I-Class Technology and Its Impact on the Psychological Teaching and Learning Climates in Higher Education

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iClass Technology and Its Impact on the Psychological Teaching and Learning Climates in Higher Education

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2nd Annual SoTL Commons Conference
Today’s Experience: Outcomes

- To understand the faculty and student *PC Perceptions* of the Teaching and Learning in the iClassroom,
- To become aware of the term, *PC Perceptions*, and its applicability to teaching and learning in HE,
- To pontificate on the status of “authentic learning” in the classrooms with technology,
- To generate and share best practices in using technology to create a positive PC climate for teaching and learning.
iClass Technology: The Situation

- A relatively new focus on technology in teaching and learning,
- The sentiment: Younger generations, esp. Millennials, need technology for optimal learning,
- Paradigm shift in learning and teaching,
- Learning is different; requires teaching (pedagogy) to be different or vice versa,
- Most faculty have not adequately adjusted pedagogy to this paradigm shift,
- Resistance by faculty
iClass at Alliant International University

- Alliant International University,
- 2005 Title V grant for iClass Initiative,
- Goal: *To bring technology into the classroom*,
- Initially two iClassrooms in SR campus,
- 19 iClasses across CA campuses.
- My research grant to determine effect of iClass on T&L climate
iClassroom Features

- iClassrooms across six California campuses,
- Main ones: Circular seating with laptops for all students. Desk and laptop for instructor,
- Smart board, (notebook and scratchpad)
- Internet capability,
- Technology: *SynchronEyes* (broadcast, control, send info to students, block, highlight, etc)
To determine the effect of iClass technology on the *psychological teaching and learning climate perceptions* on Alliant International University’s Scripps Ranch campus.

To determine if it differs from the teaching and learning climates that traditional classrooms yielded.
Psychological Teaching and Learning

Climate Perception: What is it?

- A climate theory from a social constructivist and phenomenological perspective,
- Climate is not an objective organizational attribute,
- Phenomenological experiences of org members,
- “people respond to situations in terms of the meaning it has for them” (James & Jones, 1988)
- If members generate similar meaning of situation/events, they have shared PC perceptions
PC Perceptions: Process of Meaning

- Use previously stored mental representations or schemas,
- Place them in discreet cognitive categories (schemas) based on prior learning or experience,
- Derive cognitive associations and relationships between sets of categories and experience generating higher-order (HO) processing,
- Higher-order processing generates higher-order schemas (HOS)
PC Perception: The Study’s Focus

- Interested in HOSs faculty and students use and the interpretation and perceptions they generate about teaching and learning in the iClassroom…. *a significant investment!*

- **Hypothesize:** Since students and faculty differ in their phenomenological experiences within the university, their PC perceptions of the same phenomenon might differ,

- If there is **similarity** it would indicate a shared psychological climate perception among and within faculty and student groups of T&L in the institution (James & Jones, 1988)
Research Objective #1 and Methodology

- To define and describe the iClass technology background and mission

**Methodology:**
- Archival documentation,
- Interviews with key personnel
Research Objective #2 and Methodology

- To understand faculty philosophy and goals for student learning and their strategies for achieving them using iClass technology

Methodology:
- Surveys administered and completed online by nine (9) faculty to identify the schemas used to describe an ideal teaching and learning climate
  - Characteristics of population....
Objectives #3, #4, #5

- To determine the nature of students and faculty *psychological teaching and learning climate perceptions of the iClassroom* as compared with traditional classrooms, and
- To identify how they differ between and among these two groups.
Objectives #3, #4, #5: Methodology

- Surveys administered online to 9 faculty members and 55 graduate and undergraduate students,
- Students have had classes in both the iClass and the traditional class,
- Undergraduate and graduate students from across all disciplines in the university,
- Students completed and submitted survey during a class in 20-25 minutes
- Faculty completed online surveys at their leisure
- Faculty data quantitatively & qualitatively analyzed,
- Data analysis: ANOVA, t-test
iClass Research Questions

- How can the iClass psychological teaching climate perceptions be described for faculty?
- How can the iClass psychological learning climate perception for students be described in comparison to that of traditional classrooms?
- Are there different psychological learning climate perceptions between and among faculty and students? If so, what are they?
iClass Research Questions

- Is there a difference between the psychological teaching and learning climates in the iClass and the traditional classroom?
- Has iClass technology affected the psychological teaching and learning climate on the Scripps Ranch campus?
- What are the differences that contribute to students’ and faculty’s schemas & HOSs perceptions of an effective learning climate?
iClass Research Question #1: Results

