OPERATIONALIZING CREATIVITY

Desired Characteristics for Instructional Designers

Presentation of Doctoral Research
D. Clark - 02.10.15

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ABOUT THE RESEARCHER

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MOTIVATING EXPERIENCE

Why are we unable to find (and hire) the Instructional Designers that we need?

BACKGROUND

Definitions

Instructional Design: Is the practice of creating efficient and effective instructional experiences (Merrill et al., 1966).

Instructional Designer (ID): An instructional designer invents, conceptualizes, or creates educational products or materials and is responsible for the pedagogical aspects of those creations (Visscher-Voerman, 1999).
As available technologies and emerging pedagogies continue to redefine the learning environment in Higher Education, the role of the instructional designer has evolved to meet the escalating need for flexible, innovative curricula.

The rote, step-by-step adherence to systematic models such as ADDIE (Analyze, Design, Develop, Implement, Evaluate) is being replaced by more creative, heuristic approaches that provide the designer a wide range of latitude in solving the complex and ill-structured problems inherent to the field (Clinton & Hokanson, 2012).
**RESEARCH QUESTIONS**

1. What literature-based creativity related constructs are manifest in the context of practice of higher education instructional designers?

2. What specific competencies exemplify desired creativity-related knowledge, skills, and abilities for instructional designers in higher education?

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**CONCEPTUAL FRAMEWORK**

[Diagram showing the conceptual framework of the study]

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Operationalizing Creativity: Desired Characteristics for Instructional Designers  
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LITERATURE REVIEW PERSPECTIVES

1. The Evolution of the Instructional Designer
2. Emerging Pedagogies
3. Creativity
4. Other Creativity-related Constructs
5. Situated Creativity (creativity in the workplace).

THEMES EMERGING FROM LIT REVIEW

Deconstructed Creativity
1. Problem Solving
2. Problem Finding
3. Boundary Awareness
4. The Creative Act (Ideation through Innovation)
5. Disposition(s)
6. The Ambiguity Tolerance Continuum
7. Motivations/ Intrinsic Rewards
**Research Design**

(Modified) Delphi Process
- **Flexibility and Adaptability**
- **Present and Future State of a Specific Context**
- **Useful when there is an Incomplete State of Knowledge**

Purposeful/Snowball Sample
- **Validity is Established via Expertise**
- **Takes Advantage of Personal Networks**
- **Useful for Collecting Expert Opinion that would be Otherwise be Difficult to Obtain**

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**Nominee Criteria**

1. Nominees are senior instructional designers, instructional design directors, distance education directors, or directors of centers for teaching and learning (or equivalents) who are directly responsible for managing, recruiting, and hiring instructional designers.

2. Nominees will have demonstrated experience (at least five years) and expertise in the field (as evidenced by membership/participation in national professional organizations/conferences, publications, academic research, etc.).
RESEARCH DESIGN

3-Round Delphi Process to Explore Research Question #1
1. What literature-based creativity related constructs are manifest in the context of practice of higher education instructional designers?

Additional Desirability/Validity Assessment of Suggested Creativity-related Competencies to Explore Research Question #2
2. What specific competencies exemplify desired creativity-related knowledge, skills, and abilities for instructional designers in higher education?

INSTRUMENT DESIGN

Literature-Based Constructs by Creativity Theme
1. Problem Solving
   1. systems approach (Gordon & Zemke, 2000)
   2. heuristics (York & Ertmer, 2011)
   3. wicked problems (Valentine & Ivey, 2008)

2. Problem Finding
   1. problem finding/identification (Torrance, 1993)
   2. escaping assumptions (Mitchell, Inouye, & Blumenthal, 2003)
   3. problem finding/navigation (Ericsson, Roaring, & Nandagopal, 2007)
INSTRUMENT DESIGN

