionally connected

Social Presence

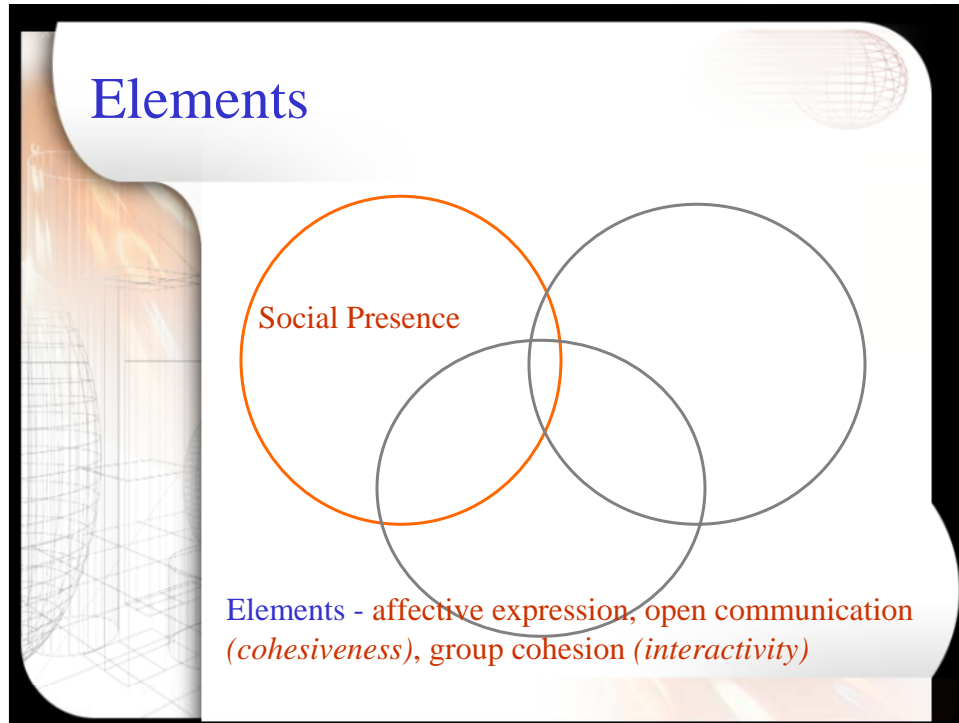


Social Presence

©Cartoonbank.com

Stew

"On the Internet, nobody knows you're a dog."



- ## Research Findings
- **Social presence can be (strongly) felt by participants in computer-mediated communication**
(Walther, 1994; Gunawardena, 1995; Tu & McIsaac, 2002; Richardson & Swan, 2003)
 - **And projected into text-based asynchronous discussion using verbal immediacy indicators alone**
(Rourke, Anderson, Garrison & Archer, 2001; Swan, 2002; 2003)

Research Findings

- Differences in effects of social presence of instructors & peers
(Swan & Shih, 2005)
- And interesting differences among student perceptions
(Swan & Shih, 2005)
- Relationship of social presence to course design factors – social context, communication, interactivity
(Tu, 2000; Tu & McIssac, 2002; Swan & Shih, 2005)

Affective Expression

14. Getting to know other course participants gave me a sense of belonging in the course.
15. I was able to form distinct impressions of some course participants
16. Online or web-based communication is an excellent medium for social interaction.

Open Communication

17. I felt comfortable conversing through the online medium.
18. I felt comfortable participating in the course discussions.
19. I felt comfortable interacting with other course participants.

Group Cohesion

20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.
21. I felt that my point of view was acknowledged by other course participants.
22. Online discussions help me to develop a sense of collaboration.

Cognitive Presence

Dr. Phil Ice
University of North Carolina
Charlotte

Dr. Randy Garrison
University of Calgary

Foundations

- Cognitive presence is defined as the exploration, construction, resolution and confirmation of understanding through collaboration and reflection in a community of inquiry.
(Garrison, 2007)

Theoretical Basis

- Reflective thinking
(Dewey, 1933)
- Transitioning authentic, problem-posing, post-modernist paradigm
(Freire, 1970)
- Knowledge is a product of:
 - Learners discovering the truth
 - Examination of facts related to the truth
 - Assimilation of the aforementioned through collaborative review
(Green, 1971)

Theoretical Basis

- Dependent upon a curriculum grounded in richness, recursion, relations and rigor
(Doll, 1993)
- Learners achieve resolution through iteration and conversation
(Doll, Fleener, Trueit & St. Julien, 2005)

Syntax

- Derivative of strategies within collaborative, cooperative and inductive learning models found in the face-to-face classroom
(Slavin, 1994; Johnson & Johnson, 1998; Gagne, Wager, Golas & Keller, 2004; Joyce, Weil & Calhoun, 2004)
- Dependent upon the instructor being able to effectively initiate and contain a learning spiral
(Palmer, 1993)

Triggering Event

23. Problems posed increased my interest in course issues.
24. Course activities piqued my curiosity.
25. I felt motivated to explore content related questions.

