

Community of Inquiry Framework: New Research on the Future of Online Learning

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Overview

Topics

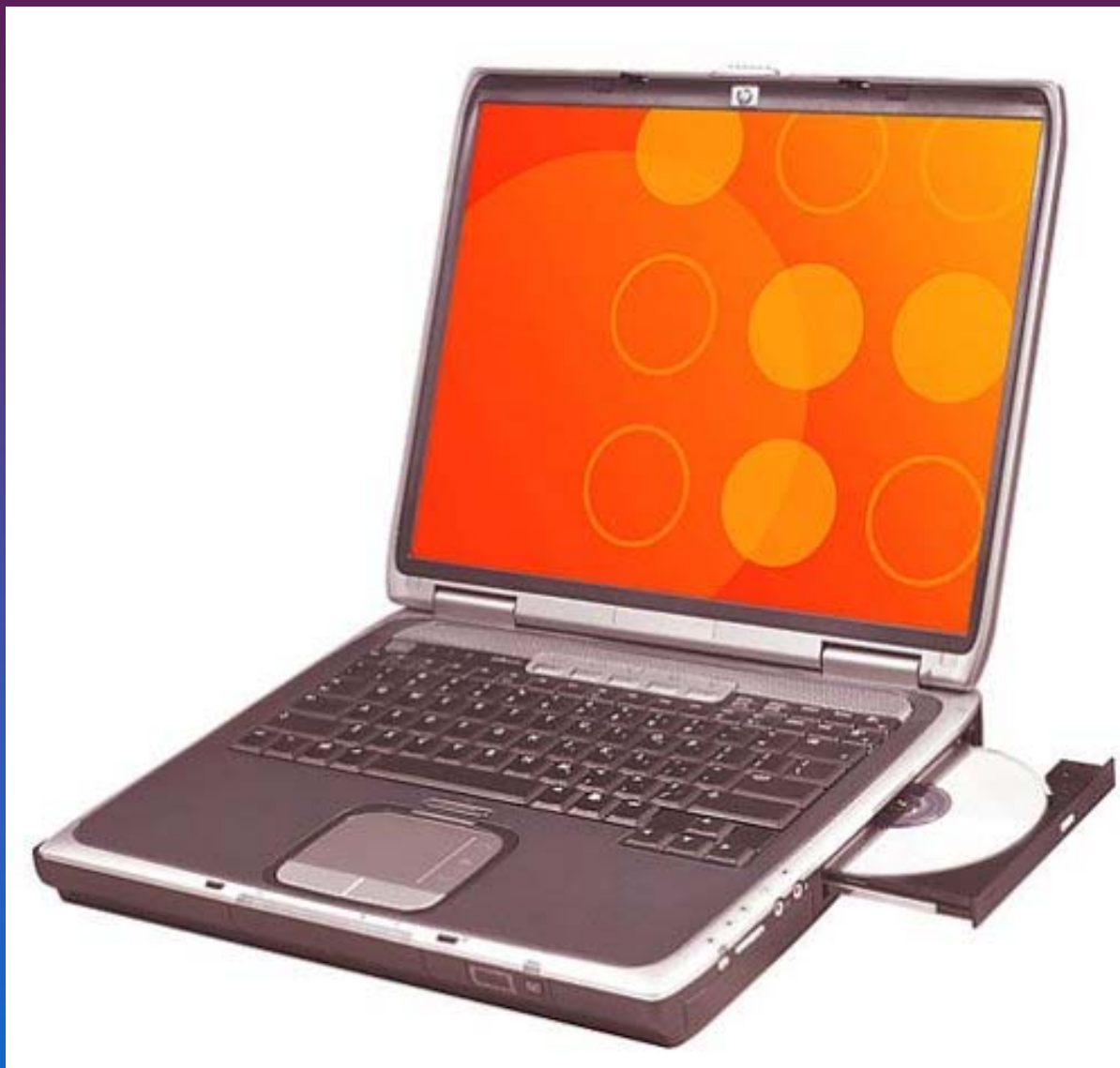
- How do people learn?
- What conditions lead to learning?
- How do people learn online?
- What conditions lead to online learning?
- A model for quality online learning environments
- Research on components of the model
- Context - Why we need to be interested in these topics...

Quick Quiz:

The processing power available in the original 30 ton, 18,000 tube ENIAC computer is now available in which common device?



Is it a
Laptop?



Cellphone?



Really small
cellphone?



Correct answer: It's a musical greeting card...



Some advances have been made in technology...and in Online Learning...



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EDUCATION

Online Courses Catch On in U.S. Colleges

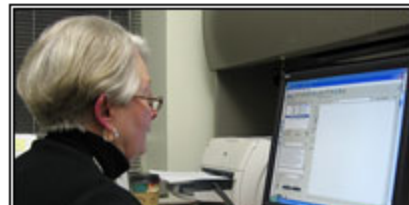
by Larry Abramson

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This is the first of a two-part report.



Enlarge Larry Abramson, NPR
Denise Keele, professor of environmental policy at the University of Illinois-Springfield, says she loves online teaching, but she feels it takes much longer to prepare for her online classes than her off-line courses.



Morning Edition, November 28, 2007 · When today's college graduates get together for a reunion someday, they may decide to do it by computer. That's because right now, nearly one in five college students takes at least one class online, according to a new survey.

For professors, the growth of e-learning has meant a big shift in the way they deal with students.

Take professor Sara Cordell of the University of Illinois-Springfield: Her day doesn't end at 6 p.m., as it does for some college professors.

Cordell sits at her computer in her campus office to chat with a half-dozen students gathered in

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ONLINE LEARNING GROWS MORE POPULAR

Improved technology has made online classes more attractive to more and more students.

By [Tom Regan](#) | Columnist
from the October 31, 2007 edition

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Page 1 of 2

When I helped teach an online class four years ago for Brandeis University in Waltham, Mass., I came away with mixed feelings.

Yes, it was cool teaching a class where the students were sprinkled across the United States. But it was difficult not seeing students face to face. And as convenient as it was to teach a course this way, having a discussion via software was not the same as the kind of interaction you get in a room full of students quickly feeding off one another.

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Growth in online learning soars
 More students are taking school courses via Internet

November 9, 2006

BY JUSTIN POPE

Roughly one in six students enrolled in higher education -- about 3.2 million people -- took at least one online course last fall, a sharp increase defying predictions that online learning growth is leveling off.

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OLU Online Learning Update Ray Schroeder, editor, OTEL - Online@Illinois Springfield

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OTEL

Wednesday, July 29, 2009

[Online Learning Classes See a Surge in Interest During the Struggling Economy - Marketwire](#)

As the economy struggles to rebound, colleges and universities are seeing a surge in interest. According to a June 2009 report from the National Association for College Admissions Counseling, a majority of schools (62%) are seeing an increase in the number of inquiries and applications they have received. eLearners.com, a web resource of EducationDynamics, which connects prospective students with online classes, has experienced this as well. In fact, for online education and teaching programs alone, interest has increased by nearly 60 percent from January to March of this year, compared with the last three months in 2008.

posted by Ray at 7/29/2009 12:06:00 AM [permanent item link](#)