- How can the iClass psychological teaching climate perceptions for **faculty** be described in comparison to the one in traditional climate?
  - HOSs and Schemas identified,
  - 100%: T&L climate is better
  - 100%: Enjoy teaching in iClass more than traditional
iClass Research Questions #1: Results

- 91%: Teaching style differs
- 91%: Students’ attitude toward learning better
- 91%: Students do better academically
- **100%: Schemas** identified
  - 1st: SMART board,
  - 2nd: Internet access and Blackboard Course Website
  - 3rd: iClassroom layout
  - *SynchronEyes*.....not very favored
iClass Research Question #2: Results

How can the iClass psychological learning climate perception for students be described in comparison to the one in traditional classrooms?

- **HOSs and Schemas** identified,
- 77%: Learning better in iClass than traditional,
- 93%: Engaged more in learning,
- 81%: More enthusiastic and motivated about learning,
- 74%: Learned more,
- 90%: More interaction among students and between them and faculty,
- 50%: Better interaction with faculty
iClass Research Question #2: Results

• 60%: Encourage class discussions,
• 93%: Makes learning fun,
• 71%: Understand material better,
• 85%: Did not feel strongly about missing class in the iClassroom,
iClass Research Question #2: Results

- 76%: Attention to learning material is better,
- 85%: Teaching is better in the iClassroom than traditional.

**Schemas** identified:
- 91%: Use of the internet and access to laptops,
- 82%: Round tables---good but does not help with understanding or remember material,
- 79%: SMART board and Blackboard Course website,
- *SynchronEyes*---not perceived as having impact
iClass Research Question #2: Results

- 85%: Blackboard course website
  - 83%: Helps remember material more,
  - 83%: Helps understand material better,
  - 69%: Material more interesting,
  - 72%: Engages them more in class discussions
iClass Research Question #3: Results

- Are there differing psychological learning climate perceptions between and among faculty and between faculty and students? If so, what are they?
  - Minimal,
  - 100% Faculty vs 83% Students identified the SMART board, Blackboard and internet access as most positive,
  - 83% Faculty vs 60% Students perceive increase in peer-to-peer interaction,
  - 100% Faculty vs 77% Students perceive that learning is better
iClass Research Question #4: Results

- Is there a difference in the psychological learning and teaching climate perceptions between the iClassroom and the traditional?
  - Very significant preference for iClassroom by faculty and significant for students,
  - iClassroom characteristics satisfy HOS of both groups,
  - Students perception of iClass is positive but not to same extent as the faculty perceptions.
iClass Research Question #5: Results

- Has iClassroom technology affected the psychological teaching and learning climate perceptions on the Scripps Ranch campus?
  - Strong evidence that it has,
  - Significantly high change for faculty,
  - Affects faculty teaching style and allows them to accomplish teaching goals and learning outcomes
  - Very high change for students
iClass Research Question #6: Results

- What are the different attributes (schemas) that contribute to students’ and faculty’s perceptions of an effective learning climate?
  - See handout for results. Generated from results of research questions #1 and #2,
There is a shared psychological teaching and learning climate perceptions within and between student and faculty groups on the Scripps Ranch campus….
  - Suggests strong co-cultures within the university.

Very significant T&L climate change for faculty,

Significant T&L climate change for students,
There is evidence that some international students experience discomfort within this new teaching and learning climate

- The iClass features do not provide positive meaning for their schemas and HOSs as it relates to effective teaching and learning environments.

High ROIs in the iClass technology…..BRAVO!!!
Limitations of the Study

- Inadequate faculty sample size,
- Inadequate student sample size,
- Did not include the perspective of international students as a variable...It is an international university,
- Did not focus on demographic characteristics as variables.......NEXT STEP!
Further Research Suggestions

- Since it is an *international* university, more of a focus on the psychological climate perceptions of *international students* that represent different nationalities/cultures.
- A focus on how iClass technology addresses learning styles,
- A focus on the co-cultural (demographic) variables.....
Questions to Ponder......

**Situation:**
- Paradigm shift in learning and teaching,
- Learning is different; requires teaching (pedagogy) to be different or vice versa.

**QUESTIONS:**
- Is learning “better”? *Some say, “not really; its just different”*
  - How do we actually measure “better”? What are the criteria?
- Can we cater to the different learning styles?
- Do we as faculty have the ability to use the technology in a way that adequately improves learning? What are they?
QUESTIONS/COMMENTS?