Design Culture, Immersion, and Viso-Spatial Learning: Enhancing Transfer of Training

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Student Project Showcase
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OVERVIEW of today’s talk:

Module 1, ICNY Initiative
Module 2, Research gap & questions
Module 3, Method and results to date
Module 4, Contributions, implications, & discussion
Module ONE
ICNY is an experiential learning student competition that generates and transforms novel ideas into actions and greater quality of life in our communities.

- **Topics**: Community challenge identified by program leaders each year
- **Students**: SUNY Poly and
  - Our partner institutions
  - Diverse disciplines, levels, life experiences, etc.
- **Method**: Collaborative design approach developed and used by Architects, designers, and urban planners

\[ I^3 \ldots \]

Innovation = \( f(Immersion + Ideation) \)
Phase one: Phenomenon Comprehensive

Participants deeply researched and individually gathered field information about the topic: SITE TOURS, EXPERT SPEED DATING

Phase two: Core Ideation Process

Students experienced intense exposure to DI and NE by working in assigned teams. They participated in structured and time-bound IDEATIONAL activities arranged into five modules: (1) Teaming and Discovery; (2) People, Needs, and Paradox; (3) Ideation & Prototyping; (4) Value & Sustainability; and (5) Communication & Evaluation.

Phase three: Integrative Reflection

Allowed participants to REFLECT upon their overall experiences.

Design Culture Treatment

Unstructured problem with unknown outcome requires comfortable, collaborative, structured process

Distinctions and Benefits:

All >> Effort (system 2 vs. system 1)

P1 >> Deep understanding BEFORE Ideation

P2 >> Focus on assisting others (vs. self-gain)

P2 >> Contributions from ALL team members (reduced coordination costs)

P3 >> Repetition = “Make it stick”
anecdotal evidence

ENGAGED
MORE COLLABORATIVE
Would you recommend to your friends and colleagues that they participate in future iterations of the InnovationChallenge event?

93% “Yes”  (n = 143, post only)

How much have you been personally transformed by your participation in the InnovationChallenge?

60% “Much” and “Very Much”  (n = 143, post only)
Module TWO
Why this research
Transfer of Training: The effective transfer of the behaviors and successful performance learned in training settings to the actual work setting …

Scholars have long identified transfer of training is an important component in the model of training and development (Cascio, 2016: 287).

This phenomenon refers to the extent to which competencies learned in training can be applied on the job (Burke & Hutchins, 2008; Machin, 2002).
GAPS / ToT literature:

1. Researchers have identified several problems that have not yet been fully overcome (Cheng & Hampson, 2008).

2. These include training and post-training work environments that foster weak relevance for practice and, thus, fail to stimulate motivation (Liebermann & Hoffmann, 2008);

3. As well as environments that de-situate learning and, thus, fail to foster engagement (Cheng & Hampson, 2008).

Given student response to ICNY, could design culture offer insight?
RESEARCH Question

What are the dimensions of the ICNY immersion and ideation processes that might be useful for enhancing transfer of training?
What does the relevant literature tell us?
Classical Assumptions:
1. Training improves required abilities
2. Rewards incentivizes and motivate

Performance = $f(Ability + Motivation)$

Classical FRAMEWORK
Literature TOT

Self-efficacy Factors
- Effortful
- Motivation
- Entrepreneurship

Comprehension and Retention Factors
- Applied and Relevant
- Prompting
- Schema & Script
- Diversity of Context
- Hierarchy of Information

Learning Challenges
- Negative Transfer
- Barriers & De-situate

Situational and Contextual Factors
- Collaboration
- Transfer Environment
- Peer & Organizational Support
- Firm Performance

Analogical & Abductive Reasoning

Factors
- Entrepreneurship
- Effortful
- Motivation

Diversity of Context
Hierarchy of Information

Applied and Relevant

Soft & Hard Skills

Learning Challenges

Self-efficacy Factors

Situational and Contextual Factors

Factors

Analogical & Abductive Reasoning

Self-efficacy Factors

Comprehension and Retention Factors

Learning Challenges

Situational and Contextual Factors
Module THREE
What are the method & results to date
Empirical QUALITATIVE SURVEY OPEN-ENDED QUESTIONS:
We explore qualitative feedback from a series of ICNY events that use design culture pedagogy to teach collaborative design processes.