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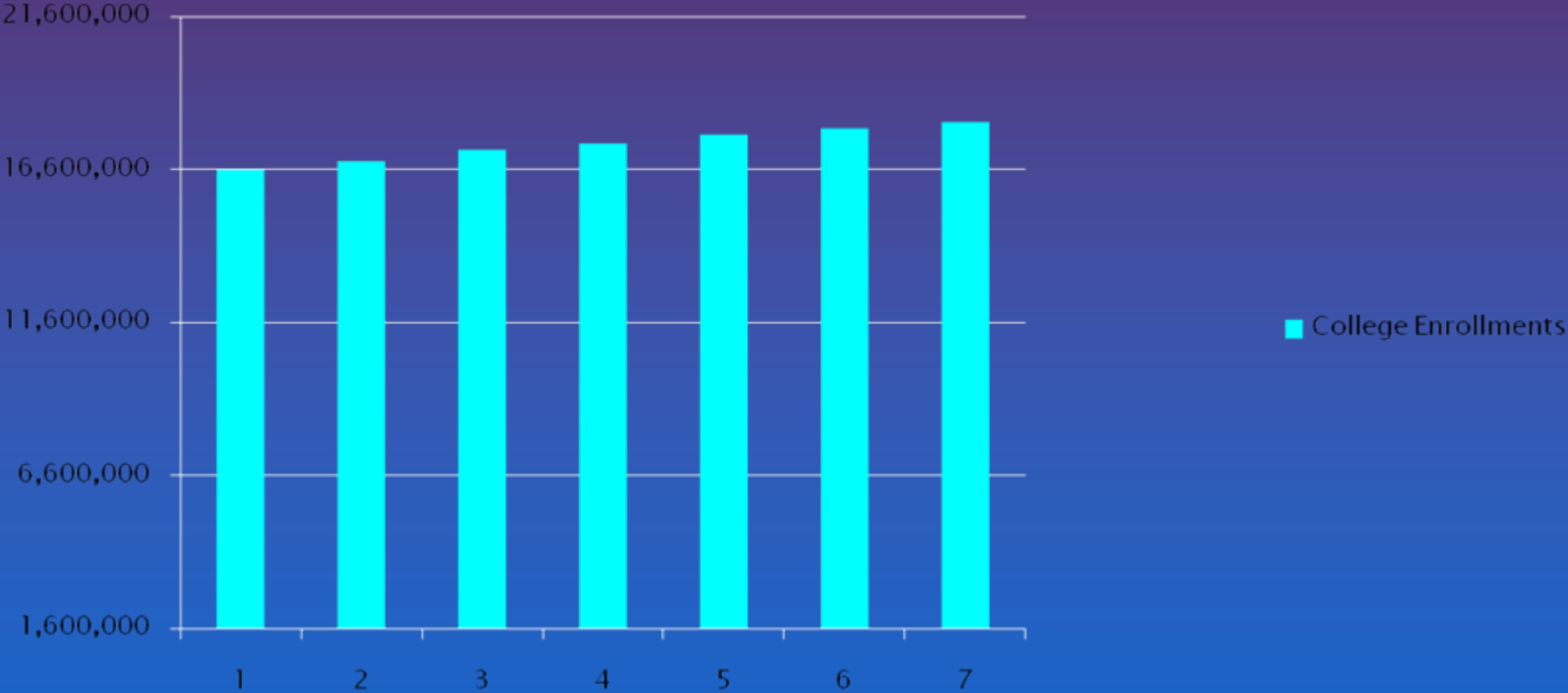
UMUC

In FY 2009, UMUC had over 196,000 online course enrollments.

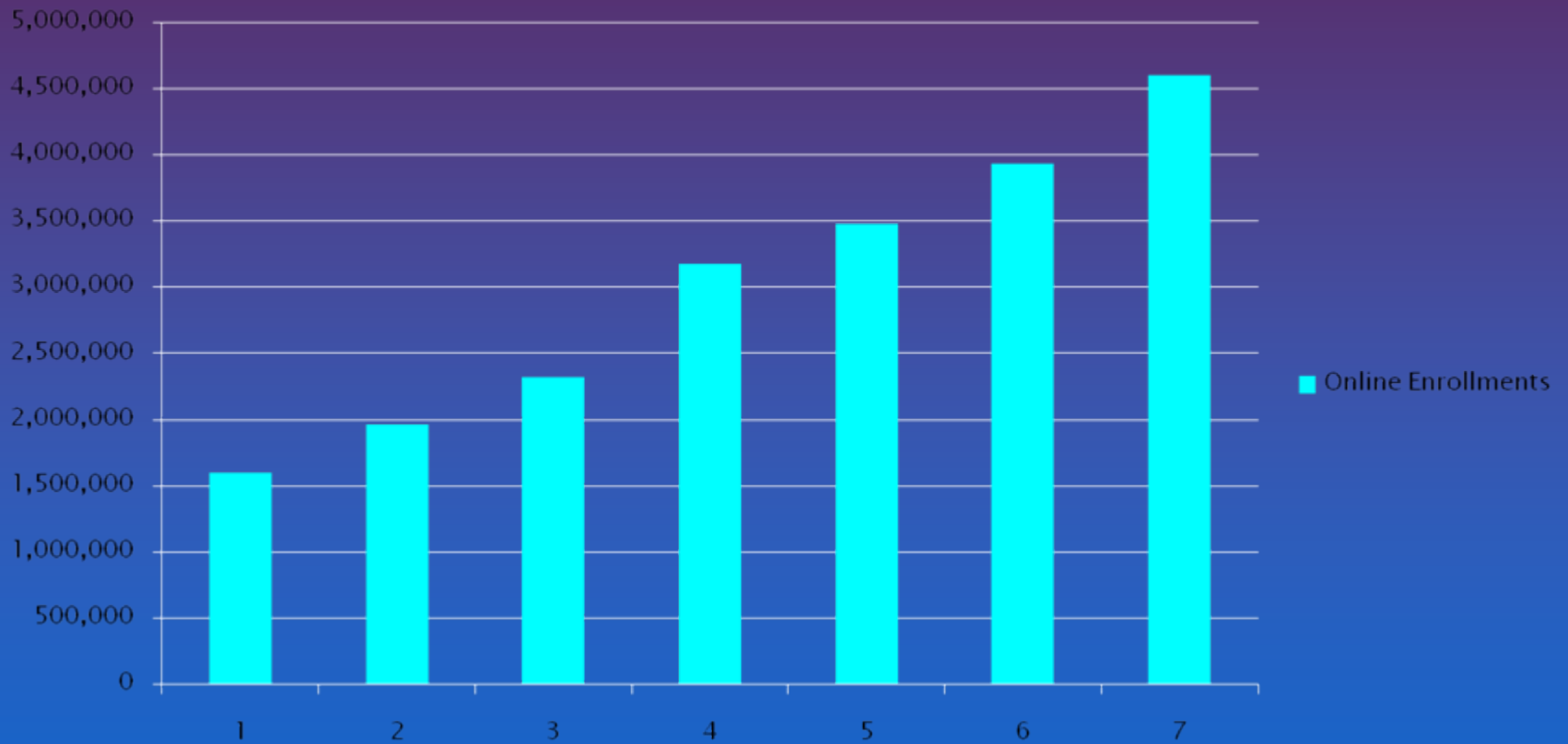
UMUC offers more than 100 bachelor and master degree programs and certificates fully online.

In FY 2009 UMUC offered close to 760 distinct courses online.

College Enrollments in the US 2002-2008



Online Enrollments 2002–2008



Summary

Approximately 4.5 million students studying in online environments in higher education (Allen & Seaman, 2009).

The Department of Education estimates these students generated 12 million online college course enrollments in 2007 (Parsad & Lewis, 2008).

More than 1 in 4 US college students take at least one online course each year.

Growth in online instruction is 6 times rate of growth in classroom instruction.

OK – sure its growing, but is it any good? Is anyone learning anything?

