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

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

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### Teaching Presence

Dr. Peter Shea

University at Albany  
State University of New York
Teaching Presence

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

+ Instructional Design and Organization
+ Facilitation of Discourse
+ Direct Instruction

Teaching Presence Research

- The nascent literature indicates that the construct coheres as an interpretable factor, i.e. we can operationalize and “measure” it (Shea et al. 2006; Arbaugh and Wang, 2006)
- Instructor teaching presence is predictive of online learners’ sense of community (Shea et al., 2005; Wilson, Ludwig-Hardman, Thornam, Dunlap, 2004),
- and student satisfaction, and perceived learning (Shea et al. 2005; 2006).
but, student reports of satisfaction and learning are more highly correlated with the teaching presence skills and behaviors of faculty rather than classmates (Shea et al. 2004; 2005) and instructors who receive Teaching Presence Training score significantly higher on indicators of TP and on measures of student satisfaction and learning in general. (Shea, 2003)

These results are important given appropriate levels of teaching presence supports cognitive presence, a multivariate indicator of learning evident in online discourse, regardless of whether the discourse was

- text-based synchronous (Stein et al., 2007),
- text-based asynchronous (Vaughan and Garrison, 2005)
- asynchronous with audio feedback (Ice et al., 2007).
Social Presence

Dr. Karen Swan
Kent State University

“social presence”

“On the Internet, nobody knows you're a dog.”
“teacher immediacy”

LEARNING MODEL
- IMMEDIACY
  - COGNITIVE LEARNING
    - (Kelley & Gorham, 1988; Gorham, 1988)
  - AFFECTIVE LEARNING
    - (Plax & Wendt-Wasco, 1985; Richmond, Gorham & McCroskey, 1987; Gorham, 1988)

MOTIVATION MODEL
- IMMEDIACY
  - STATE
    - MOTIVATION
      - (Christophel, 1990; Richmond, 1990; Frymeir, 1994)
  - COGNITIVE LEARNING
    - AFFECTIVE LEARNING

AFFECTIVE LEARNING MODEL
- IMMEDIACY
  - AFFECTIVE LEARNING
    - COGNITIVE LEARNING
      - (Rodriguez, Plax & Kearney, 1996)

social presence theory
social presence as media richness; ability of a medium to present individuals as individuals
(Short, Williams & Christie, 1976)

social presence in practice
two studies examining CMC participants’ perceptions of social presence -- “participants create social presence by projecting their identities and building online communities”
(Gunawardena, 1995; Gunawardena & Zittle, 1997)
“social presence”

- the degree to which participants in computer mediated communication feel socially and emotionally connected
- the ability of participants in a community of inquiry to project themselves socially and emotionally -- as ‘real’ people;
- affective expression, open communication (cohesiveness), group cohesion (interactivity)

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)
perceptions of social presence are linked to student satisfaction in online courses (Gunawardena, Lowe & Anderson, 1997; Tu, 2002; Richardson & Swan, 2003)
and to perceived and actual learning from them (Walther, 1994; Gunawardena, 1995; Picciano, 2002; Richardson & Swan, 2003)
interesting differences among student perceptions (Swan & Shih, 2005)

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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 & McIsaac, 2002; Swan & Shih, 2005)
Is social presence mediated differently by new and emerging technologies? Is there a media richness effect?

What is the relationship of social presence to the other presences? Is social presence a necessary precursor to cognitive presence? Is some part of teaching presence really the social presence of the teacher?

Is “emotional presence” distinct from social presence?

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Cognitive Presence

**Dr. Randy Garrison**  
University of Calgary

**Dr. Phil Ice**  
University of North Carolina Charlotte
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)

Practical Inquiry Model

(Adapted from Garrison & Archer, 2000)
Theoretical Basis

- Reflective thinking
  (Dewey, 1933)

- Transitioning to an 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 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)

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

December 2006 - Development of a unified Community of Inquiry Survey instrument

- Review of previous research and commonality of items
- Common survey items agreed upon where existing items were worded differently; New items developed where needed
**Instrument Development**

**Spring 2007** - Beta testing of common instrument

- Factor analysis reviewed, select items revised and new items added

**Summer 2007** - Data collected across spectrum of courses at 4 institutions in the USA and Canada

- Items randomized to reduce order-related biases

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**Confirmatory Factor Analysis**