Literature-Based Constructs by Creativity Theme

3. Boundary Awareness
   1. *contextual awareness/ boundaries* (Csikszentmihalyi, in Sternberg, 1999)
   2. *contextual awareness/ role* (Amabile et al., 2004)

4. The Creative Act (Ideation through Innovation)
   1. *ideation* (Akinboye in Ogoemeka, 2011)
   2. *Invention* (Dasgupta, 1996)
   3. *remixing* (York & Ertmer, 2011)
   4. *connections* (Valentine & Ivey, 2008)
   5. *innovation* (Weisberg, 2006)
5. Disposition(s)
   1. flexibility (Baum and Newbill, 2010)
   2. overcoming fear (Fields, 2012)
   3. iconoclasm (Hokanson, Miller, & Hooper, 2008)
   4. post-modernism (Visscher-Voerman & Gustafson, 2004)
   5. cooperative (Amabile, 1988)
   6. pragmatism (James, 1907)
   7. diversity/democracy of thought (Manke, 1999)

6. The Ambiguity Tolerance Continuum
   1. ambiguity intolerance (McClary, 2009)
   2. ambiguity tolerance/problems (MacDonald, 1970)
   3. ambiguity tolerance/tasks (Furnham & Ribchester, 1995)
   4. creative uncertainty (Langer, 1990)
**INSTRUMENT DESIGN**

*Literature-Based Constructs by Creativity Theme*

7. **Motivations/ Intrinsic Rewards**
   1. *intrinsic motivation* (Jaskyte and Kisieliene, 2006)
   4. *play* (Hokanson, Miller, & Hooper, 2008)
   5. *flow* (Csikszentmihalyi, 1996)
   6. *self-efficacy* (Bandura, 1977)

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**RESEARCH IMPLEMENTATION**

**Expert Panel Established**
- **28** Respondents

**Round 1 Survey Instrument**
- Likert Response to **33** Topic Statements of literature-based constructs [*Strongly Agree, Agree, Disagree, Strongly Disagree, No Judgment*]
- **33** open-ended rationale comments
- **Eight** open-ended suggest additional topic sentences
- **Eight** open-ended examples of instructional design tasks or duties [*to be used to address R. Q. #2]*
- **82** Total response prompts
RESEARCH IMPLEMENTATION

Consensus Metrics

5-Point Likert scale: Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1, and No Judgment = null.

- Statistical Consensus to Agree
  - Mean (M) response of $3.00$ or greater, AND Standard Deviation (SD) of less than $1.00$

- Statistical Consensus to Disagree
  - Response M of $2.00$ or less, AND SD of less than $1.00$

Consensus Metrics (continued)

- Percentage of Opinion to Agree/Disagree
  - $80\%$ of all respondents must agree OR $80\%$ must disagree
  - No Judgment responses included in this calculation.

• BOTH Statistical Consensus and Percentage of Opinion criteria must be met to establish consensus
RESEARCH IMPLEMENTATION

Round One Results
• 27 (96%) Respondents
• Panel Reached Consensus on 25 (76%) Items
• Consensus on five Items Considered ‘Weak’

Round Two Survey
• 20 Rd1 consensus items removed
• Nine non-consensus Rd1 items revised
• Four additional clarifying questions added
• Nine new items added per RD1 suggestions
• Four non-consensus RD1 items presented again following Delphi protocol
• 58 Total Response Prompts

Round Two Results
• 28 (100%) Respondents
• Panel reached consensus on 17 (68%) Items

Round Three
• Eight non-consensus RD2 Items presented again following Delphi protocol

Round Three, Part Two
• 27 creativity-related competencies developed from RD1 responses rated in terms of:
  • Desirability
  • Face Validity (as creativity-related)
• 73 Total Response Prompts
**Research Implementation**

Round Three, Part One Results
- 24 (86%) Respondents
- Panel reached consensus on one (12%) Item

Round Three, Part Two Results
- 24 (86%) Respondents
- 27 Creativity-related Competencies Rated in Terms of:
  - Desirability
  - Face Validity (as Creativity-related)