a priori code book for text analysis ...
IBM SPSS text analysis
(text analytics software)
<table>
<thead>
<tr>
<th>Code</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>Refers to community involvement, caring about multiple and diverse stakeholders, and a sense that individuals can be part of change and can make a positive difference in communities.</td>
</tr>
<tr>
<td>Team</td>
<td>Includes various aspects of being associated with a positive team experience, having positive interpersonal involvement, and positive, supportive interactions with new and diverse people.</td>
</tr>
<tr>
<td>Action</td>
<td>Is about the excitement, fun action associated with “doing”, quick and focused pace of activities, being involved with a competition, and being incentivized by the hopes of winning and making contributions.</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>Captures the feeling of high self-confidence and “I can do it” individually and “we can do it” collaboratively with others.</td>
</tr>
<tr>
<td>Design</td>
<td>Is the use of novel and different methods and real materials for addressing complex phenomena and generating multiple ideas. This includes using structured processes to both frame then solve problems, visual methods, prototyping, postit notes, and physical “real” materials all of which have not been traditionally associated with business education.</td>
</tr>
<tr>
<td>Transformational</td>
<td>Is a sense of individuals communicating that they have been personally, deeply, and positively transformed by participation in ICNY.</td>
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<tr>
<td>Immersion</td>
<td>Captures the notion that learning to identify hidden assumptions then actively working “in the field” to collect information that will prove or disprove assumptions is valuable when aiming to understand complex phenomena. Rigorous immersion helps to avoid generating solutions before phenomena or situations are deeply understood and can be framed. This also refers to “bright spotting” or actively investigating situations in search of the conditions under which positive human experiences are predicted or possible.</td>
</tr>
<tr>
<td>Motivation</td>
<td>Is to apply effort, willingness or desire to an activity, course, or direction. Something that incites or has a tendency to incite to action. Terms include: boost, encouragement, impetus, incentive, incitation, incitement, instigation, momentum, impulse, provocation, spur, stimulant, and stimulus.</td>
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Preliminary Results (coding)

Natural Language Processing

Category Extraction

A Priori Code Book

IBM SPSS Modeler V18.1

**Team**

Includes various aspects of being associated with a positive team experience, having positive interpersonal involvement, and positive, supportive interactions with new and diverse people.

**Design**

Is the use of novel and different methods and real materials for addressing complex phenomena and generating multiple ideas. This includes using structured processes to both frame then solve problems, visual methods, prototyping, postit notes, and physical “real” materials all of which have not been traditionally associated with business education.
Preliminary Results (coding)

Natural Language Processing – Category Extraction
Emergent Codes
IBM SPSS Modeler V18.1

Rank
- Human Resources challenges, skills, knowledge, benefits, time management, communication [HUMAN DEVELOPMENT]
- Ideas quantity, good, novel, great useful, variety, creative [IDEAS]
- Working collaboration, communication, team work, listening [WORKING]
- Time limits, constraints, frames, hurried [TIME]
- Office Workers team members, strengths, weaknesses, winning, dynamics [ORGANIZATIONAL TEAMS]
- Academics students, facilities, research, group diversity, facilitation [COMMUNITY]
- Solution generation, collective, creation, prototype, combined [RESULTS]
- Group people, strangers, relationships, diversity [GROUP]
### Preliminary Results (coding)

#### Emergent categories and sub categories

<table>
<thead>
<tr>
<th>Human Development</th>
<th>Interprete storyboard</th>
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<tr>
<td>challenges, skills, knowledge, benefits, time management, communication</td>
<td>- we are developing as humans</td>
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<tr>
<th>Working</th>
<th>- by collaborating with others</th>
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<td>collaboration, communication, team work, listening</td>
<td>to quickly</td>
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<th>Group</th>
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<td>people, strangers, relationships, diversity</td>
<td>- generate many novel ideas</td>
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<th>Organizational teams</th>
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<td>team members, strengths, weaknesses, winning, dynamics</td>
<td>- that positively impact and serve our community</td>
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### next phase – analyze each question as separate variable

### Natural Language Processing – Category Extraction

**Emergent Codes**

IBM SPSS Modeler V18.1
Module FOUR
What are the implications
1. Training is a significant expense to organizations and a waste of resources.
2. A literature review suggested that a transfer problem still exists.
3. Data from our design culture treatment suggests that participants experience involvement, increases in self-efficacy, community, and transformation.
4. A new model of transfer of training is proposed in which elements of design culture are incorporated into organizational training.

Contributions
“Thank you!”