Exploration

26. I utilized a variety of information sources to explore problems posed in this course.
27. Brainstorming and finding relevant information helped me resolve content related questions.
28. Online discussions were valuable in helping me appreciate different perspectives.

Integration

29. Combining new information helped me answer questions raised in course activities.
30. Learning activities helped me construct explanations/solutions.
31. Reflection on course content and discussions helped me understand fundamental concepts in this class.

Resolution

32. I can describe ways to test and apply the knowledge created in this course.
33. I have developed solutions to course problems that can be applied in practice.
34. I can apply the knowledge created in this course to my work or other non-class related activities.

Difficulty for the Instructor

- Allowing cognitive presence to fully develop can be frustrating
 - Unlike objectivist models of instruction it is not possible to prescribe a point at which learners will produce “answers”
 - Requires “soft” scaffolding



Instrument Development and Recent Research

Dr. Phil Ice
University of North Carolina
Charlotte



Instrument Development

- Work on the development of a unified Community of Inquiry Survey instrument began in December 2006
- Review of previous research and commonality of items

Instrument Development

- Common survey items agreed upon where existing items were in worded differently
- New items developed where needed

Instrument Development

- Beta testing of common instrument in Spring 2006
- Data analysis reviewed, select items revised and new items added

Data Collection

- Summer 2007
- Data collected across a spectrum of courses at four institutions in the United States and Canada
- Items randomized

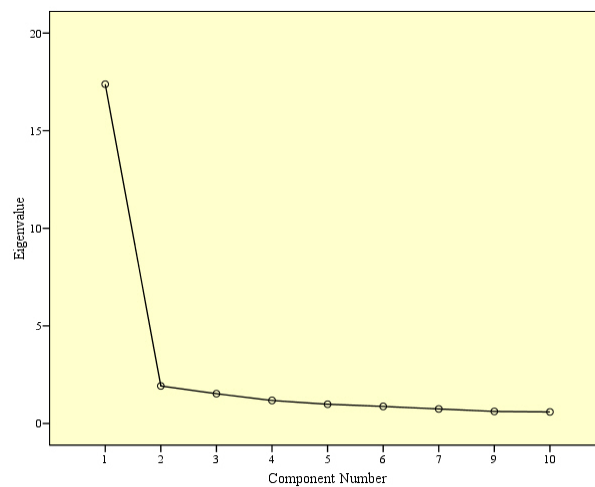
Confirmatory Factor Analysis

- $n = 287$
 - Adequate per Guadagnoli & Velicer (1988), who suggested absolute minimum (100-200) is more effective way to establish minimally adequate sample size.
 - Others argue subject/item ratio more important factor. Here, the adequacy of (ratio=8.44) is mixed per recommendations in literature.

Confirmatory Factor Analysis

- Principal Component
- Oblique rotation utilized (which, in contrast to Orthogonal, does NOT assume factors are uncorrelated to one another).
- SPSS version 15

