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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)
iClass Research GOALS

- 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
  - 1<sup>st</sup>..SMART board,
  - 2<sup>nd</sup> Internet access and Blackboard Course Website
  - 3<sup>rd</sup> 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,
iClass Study Conclusion, cont’d

- 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?