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BITS Learning Online May Be Better

By STEVE LOHR
Published: August 24, 2009

A recent 93-page report on online education, conducted by SRI International for the Education Department, has a starchy academic title, but a most intriguing conclusion: "On average, students in online learning conditions performed better than those receiving face-to-face instruction."

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Learning Outcomes are Better: Three Recent Reviews

- Bernard, M., Abrami, P., Lou, Y. Borokhovski, E., Wade, A., Wozney, L., Wallet, P., Fiset, M. Euang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of Educational Research* Vol. 74, No. 3, pp. 379-439.
- Means, B., Toyama, Y., Murphy, R., Bakia, M. & Jones, K. (2009). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. Washington, D.C.: U.S. Department of Education, Office of Planning, Evaluation, and Policy Development.
- Zhao, Y., Lei, J., Yan, B., Lai, C., Tan, H.S., (2005). What Makes the Difference? A Practical Analysis of Research on the Effectiveness of Distance Education. *Teachers College Record* Volume 107, Number 8, pp. 1836–1884.

* Learning outcomes are better – especially under certain conditions...get back to this later.

Quality of Outcomes: Results of Meta-Analyses of OL vs. CI

Meta-Analyses	Pub. Date	Inclusive Dates	Comparison	<i>k</i>	<i>ES+</i>	Sig. (<i>p</i>)
Bernard et al.	2004	1985-2003	OL vs. CI	59	0.12	= .05
<i>Source: New analysis of previous work from Review of Educational Research</i>						
Sitzmann et al.	2006	1996-2005	WBI vs. CI	71	0.15	≤ .05
<i>Source: Personnel Psychology</i>						
Cook et al.	2008	1990-2007	OL vs. CI	63	0.12	= .045
<i>Source: Journal of the American Medical Association</i>						
U.S. DOE	2009	1996-2006	OL vs. CI	28	0.14	≤ .05
<i>Source: U.S. Department of Education Meta-Analysis of Online Learning</i>						

Small but significant differences in favor of OLL...

Lets unpack some of this...

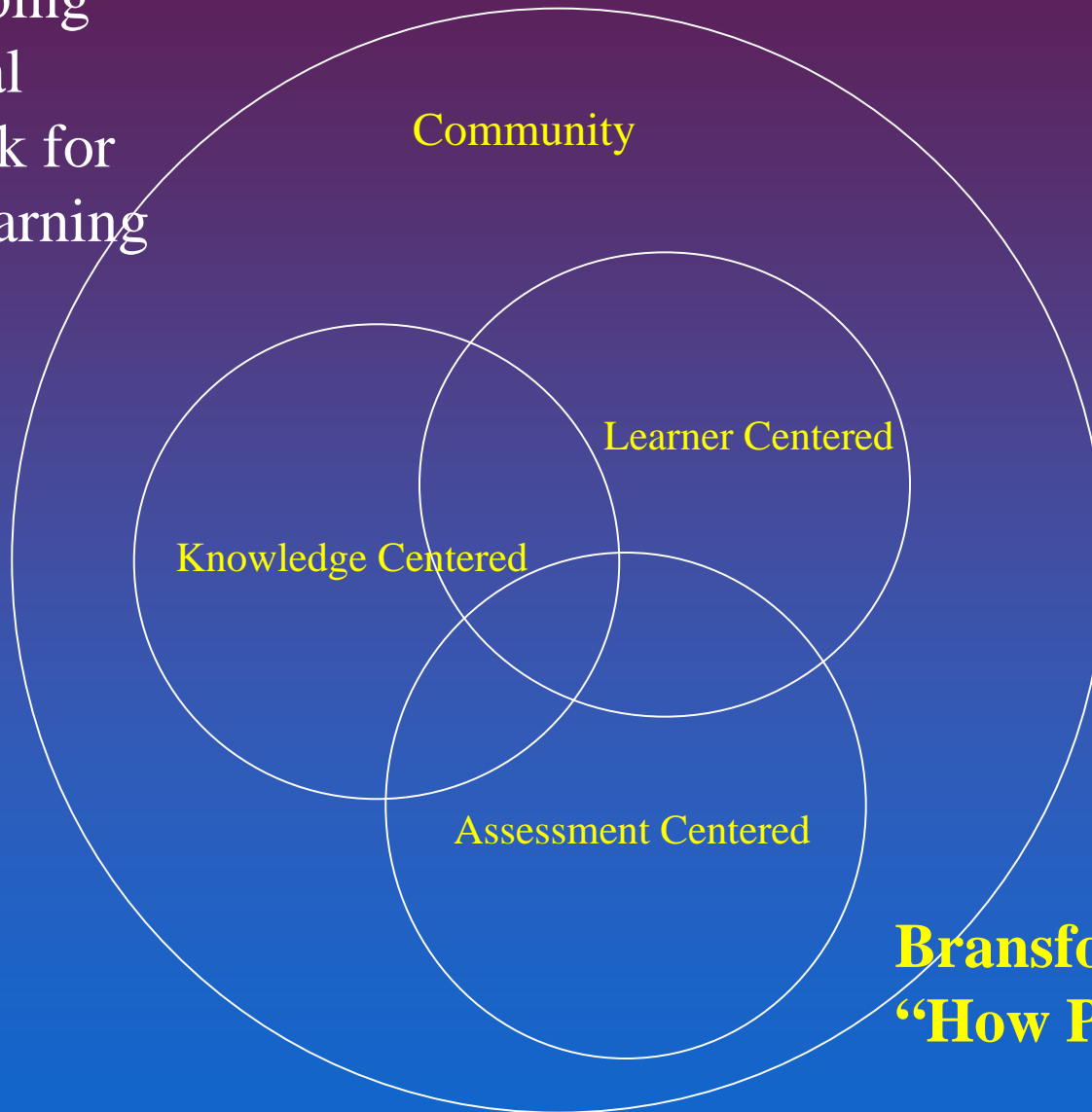
**What does it mean to learn
anyway?**

A task for you

Now – with a partner, answer the following questions -

How do people learn best? What conditions are necessary for learning to occur? Especially in higher education...

A Developing
Conceptual
Framework for
Online Learning



Bransford, et al (2002)
“How People Learn”

“How People Learn” Framework

(Bransford et al, 2002)

People learn best in environments that are:

Knowledge Centered –Outcomes oriented - knowledge, skills, and attitudes needed for successful transfer.

Learner Centered - connect to the strengths, interests, and preconceptions of learners and help them learn about themselves as learners.

Community Centered –environment where students feel safe to ask questions, learn to work collaboratively, and are helped to develop lifelong learning skills.

Assessment Centered - provide multiple opportunities to make students’ thinking visible so they can receive feedback and be given a chance to revise.

Another task for you

How do people learn best **online**?

What conditions are necessary for learning to occur **online**.

(especially in higher education)

**The question we want to
address:**

**What makes a good, higher
education, online-learning
environment?**

What makes a good, higher education, online-learning environment?

To answer this you need to know:

- 1) What makes a good learning environment “offline”?
- 2) What are important, specific, best practices for adult learners *in higher education*?
- 3) What are important specific, best practices for adult *online* learners in higher education?