Scree Plot



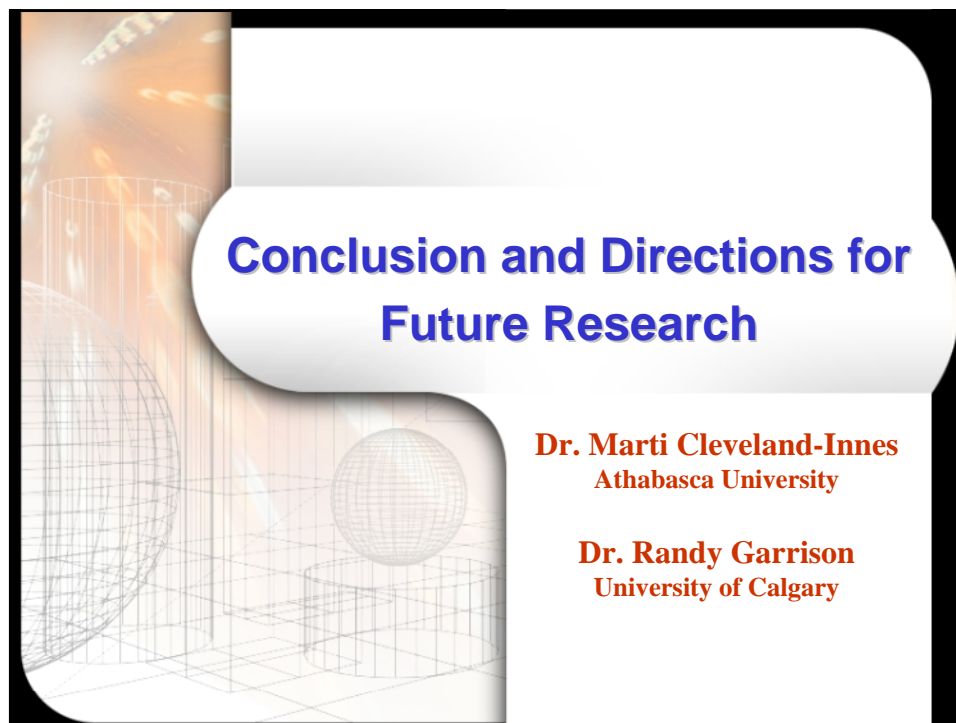
TEACHING PRESENCE

	1	2	3
1. The instructor clearly communicated important course topics.	0.826	0.088	0.067
2. The instructor clearly communicated important course goals.	0.877	-0.021	0.046
3. The instructor provided clear instructions on how to participate in course learning activities.	0.592	0.246	-0.035
4. The instructor clearly communicated important due dates/time frames for learning activities.	0.611	0.078	0.040
5. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	0.579	0.162	-0.138
6. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	0.575	0.091	-0.281
7. The instructor helped to keep course participants engaged and participating in productive dialogue.	0.633	0.149	-0.160
8. The instructor helped keep the course participants on task in a way that helped me to learn.	0.579	0.042	-0.285
9. The instructor encouraged course participants to explore new concepts in this course.	0.523	0.099	-0.233
10. Instructor actions reinforced the development of a sense of community among course participants.	0.569	0.174	-0.176
11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	0.425	0.146	-0.374
12. The instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.	0.649	-0.123	-0.201
13. The instructor provided feedback in a timely fashion.	0.513	-0.025	-0.103

SOCIAL PRESENCE

	1	2	3
16. Online or web-based communication is an excellent medium for social interaction.	0.050	0.619	-0.233
17. I felt comfortable conversing through the online medium.	0.172	0.473	0.013
18. I felt comfortable participating in the course discussions.	-0.181	0.674	-0.226
19. I felt comfortable interacting with other course participants.	0.286	0.701	0.038
20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	0.103	0.620	-0.034
21. I felt that my point of view was acknowledged by other course participants.	0.319	0.556	0.025
22. Online discussions help me to develop a sense of collaboration.	0.047	0.561	-0.340

	1	2	3
23. Problems posed increased my interest in course issues.	-0.099	0.172	-0.785
24. Course activities piqued my curiosity.	0.064	0.070	-0.712
25. I felt motivated to explore content related questions.	0.082	-0.031	-0.770
26. I utilized a variety of information sources to explore problems posed in this course.	0.078	-0.158	-0.759
27. Brainstorming and finding relevant information helped me resolve content related questions.	-0.106	0.130	-0.794
28. Online discussions were valuable in helping me appreciate different perspectives.	-0.096	0.286	-0.699
29. Combining new information helped me answer questions raised in course activities.	0.101	0.043	-0.716
30. Learning activities helped me construct explanations/solutions.	0.128	0.030	-0.732
31. Reflection on course content and discussions helped me understand fundamental concepts in this class.	0.008	0.237	-0.640
32. I can describe ways to test and apply the knowledge created in this course.	0.239	-0.097	-0.619
33. I have developed solutions to course problems that can be applied in practice.	0.147	0.026	-0.653
34. I can apply the knowledge created in this course to my work or other non-class related activities.	0.171	-0.041	-0.687



**Conclusion and Directions for
Future Research**

Dr. Marti Cleveland-Innes
Athabasca University

Dr. Randy Garrison
University of Calgary

How Essential?

- The body of *evidence is growing* rapidly attesting to the importance of teaching presence for successful online learning ...
- The consensus is that teaching presence is a *significant determinate* of student satisfaction, perceived learning, and sense of community.

Next Steps

- How does online learning *community* develop through the three presences? (i.e. community if necessary, but not necessarily community?)
- How do the relationships between presences support online and blended communities of inquiry?
- How do we move CP past the exploration phase?
- Which aspects of TP are most critical?
- Is SP a required precursor to cognitive presence?

Agenda

- Brief introduction of CoI framework
M. Cleveland-Innes
- Issues and next steps with the development of
the CoI framework
D.R. Garrison
- The place of emotional presence
M. Cleveland-Innes
- Socially rich technologies and the CoI
P. Ice
- Learner characteristics and perceptions of
social presence
K. Swan
- New research directions: An investigation of
the CoI framework and the "Net Generation"
P. Shea

Contact Information

- Ben Arbaugh arbaugh@uwosh.edu
- Marti Cleveland-Innes martic@athabascau.ca
- Sebastian Diaz sebastian.diaz@mail.wvu.edu
- Randy Garrison garrison@ucalgary.ca
- Phil Ice pice@uncc.edu
- Jennifer Richardson jennrich@purdue.edu
- Peter Shea pshea@uamail.albany.edu
- Karen Swan kswan@kent.edu