- \( n = 287 \)

- Principal Component Procedure

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

- SPSS version 15 utilized
### TEACHING PRESENCE

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

### SOCIAL PRESENCE

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Getting to know other course participants gave me a sense of belonging in the course.</td>
<td>0.050</td>
<td>0.619</td>
<td>-0.233</td>
</tr>
<tr>
<td>15. I was able to form distinct impressions of some course participants.</td>
<td>0.172</td>
<td>0.473</td>
<td>0.013</td>
</tr>
<tr>
<td>16. Online or web-based communication is an excellent medium for social interaction.</td>
<td>-0.181</td>
<td>0.674</td>
<td>-0.226</td>
</tr>
<tr>
<td>17. I felt comfortable conversing through the online medium.</td>
<td>-0.039</td>
<td>0.814</td>
<td>0.015</td>
</tr>
<tr>
<td>18. I felt comfortable participating in the course discussions.</td>
<td>0.109</td>
<td>0.788</td>
<td>0.005</td>
</tr>
<tr>
<td>19. I felt comfortable interacting with other course participants.</td>
<td>0.286</td>
<td>0.701</td>
<td>0.038</td>
</tr>
<tr>
<td>20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.</td>
<td>0.103</td>
<td>0.620</td>
<td>-0.034</td>
</tr>
<tr>
<td>21. I felt that my point of view was acknowledged by other course participants.</td>
<td>0.319</td>
<td>0.556</td>
<td>0.025</td>
</tr>
<tr>
<td>22. Online discussions help me to develop a sense of collaboration.</td>
<td>0.047</td>
<td>0.561</td>
<td>-0.340</td>
</tr>
</tbody>
</table>
### COGNITIVE PRESENCE

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

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**Moving Forward**

Dr. Peter Shea

University at Albany
State University of New York
Other New Col Research

- CoI instrument coheres into factors
- Confirmed this with additional 2159 online students in SUNY
- Used TP & SP factors as predictors of CP
- Conducted Structural Equation Modeling to see relationships
- Conducted CHAID Analysis to highlight item level predictors of CP (and for instrument redevelopment)

### Factor Analysis (n=2159)

Table 1: Results from principal axis factoring with Oblimin rotations (n=2159)

<table>
<thead>
<tr>
<th>Item</th>
<th>Cognitive Presence</th>
<th>Teaching Presence</th>
<th>Social Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The instructor clearly communicated important course topics.</td>
<td>-0.07</td>
<td>-0.88</td>
<td>0.01</td>
</tr>
<tr>
<td>2. The instructor clearly communicated important course goals.</td>
<td>0.00</td>
<td>-0.94</td>
<td>0.00</td>
</tr>
<tr>
<td>3. The instructor provided clear instructions on how to participate in course learning activities.</td>
<td>0.00</td>
<td>-0.92</td>
<td>0.00</td>
</tr>
<tr>
<td>4. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.</td>
<td>0.00</td>
<td>-0.96</td>
<td>0.00</td>
</tr>
<tr>
<td>5. The instructor helped keep the course participants engaged and participating in productive discussion.</td>
<td>0.00</td>
<td>-0.94</td>
<td>0.00</td>
</tr>
<tr>
<td>6. The instructor encouraged course participants to explore new concepts in the course.</td>
<td>0.00</td>
<td>0.84</td>
<td>0.00</td>
</tr>
<tr>
<td>7. Instructor actions contributed to the development of a sense of community among course participants.</td>
<td>0.00</td>
<td>-0.85</td>
<td>0.00</td>
</tr>
<tr>
<td>8. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.</td>
<td>0.00</td>
<td>-0.87</td>
<td>0.00</td>
</tr>
<tr>
<td>9. The instructor provided feedback that helped me understand my strengths and weaknesses.</td>
<td>0.00</td>
<td>-0.86</td>
<td>0.00</td>
</tr>
<tr>
<td>10. Getting to know other course participants gave me a sense of belonging in the course.</td>
<td>0.00</td>
<td>-0.86</td>
<td>0.00</td>
</tr>
<tr>
<td>11. It was easy to form distinct impressions of other course participants.</td>
<td>0.00</td>
<td>-0.87</td>
<td>0.00</td>
</tr>
<tr>
<td>12. Online or web-based communication is an excellent medium for social interaction.</td>
<td>0.00</td>
<td>-0.88</td>
<td>0.00</td>
</tr>
<tr>
<td>13. Online or web-based communication is an excellent medium for social interaction.</td>
<td>0.00</td>
<td>-0.88</td>
<td>0.00</td>
</tr>
<tr>
<td>14. Problems posed increased my interest in course issues.</td>
<td>0.00</td>
<td>-0.89</td>
<td>0.00</td>
</tr>
<tr>
<td>15. Course activities piqued my curiosity.</td>
<td>0.00</td>
<td>-0.89</td>
<td>0.00</td>
</tr>
<tr>
<td>16. I felt motivated to explore content related questions.</td>
<td>0.00</td>
<td>-0.89</td>
<td>0.00</td>
</tr>
</tbody>
</table>