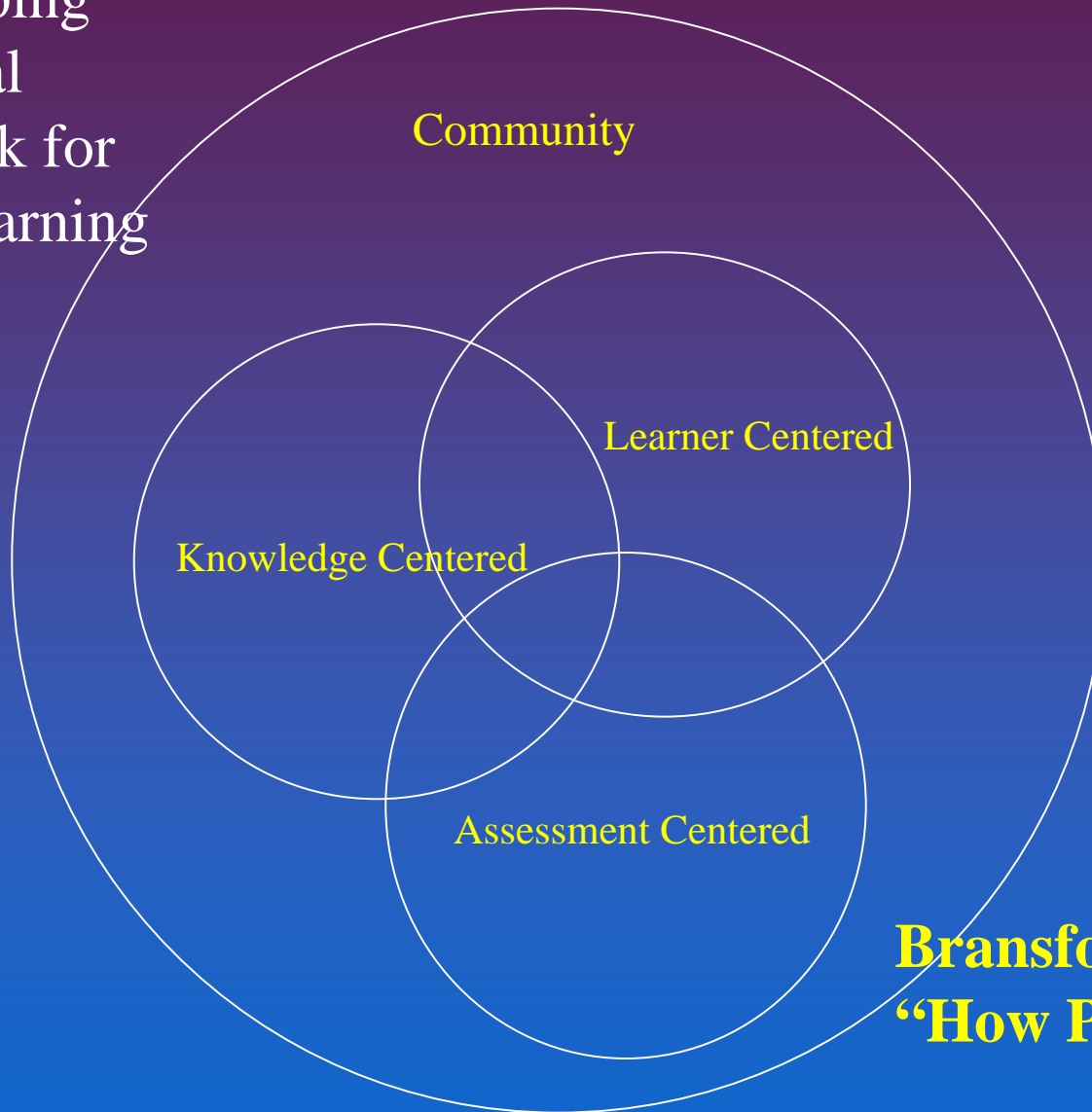
What makes a good, higher education, online-learning environment?

To answer this you need to know:

1) What makes a good learning environment generally?

Again the Brandsford et. al model is a good start...

A Developing
Conceptual
Framework for
Online Learning



Bransford, et al (2002)
“How People Learn”

What makes a good, higher education, online-learning environment?

To answer this you need to know:

2) What are important, specific, best practices for adult learners *in higher education*?

The 7 principles of good practice in undergraduate education encourage:

"Certain institutional practices are known to lead to high levels of student engagement. Perhaps the best known set of engagement indicators is the "Seven Principles of Good Practice in Undergraduate Education."

(Kuh, 2007 – National Survey of Student Engagement)

Contact Between Students and Faculty

Reciprocity and Cooperation Among Students

Active Learning Techniques

Communication of High Expectations

Respect for Diverse Talents and Ways of Learning

Prompt Feedback

Time on Task

Chickering and Gamson, (1987)

A Developing Conceptual Framework for Online Learning

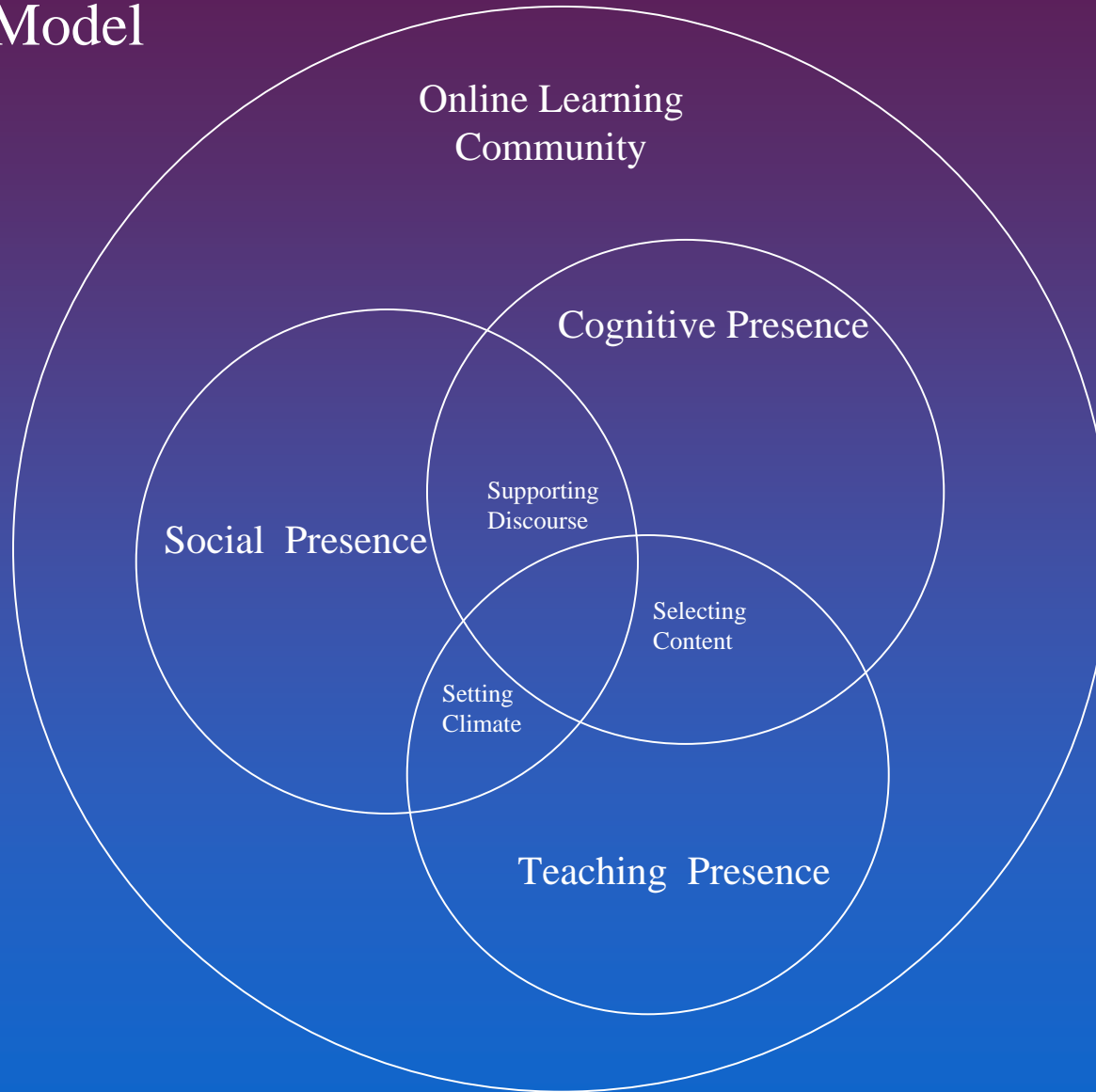


What makes a good, higher education, online-learning environment?