**Research Findings**

In all, over 3000 points of quantitative data and nearly 1000 open-ended responses were collected, organized, and analyzed.
Quantitative Delphi Data Analysis

- Analyzed as one data set
- Consensus reached on 44 of 66 (67%) topic statement iterations
- Consensus reached on 35 of 41 (85%) discrete constructs
- Non-consensus Items by Theme:
  - [0] Problem Solving, Problem Finding
  - [0*] Ambiguity Tolerance
  - [1] Boundary Awareness, Creative Act, and Dispositions
  - [3] Intrinsic Motivations and Rewards

Consensus Items (Unique Concepts) by Creativity Theme

Problem Solving

To be successful, Higher Education Instructional Designers must...

[1A] work ONLY within the bounds of a prescribed, systematic, design process (consensus to disagree).
**RESEARCH FINDINGS (DELPHI/QUANTITATIVE)**

*Consensus Items (Unique Concepts) by Creativity Theme*

**Problem Finding**

*To be successful, Higher Education Instructional Designers must...*

[4] identify problems, deficiencies, gaps in knowledge, and omissions in a given situation.

[5] be able to distinguish between actual constraints and perceived constraints of a problem.


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**Boundary Awareness**

*To be successful, Higher Education Instructional Designers must...*

[7A] recognize their operational boundaries (e.g. context, constraints, and accountabilities).

[8] recognize their role within the organization.

[8A] establish a personal “culture of creativity” through relationships, communication, and comportment (e.g. honesty, patience, resilience).
RESEARCH FINDINGS (DELPHI/QUANTITATIVE)

Consensus Items (Unique Concepts) by Creativity Theme

Boundary Awareness (continued)

To be successful, Higher Education Instructional Designers must...

[9A] Within the context of a project, Higher Education Instructional Designers must recognize when creative activities are appropriate (i.e. warranted, practicable) and when they are not.

[9C] demonstrate elements of creativity in their communication and collaboration with stakeholders.

[10A] balance creative activities with the constraints of a given project.

The Creative Act

To be successful, Higher Education Instructional Designers must...

[12B] be capable of creating original (novel) models, strategies, or approaches to solve instructional problems.


[14] identify connections between elements previously considered disparate.
RESEARCH FINDINGS (DELPHI/QUANTITATIVE)

Consensus Items (Unique Concepts) by Creativity Theme

The Creative Act (continued)

To be successful, Higher Education Instructional Designers must...

[14A] establish “Dynamic Expertise” by continuously integrating emerging trends with a strong historical perspective (i.e. be fully conversant in a variety of educational theories, practices, and approaches, both old and new).


Creative Dispositions

Successful Higher Education Instructional Designers are...

[16] comfortable engaging with a variety of tasks and interactions.

[17] confident in their abilities.

[18] willing to risk exposure embarrassment or censure to propose new ideas.

[19] willing to continuously question underlying assumptions of established practice.
RESEARCH FINDINGS (DELPHI/QUANTITATIVE)

Consensus Items (Unique Concepts) by Creativity Theme

Creative Dispositions (continued)

Successful Higher Education Instructional Designers are...

[20] devotees to current industry best practices only (consensus to disagree).
[21] comfortable surrendering ownership of creative works.
[22] willing to suppress their ego for the good of the endeavor.
[23] empathetic to multiple perspectives.

To be successful, Higher Education Instructional Designers must...

[23A] actively seek multiple viewpoints (when appropriate relative to the constraints of a project).
[23B] integrate suggestions and feedback from others.
**RESEARCH FINDINGS (DELPHI/QUANTITATIVE)**

*Consensus Items (Unique Concepts) by Creativity Theme*

**The Ambiguity Tolerance Continuum**

*Successful Higher Education Instructional Designers...*

- [24] completely avoid ill-defined problems (consensus to disagree).
- [26] can operate effectively despite unspecific or incomplete direction.
- [27] embrace ambiguity as an empowering opportunity.