- Table adapted from principal axis factoring with Oblimin rotations (n=2159)
SEM and CHAID Analysis

➢ Do instructor skills in the area of teaching presence foster a sense of social presence?

➢ Do student experiences of teaching and social presence “predict” their experience of cognitive presence?

➢ What item level responses predict the most variance in cognitive presence?

Structural Equation Modeling
Table 2: Unstandardized Path Coefficient and Total Effects

<table>
<thead>
<tr>
<th>Path</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender to Teaching Presence</td>
<td>.06*</td>
<td>.04*</td>
</tr>
<tr>
<td>Age to Teaching Presence</td>
<td>.02**</td>
<td>.08**</td>
</tr>
<tr>
<td>Academic Level to Teaching Presence</td>
<td>.00</td>
<td>.01</td>
</tr>
<tr>
<td>Teaching Presence to Social Presence</td>
<td>.52**</td>
<td>.52**</td>
</tr>
<tr>
<td>Teaching Presence to Cognitive Presence</td>
<td>.49**</td>
<td>.47**</td>
</tr>
<tr>
<td>Social Presence to Cognitive Presence</td>
<td>.52**</td>
<td>.49**</td>
</tr>
<tr>
<td><strong>Total Effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender to Social Presence</td>
<td>.03</td>
<td>.00</td>
</tr>
<tr>
<td>Gender to Cognitive Presence</td>
<td>.05</td>
<td>.00</td>
</tr>
<tr>
<td>Age to Social Presence</td>
<td>.01</td>
<td>.00</td>
</tr>
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<td>Age to Cognitive Presence</td>
<td>.02</td>
<td>.00</td>
</tr>
<tr>
<td>Academic Level to Social Presence</td>
<td>.00</td>
<td>.01</td>
</tr>
<tr>
<td>Academic Level to Cognitive Presence</td>
<td>.00</td>
<td>.01</td>
</tr>
<tr>
<td>Teaching Presence to Cognitive Presence</td>
<td>.77**</td>
<td>.72**</td>
</tr>
</tbody>
</table>

Note. *p<.05, **p<.001
CHAI Analysis

Questions:

What item level responses predict the most variance in cognitive presence?
Social Presence and Learning

- Acquisition metaphor
- Participation metaphor
- Dialogic metaphor

- Social presence is crucial if learning is conceived as dialogic and as participation in practice

- Learners need to be inducted into dialogue and practice to appropriate new knowledge through interaction

11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.
   Adj. R-squared = 0.000, t(216) = 0.579, df(2, 214)
Conclusion and Directions for Further Research

Dr. Marti Cleveland-Innes

Athabasca University

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?

Contact Information

Ben Arbaugh  arbaugh@uwosh.edu
University of Wisconsin Oshkosh

Marti Cleveland-Innes  martic@athabascau.ca
Athabasca University

Sebastian Diaz  sebastian.diaz@mail.wvu.edu
West Virginia University

Randy Garrison  garrison@ucalgary.ca
University of Calgary

Phil Ice  pice@uncc.edu
University of North Carolina Charlotte

Jennifer Richardson  jenrich@purdue.edu
Purdue University

Peter Shea  pshea@uamail.albany.edu
University at Albany, State University of New York

Karen Swan  kswan@kent.edu
Kent State University