To answer this you need to know:

3) What are important specific, best practices for adult *online* learners in higher education?

Community of Inquiry Model (CoI)



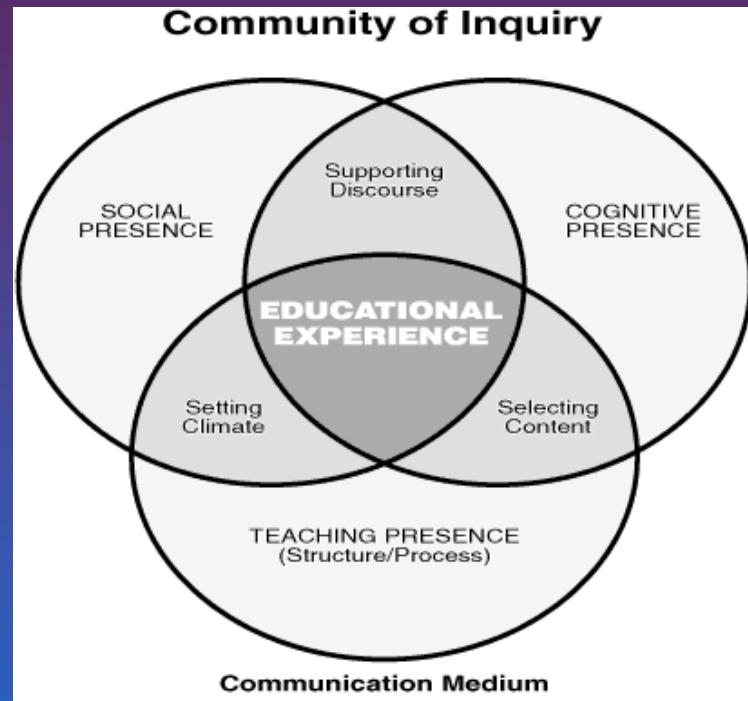
Critical Inquiry in a Text-Based Environment

Garrison, Anderson, and Archer (2002)

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

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 Clarifying, explaining, demonstrating

Our Recent Research on Col in the SUNY Learning Network

Shea, P. & Bidjerano, T. (2009). Community of inquiry as a theoretical framework to foster "epistemic engagement" and "cognitive presence" in online education. *Computers and Education*, 52 (3), 543 – 553.

Shea, P., & Bidjerano, T. (2008). Measures of quality in online education: An investigation of the community of inquiry model and the net generation. *Journal of Educational Computing Research*, 39 (4), 339-361.

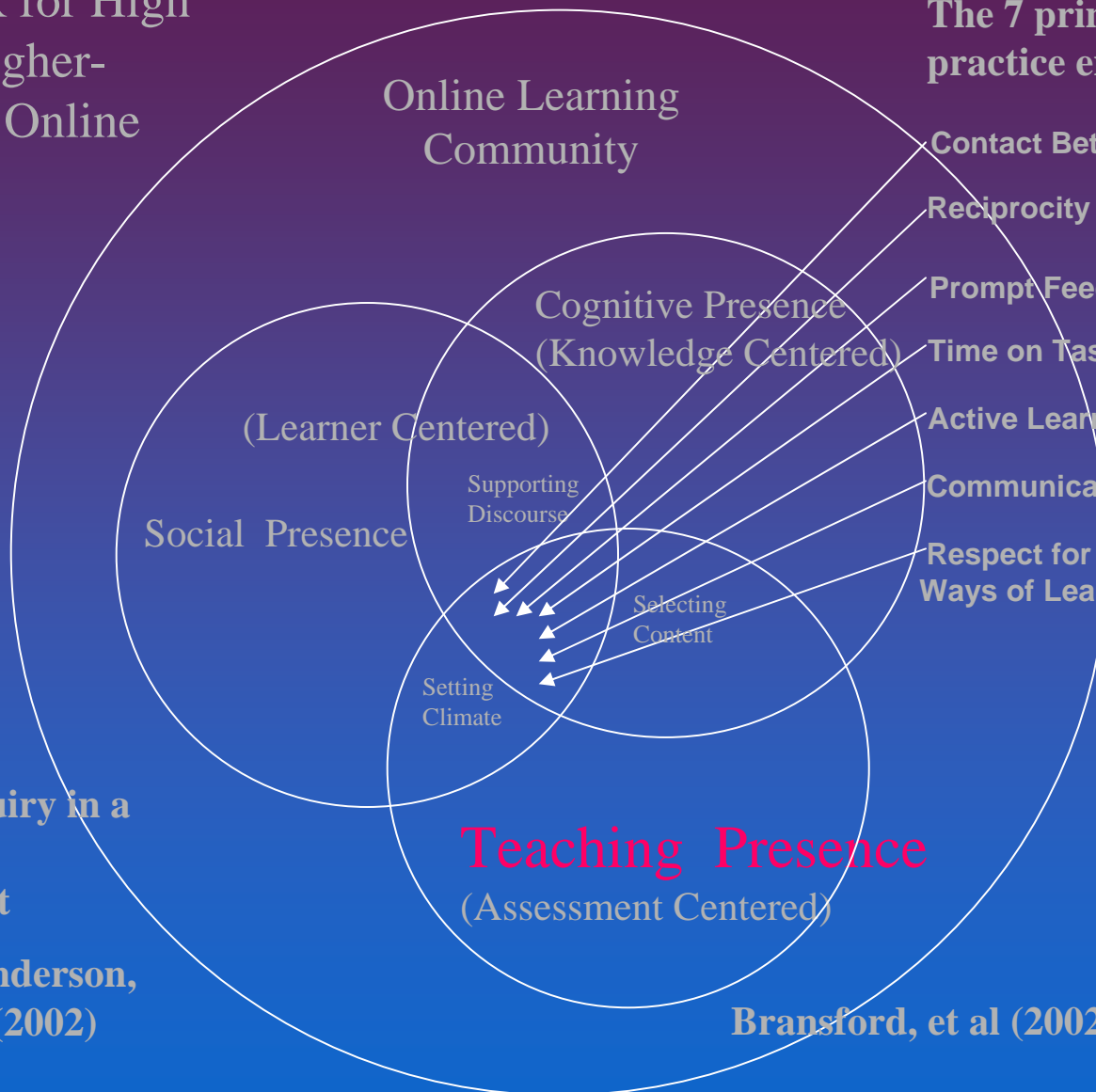
Shea, P., Li, C. S. & Pickett, A. (2006). A study of “teaching presence” and student sense of learning community in online and classroom environments. *The Internet and Higher Education*, 9(3), 175-191

Shea, P. (2006). A study of students’ sense of learning community in online environments. *Journal of Asynchronous Learning Networks*, 10(1), 35-44.

Shea, P., Li, C., Swan, K., & Pickett, A. (2005). Developing learning community in online asynchronous learning networks. *Journal of Asynchronous Learning Networks*, 9(4), 59-82.