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**Intrinsic Motivations and Rewards**

*Successful Higher Education Instructional Designers...*

- [28] believe that their creative efforts are making a difference.
- [30] are passionate about their work.
- [33A] view engaging with difficult tasks as something to be embraced rather than something to be avoided.
- [34] are life-long learners.
Performance-Importance Analysis on Creativity Competencies

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RESEARCH FINDINGS (QUALITATIVE)

Qualitative Data Analysis

- Open, Focused, and Axial Coding techniques applied to identify constructs, themes, and relationships
- Responses analyzed both in situ and as a single generic data set
- Noteworthy/Illustrative Comments structure used to indicate both centrist and outlier positions.
- Conclusions to follow...

CONCLUSIONS (SUGGESTED BY QUANTITATIVE/DELPHI DATA)

Evidence of correlation between creativity and ID.
- Consensus reached on over 85% of the 41 discrete constructs
- Consensus Reached on two-thirds of Topic Statement iterations

Evidence of Preference for ‘Applied’ Creativity
- Commonality of the six non-consensus concepts (9B, 11, 19A, 29, 31, 32)
CONCLUSIONS (SUGGESTED BY QUALITATIVE DATA)

Higher Education Instructional Design is a Field in Evolution
• Systems/ Best Practices/ Tradition

Organizational Context is Important
• Reporting Lines/ Funding/ Ownership

Strong Desire for Applied Creativity
• Obligation to remain accountable

Creative Interaction/ Collaboration
• With Client/ With Peers

CONCLUSIONS (SUGGESTED BY P-I ANALYSIS)

Desirable Creativity-related ID Competencies

Higher Education Instructional Designers...
1. Identify opportunities for creativity (i.e. existing constraints and empowering ambiguity) within the overall scope of a project or problem assigned to them.
2. Tailor their planned creative activities to the scope and constraints of a project.
3. Engage in continuous reflection and assessment and exploit new creative opportunities that arise as the project evolves.
4. Maximize efficiency through creative use/ reuse of available resources.
CONCLUSIONS (SUGGESTED BY P-I ANALYSIS)

Desirable Creativity-related ID Competencies (continued)

Higher Education Instructional Designers...

5. Ascertain client disposition toward creativity and communication/interaction preferences, and adjust one’s collaboration strategies accordingly.

6. Effectively communicate/articulate creative/atypical idea

7. Demonstrate a demeanor supportive of collaborative creativity (e.g. flexibility, honesty, patience, resilience, modesty, diplomacy, tact).

8. Engage in active listening: find value in other’s ideas.

9. Recognize how one’s work affects others. (e.g. balance proactive autonomy and the collaborative team dynamic).

10. Seek to continuously integrate new knowledge and new approaches with personal practices.

11. Recognize/leverage “affordances” related to new technologies; seek opportunities to align instructional theories/practices with new technologies.
SO WHAT?

Meaningful Additions to the Body of Literature

- Study tied Higher Education Instructional Design competencies directly to broad-based creativity literature
- Study identified a set of specific creativity-related Instructional Design competencies that could be useful to managers and leaders for hiring, recruitment, performance review assessment, and professional development purposes.

NOW WHAT?

Recommendations for Additional Study

- Context-specific Longitudinal Research
  - More in-depth examination of various Higher Education contexts as identified in this study
  - Examination of generalizability outside of Higher Education
  - Study correlating responses to education/experience of ID leader
- Exploration of specific recruitment and Hiring Practices Related to Creativity-related Competencies.
OPERATIONALIZING CREATIVITY: DESIRED CHARACTERISTICS FOR INSTRUCTIONAL DESIGNERS

Thank You.

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...innovation swims upstream in the river of status quo
- Mary Cullinane

REFERENCES


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