WHAT IS NOVEL AND USEFUL IN EDUCATIONAL BEST PRACTICE?

Systematic Reviews of Creativity Research

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Session Objective

Synthesize lessons learned from systematic reviews focused on creativity performance outcomes, creativity assessment practices, and teacher beliefs about creativity that increase or inhibit the creative performance of students.
Why Systematic Reviews?

To Bridge the Research and Practice Gap

• Systematic reviews aim to analyze existing data across multiple studies, using explicit, accountable, rigorous research methods (Gough, Oliver, & Thomas, 2017)
• Results and discussion are accessible to a broader audience than academic researchers
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
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</table>
Research Foci

**Creativity as a Construct**
- **Definition** (Kupers et al., 2019)
- **Measurement** (Said-Metwaly, 2017)

**K-12 Teacher Beliefs and Perceptions**
- (Berckzki and Karpati, 2018)
- (Mullet et al., 2016)

**Fostering Creativity**
- **Pedagogical Environment** (Davies et al., 2013)
- **Art and Studio Design** (Sawyer, 2017)
- **Techniques** (Leopoldino et al. 2017)
Summary Chart of Systematic Review

<table>
<thead>
<tr>
<th>Citation</th>
<th>Topic</th>
<th>n</th>
<th>Inclusion criteria</th>
<th>Research aims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawyer, R. K. (2017)</td>
<td>Teaching creativity in art and design studio classes: A systematic literature review. Educational Research Review, 22, 99-113.</td>
<td>65</td>
<td>- Peer reviewed journal article published in English</td>
<td>To contribute to our understanding of teaching and learning for creativity, by analyzing and synthesizing empirical studies of the pedagogy used in art classes and design classes.</td>
</tr>
<tr>
<td></td>
<td>Pedagogy used in art and design studio classes</td>
<td>HE = 45 K-12 = 18 Art = 23 Design = 36 Art &amp; design = 6</td>
<td>- Empirical studies relevant to topic (qualitative and quantitative)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- K-12 and higher education</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>- Any country</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Date range: 1980 - 2016</td>
<td></td>
</tr>
</tbody>
</table>

Search terms

In title: pedagogy OR teach OR project OR practice OR learn OR teaching OR learning OR projects
“art teaching” and “art studio” and “art education”
“design teaching” and “design studio” and “design education”


- K-12 studies contained more art-focused articles than design, while the opposite occurred in the HE studies
- Pedagogical practice (36 papers)
  - Constructivist, open-ended, learner-centered approach where students are active, reflective, and allowed to take risks and experiment, and teacher acts as a facilitator
  - Teaching paradox: providing students with open-ended assignments and an appropriate level of structure
- Learning outcomes (21 papers)
  - The creative process is the primary learning outcome in both art and design education, and yet there was a lack of K-12 studies focusing on this outcome
  - Studies also found non-cognitive and personality outcomes, but learning outcomes are not explicit to students
  - Teachers may struggle to balance teaching lower-level technical skills vs. higher-level abilities
- Assessment (9 papers)
  - Critique: formative assessments where teacher offers feedback (may feel be stressful, competitive, and unsafe to students)
  - Rubrics also mentioned in studies [teachers had mixed feelings about using these]
PRISMA Flow Diagram

(Moher et al. 2009)

Diagram from Gough et al. (2017)
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Creativity as a construct

Theory

- General consensus
- Creativity delineated through the four P's
  (Kupers et al., 2019; Said-Metwaly et al., 2017)

Measurement

- Measure used indicates researcher's definition of construct
  (Kupers et al., 2019; Said-Metwaly et al., 2017)

Limitations

- Heavy reliance on instruments that measure creativity based on a product at single point in time (Kupers et al., 2019)
- Instruments focused on the process perspective raised validity and bias concerns (Said-Metwaly et al., 2017)
K-12 teacher beliefs and perceptions of creativity

(Berczki and Karpati, 2018; Mullet et al., 2016)

- n=53 | only 6 articles overlapped in the two reviews

Results

- Few teachers view creativity as innate
- Many teachers associate creativity with art or intelligence
- Teachers struggle to define creativity, have misconceptions about creativity, and therefore, are uncertain how to measure it or how to identify it in students
Fostering creativity

In the learning environment (Davies et al., 2013; Sawyer, 2017)
- No overlapping articles \( n = 58 \) \( n = 65 \)
- Similar conclusions from both reviews

Results
- Teaching paradox
- Best practices
- Student-teacher relationships matter

- risk taking
- authentic real-world projects
- play
- allow mistakes
- student choice
- safe environment
- learner-centered
- flexible and adaptive curriculum
- available resources
- technology
Fostering creativity

Creativity Techniques (Leopoldino et al., 2017)

Table 1. Most cited creativity techniques.

<table>
<thead>
<tr>
<th>CREATIVITY TECHNIQUES</th>
<th>AUTHOR</th>
<th>NUMBER OF CITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storyboarding</td>
<td>Vance (1982)</td>
<td>2</td>
</tr>
<tr>
<td>Morphological Analysis</td>
<td>Zwicky (1969)</td>
<td>3</td>
</tr>
<tr>
<td>Lateral Thinking</td>
<td>De Bono (1970)</td>
<td>4</td>
</tr>
<tr>
<td>TRIZ</td>
<td>Altshuller (1984)</td>
<td>5</td>
</tr>
<tr>
<td>Six Thinking Hats</td>
<td>De Bono (1970)</td>
<td>5</td>
</tr>
<tr>
<td>Force field analysis</td>
<td>Lewin (1947)</td>
<td>5</td>
</tr>
<tr>
<td>Synectics</td>
<td>Gordon (1961)</td>
<td>13</td>
</tr>
<tr>
<td>Brainstorming</td>
<td>Osborn (1963)</td>
<td>23</td>
</tr>
<tr>
<td>Brainwriting</td>
<td>Rohrbach (1969)</td>
<td>28</td>
</tr>
</tbody>
</table>
Barriers that hinder creativity

<table>
<thead>
<tr>
<th>Focus on standardized testing</th>
<th>(Berckzki and Karpati, 2018)</th>
<th>(Davies et al., 2013)</th>
<th>(Mullet et al., 2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of teacher training</td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
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<tr>
<td>Overloaded curriculum</td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
</tr>
<tr>
<td>School environment</td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
</tr>
</tbody>
</table>
Thank you!

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VISIT US ONLINE
https://ualr.edu/gifted/
References