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. .

A Conceptual Framework for High Quality, Higher-Education, Online Learning



The 7 principles of good practice encourage:

- Contact Between Students and Faculty
- Reciprocity and Cooperation
- Prompt Feedback
- Time on Task
- Active Learning Techniques
- Communication of High Expectations
- Respect for Diverse Talents and Ways of Learning

Chickering and Gamson, (1987)

Critical Inquiry in a Text-Based Environment

Garrison, Anderson, and Archer (2002)

Bransford, et al (2002) "How People Learn"

Teaching Presence

“The design, facilitation, and direction of cognitive and social process for the realization of personally meaningful and educationally worthwhile learning outcomes.”

(Anderson et al 2001)

In a learner-centered environment “teaching presence” is established by both instructors and students.

Teaching Presence

1. Instructional Design and Organization
2. Facilitating Discourse
3. Direct Instruction

Instructional Design and Organization

Setting the Curriculum

Designing Methods

Establishing Time Parameters

Utilizing the Medium Effectively

Establishing Netiquette

Teaching Presence

Instructional Design and Organization

Facilitating Discourse

Direct Instruction

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

Teaching Presence

Instructional Design and Organization

Facilitating Discourse

Direct Instruction

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

Faculty Training and Teaching Presence

More than 300 SUNY faculty engaged in day-long teaching presence workshops designed to revise and improve their online courses

Also received follow-up support from an assigned instructional designer to assist with implementing ideas from the workshop in their online courses

Questions that participants addressed included:

- 1) What is teaching presence, why is it important?
- 2) How do we measure or identify teaching presence in an online course?
- 3) What are some instructional design elements that can enhance teaching presence?
- 4) How can we improve teaching presence through online classroom management?
- 5) What tools does the SLN Course Management System (CMS) provide to facilitate teaching presence?

Teaching Presence Study

Faculty who participated in Teaching Presence workshops and received follow-up support.

Both faculty and students completed surveys designed to measure teaching presence in their courses

40 questions

366 Faculty responded

101 Faculty respondents had taken the workshop

6063 Students responded in all

954 Students of faculty who had taken the workshop responded

Results Related to Teaching Presence Workshop Attendees

Results Related to the Workshop on Teaching Presence

- Teaching Presence Survey (Spring 2008)
- Results indicate that students (N= 954) in courses taught by faculty who attended the Teaching Presence workshop (N=101) **rated their instructors and courses higher** on all of the measure of teaching presence
- Student rated courses **significantly higher** on the following measures of teaching presence relative to students whose instructors had not attended the training:

Significantly Higher Ratings for Workshop Attendees

- Drawing in participants, prompting discussion (instructor and other students)
- Staying on Task (instructor and students)
- Focus the discussion on specific issues (instructor and other students)
- Confirming understanding (other students)

Significantly Higher Ratings for Workshop Attendees

- Injecting knowledge from diverse sources (instructor)
- Utilizing the medium effectively
- Establishing netiquette
- Identifying areas of agreement/disagreement
- Seeking to reach consensus

Results: Workshop on Teaching Presence

- Student Satisfaction

Students whose instructors had attended the teaching presence workshop also reported **significantly higher levels of satisfaction** with their courses than their peers whose instructors had not attended.

- Reported Learning

Students of instructors who had participated in teaching presence workshop were significantly more likely to report that their **learning was higher online** than for similar classes they had taken in the classroom.

Conclusions

This and previous studies reveal teaching presence measures correlate highly with measures of student satisfaction and reported learning.

Student satisfaction and reported learning are more closely associated with instructor's teaching-presence behaviors than those of other students. Students look to faculty for lead role.

IMPORTANT

Faculty who engaged in workshops on Teaching Presence benefited in terms of improved student satisfaction and reported learning.

These student rate their instructors as more effective and their online learning as superior to classroom instruction, per recent research on online learning (e.g. Means, et. al., 2009).

Other Recent Research

- Using factor analysis and SEM
- Survey of 5000 online students in 40 colleges
- Asked questions about quality of online learning based on Col framework
- Results: items cohere into “constructs”
- Constructs can be used to predict variance in student ratings of their learning (CP)

Teaching Presence Indicators

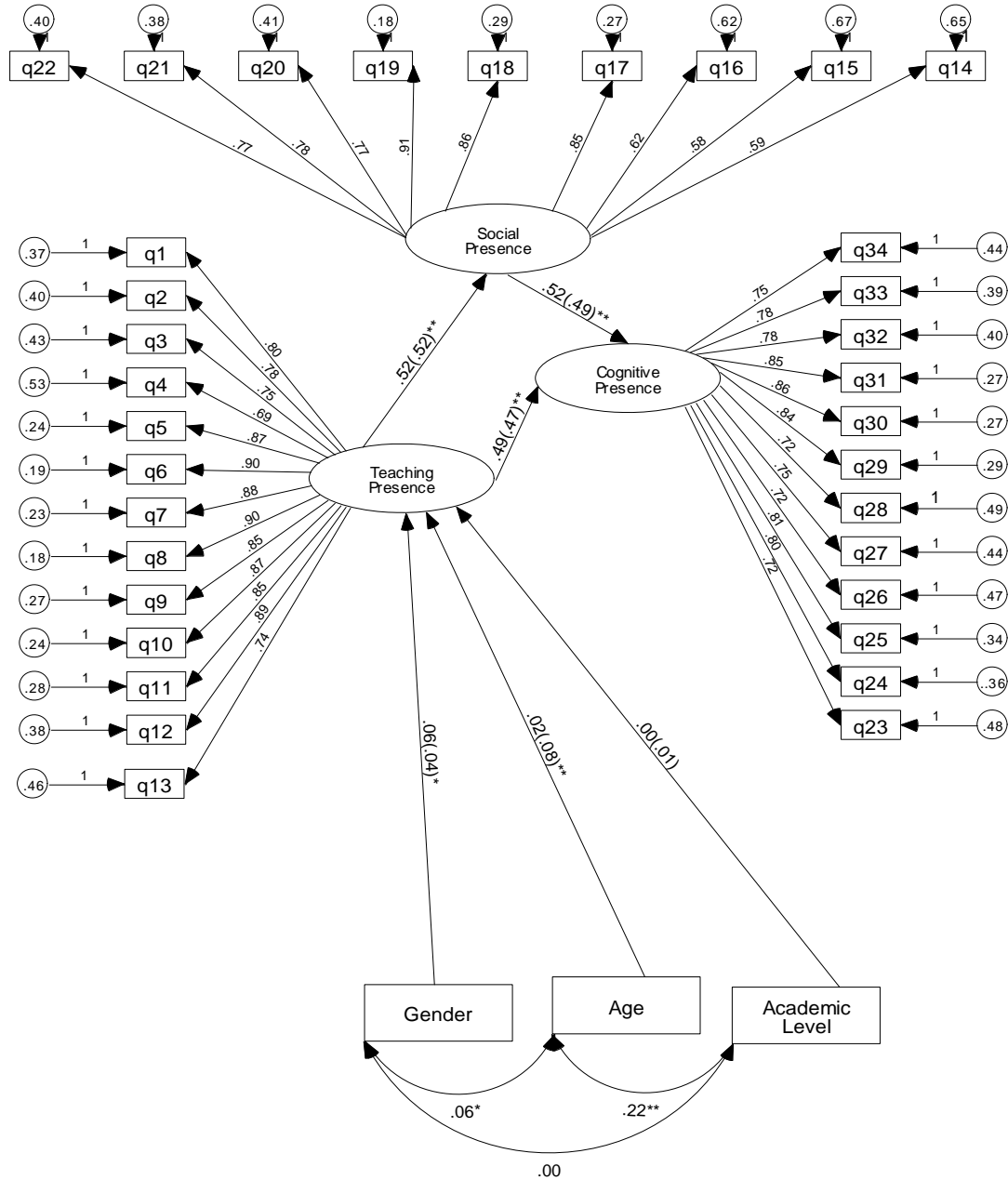
- When the Instructor (examples):
- **clearly communicates** important **course topics**
- **clearly communicates** important **course goals**
- provides **clear instructions** on how to participate in course learning activities
- clearly communicates important **due dates/time frames** for learning activities
- **identifies** areas of learner agreement and disagreement
- Fosters **resolution**

Social Presence Indicators

- It facilitates:
- Getting to know other course participants provides a **sense of belonging**
- Ability to form **distinct impressions** of some course participants
- Perception that online or web-based communication is **good medium** for social interaction
- Comfort **conversing** through the online medium
- Comfort **participating** in the course discussions

Cognitive Presence Indicators

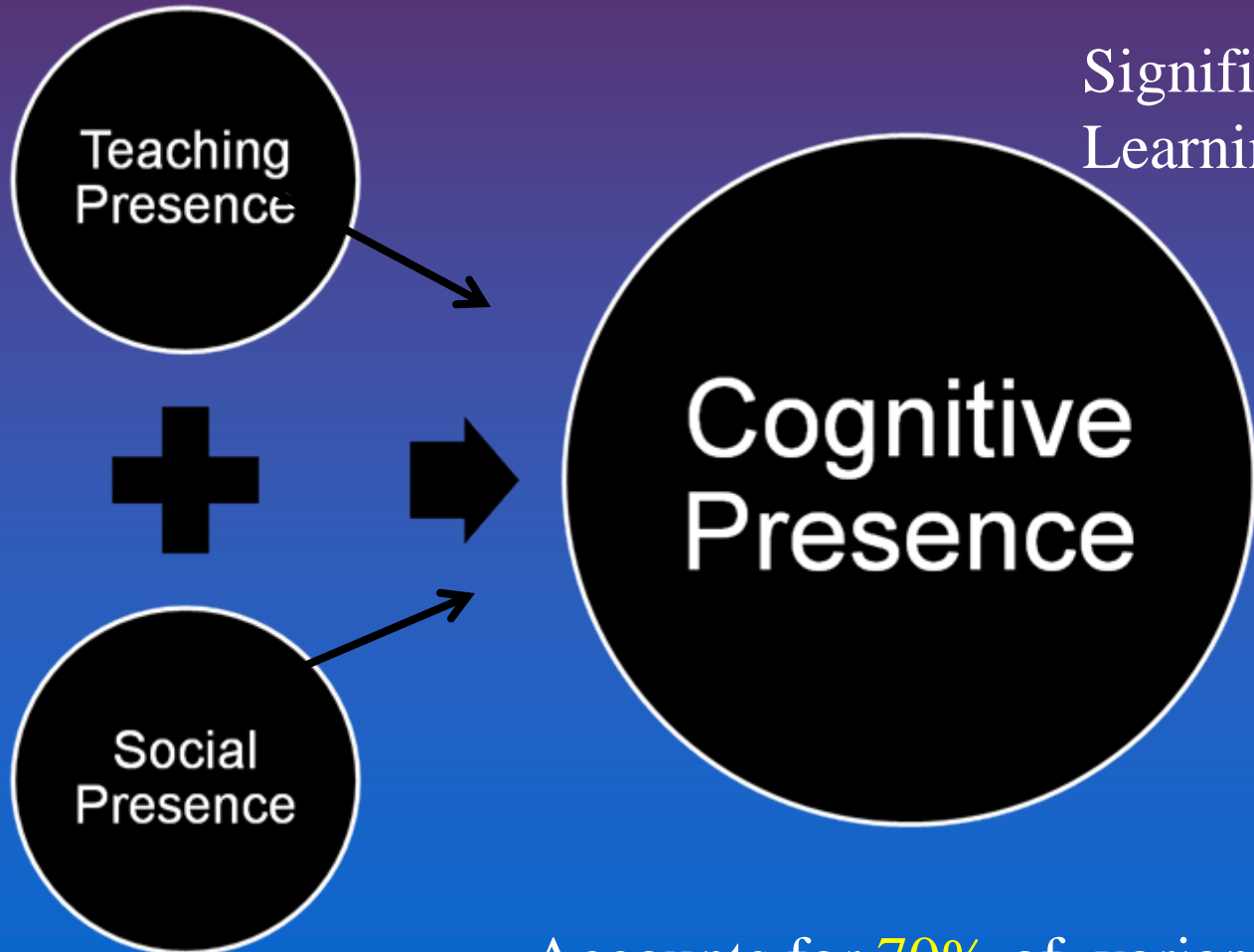
- Online discussions were valuable in helping me **appreciate** different perspectives
- Combining new information helps me **answer** questions raised in course activities
- Learning activities help me **construct** explanations/solutions
- Reflection on course content and discussions help me **understand** fundamental concepts
- I can describe ways to **test and apply** the knowledge created in this course
- I can **develop solutions** to course problems that can be applied in practice
- I can **apply the knowledge** created in the course to work or other non-class related activities



Community of Inquiry Model

Instructional Role

Significant
Learning



Collaborative
Online
Environment

Accounts for **70%** of variance

What seems to be missing?

Inputs

- Online Instructor role (TP)
- Online Learning Environment (SP)
- X?

Outcomes

- Significant Learning (CP)
- Hmmmm....

Learner Presence

Describes those behaviors that are specific to the learner and which online instructors **do not and cannot** demonstrate (i.e. not traditional TP)

E.g. student-student collaborations in which (solely) learners, a) negotiate logistics, b) interpret instructor provided instructions, c) plan elements of L2L collaborative projects

Also describes strategic self-regulatory learning behaviors in which successful online students engage

What is LP?

Learning to learn “online”

Online learner self regulation

Meta-cognition - reflection

Self efficacy online

Motivation for online learning

Intentional control of effort online

Intentional control of affect online

Strategic learning in online environments

Why?: It can be “taught” and “learned”

Online Learner Presence

- Strategic online students engage in monitoring and self-regulation of *online behavior* including effective control of temporal, spatial, technological, and human resources
 - Includes regulation of learner time management, study environment (e.g., the place in which they participate in the online course), technologies used, and online interactions with peers and faculty members to seek help
- Learner self-regulation of *motivation and affect* involves identifying and addressing motivational beliefs such as self-efficacy and goal orientation, to adapt to the demands of an online course.
 - Successful online students monitor and regulate motivation, emotions and affect (such as anxiety) in ways that impact their learning.
- Strategic learner self-regulation of cognition involves monitoring and intentional control of various *cognitive strategies for learning*,
 - conscious and intentional use of self regulated strategies (e.g. self monitoring, self explanation, elaboration, rehearsal) that result in better learning and performance

(adapted from Garcia & Pintrich, 1994; Pintrich, Smith, Garcia, & McKeache, 1993).

Evidence for online “LP”

Nine studies (Bixler 2008; Chang 2007; Chung, Chung and Severance 1999; Cook et al. 2005; Crippen and Earl 2007; Nelson 2007; Saito and Miwa 2007; Shen, Lee and Tsai 2007; Wang et al. 2006) examined the degree to which promoting aspects of learner self reflection in a Web-based environment improved learning outcomes.

These studies found that a tool or feature prompting online students to reflect on their learning was effective in improving outcomes. Means, et. al. (2009)

More recent research indicates online learner self regulation can be measured, profiled, and is a predictor of GPA (Barnard-Brak, Lan, Patton, 2010)

Other evidence for “LP”

Overall, the available research evidence suggests that promoting self-reflection, self-regulation and self-monitoring leads to more positive online learning outcomes.

Features such as prompts for reflection, self-explanation and self-monitoring strategies have shown promise for improving online learning outcomes.

Means, et. al. (2009)

Other evidence for LP

The *clearest recommendation for practice* (...) is to incorporate mechanisms that promote student **reflection on their level of understanding**.

A dozen studies have investigated what effects manipulations that trigger *learner reflection and self-monitoring of understanding* have on individual students' online learning outcomes.

Ten studies found that experimental manipulations offered *advantages over* online learning that did not provide the trigger for reflection.

(Means, et. al., 2009)

Our current research

Survey of over 3000 online learners

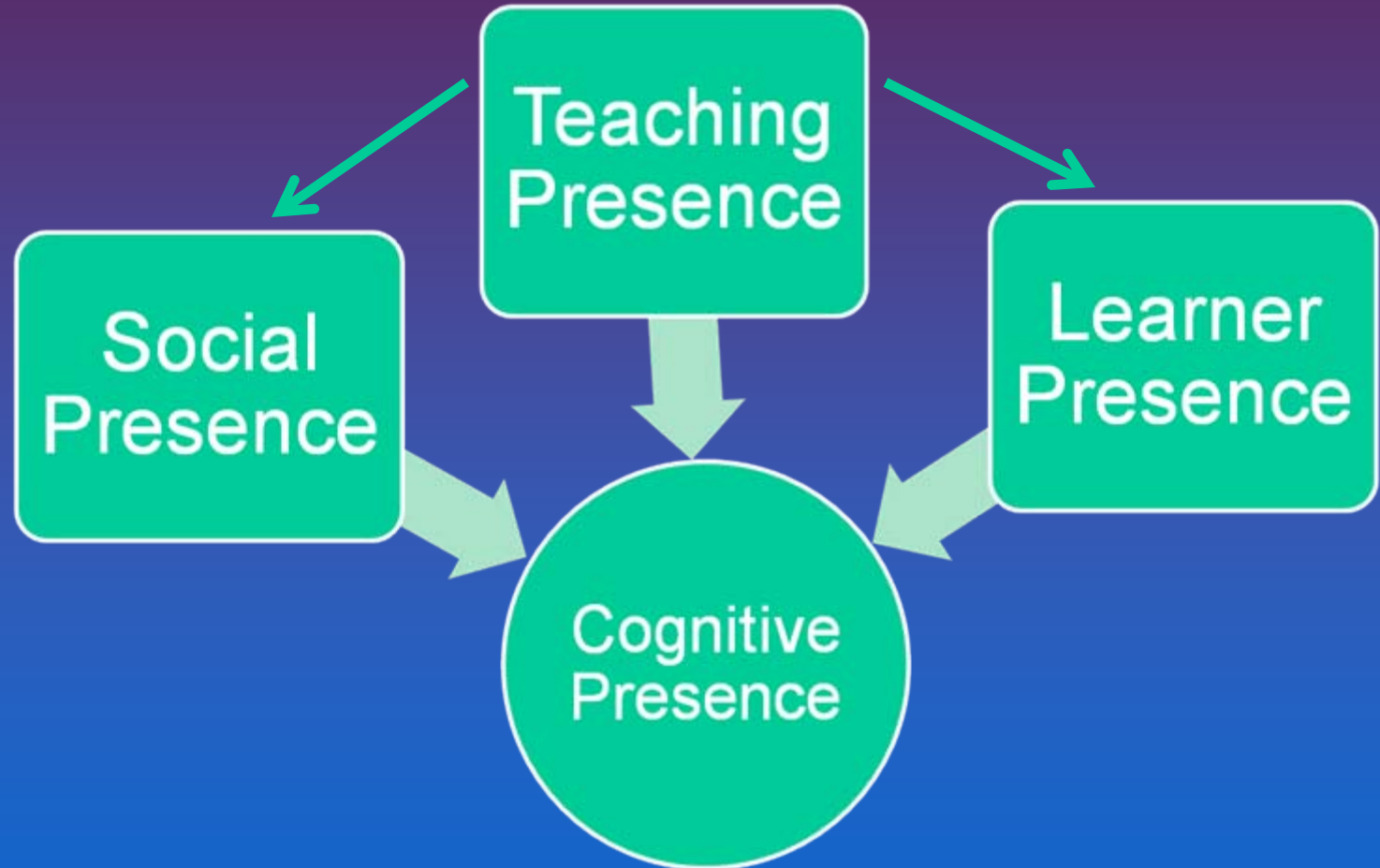
Study of elements of self regulated learning

Measures of **self-efficacy** and **effort regulation** as predictors of Col constructs in blended and fully online courses

Results: Self efficacy “predicts” Col measures

Support for self-efficacy is even more important in fully online courses than in blended/hybrid courses.

New Hypothesized Col Relational Model



What can you do?

Think about a course you teach.

How might you promote better learner presence (LP) in your own online course(s)?

Think of the three dimensions – learner reflection and subsequent regulation of:

- Cognition
- Behaviors
- Affect/Motivation

Current research

Can we use learning journals to promote online learner reflection and self regulation?

Provide prompts to reflect on behavior, motivation, and cognition?

Prompts to promote better

- time management, tracking learning time (behavior)
- reflections on what is confusing (cognition)
- what do I know, what do I need to know (cognition)
- how does this apply beyond my course, to my life? (motivation)
- am I engaged in my course? Why? Why not? (motivation)

Questions





Thank you!

Peter Shea

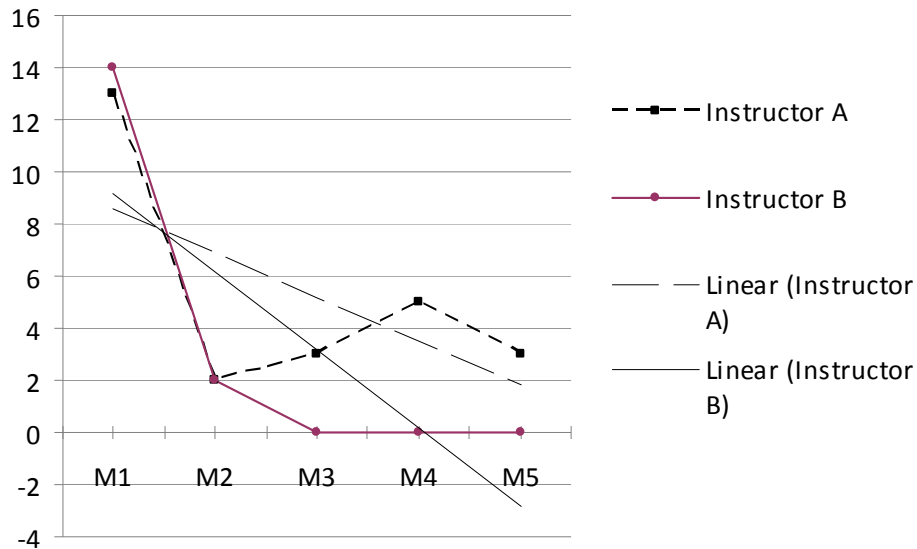
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Teaching Presence: A New View

Total Instructor TP In Discussion



Total Instructor TP Coursewide

