The Teaching for Transformative Experiences in Science Model

ARTISTIC SELECTION AND CRAFTING OF CONTENT

Select Content Worth Teaching

1. Select Big Ideas
   - Select core disciplinary and crosscutting ideas with broad explanatory power.

2. Select Ideas with Powerful Affordances
   - Select ideas that are particularly relevant to the everyday lives and cultural experiences of your unique group of students.

3. Select Ideas in The Deweyan Sense of The Term
   - Select ideas that generate anticipation and carry students forward into new ways of seeing and experiencing the world.
   - Select ideas that contain a seed of wonder and the sublime.

Craft Content as Ideas

1. Use Anticipation and Experiential Value Statements
   - Make statements that create anticipation about acting on or trying out an idea.
   - Make statements that emphasize the value the content has in students’ immediate, everyday experience.

2. Emphasize “Having the Journey”
   - Frame the purpose of learning as enrichment of everyday experience.

3. Present Compelling Metaphors
   - Use metaphors to frame content as compelling possibilities.

4. Restore Concepts to the Experience in Which They Had Their Origin and Significance
   - Reinvigorate concepts as ideas by helping students appreciate the original significance and transformative consequences of the content.

5. Evoke a Sense of Wonder, Suspense, and the Sublime
   - Draw attention to what is wonder-ful, astonishing, perplexing, surprising, extreme, unsettling, and awe-inspiring about the content.
   - Use other dramatic techniques such as foreshadowing, allowing a story to unfold, and provoking imagination.

EXPERIENTIAL APPRENTICESHIP

Model Transformative Engagement

1. Share Your Own Transformative Experiences
   - Share simple, everyday experiences of seeing the world through the lens of content you are teaching.
   - Share more dramatic/sublime experiences when the opportunity arises.
   - Seek to have transformative experiences with the content you are teaching.

2. Express Enthusiasm and Passion for the Content
   - Use expressive phrases (e.g., “this is so cool”) and body language.
   - Develop a passion for the content by talking to others and crafting the content as ideas.

3. Expose Students to Other Effective Models
   - Invite enthusiasts into your classroom.
   - Invite former students who engaged with the content back into your classroom.
   - Try to expose your students to culturally relevant models.

Scaffold Student Experience

1. Prompt Scientific Thinking, Perceiving, and Valuing Inside and Outside of School
   - Orient your students toward taking a science perspective.
   - Push your students’ thinking and perceiving.
   - Prompt your students to further engage in everyday life.
   - Validate your students’ interests and address their anxieties.

2. Hold Use-Change-Value (UCV) Conversations
• Allow your students to discuss and share how they have used course content in everyday life, how this content has changed their perception, and the value the content has brought to everyday objects, events, or issues.

3. Make Use of Boundary Crossing Objects
• Do science activities with objects that are culturally relevant and part of students’ everyday lives.
• Use mobile technology to bridge in-school and out-of-school experience.

Scaffold Re-seeing
1. Identify Re-Seeing Opportunities
• Help students identify objects, events, or issues in the world that can be re-seen through the lens of science content currently being studied.

2. Share Re-seeing Experiences
• Provide opportunities for students to share personal experiences of re-seeing.
• Help students deepen their re-seeing.

3. Utilize Real-World Updates
• Select ongoing events or issues that can be re-seen through the lens of science content currently being studied.
• Check in on these events or issues regularly (at least weekly).

4. Implement Experientially-Anchored instruction
• Identify experiences students are likely to have related to the content.
• Have students share personal experiences related to the content (strategy 2 above).
• Develop case studies out of the experiences shared.
• Use these case studies as curricular materials by having students research their own experiences.
• Have students develop products illustrating in-depth re-seeing of their experiences.
• Conduct follow-ups in which students have the opportunity to share and re-see new experiences.

DOING AND UNDERGOING
Put Students in the Role of Explorers
1. Engage Students in Inquiry
• Provide appropriately scaffolded opportunities for students to engage in genuine investigations of relevant science questions or problems.

2. Have Students Create
• Engage students in authentic projects in which students create things such as products, investigation tools, physical models, computer models, websites, and so on.

3. Try Out Service learning or Expeditionary Learning
• Have students learn science through service.
• Have students learn science as part of adventure experiences.

Create a Culture in which Students Feel Safe to “Surrender”
1. Teach and Foster Mindfulness
• Use mindfulness activities to clear and focus the mind.
• Use mindfulness activities to help student become fully aware.
• Use mindfulness activities to activate a flow state.

2. Establish a Mastery Goal Environment
• Promote a mastery goal orientation in your classroom.
• Promote a mastery goal orientation in your school.

3. Support Autonomous Motivation
• Promote a sense of autonomy.
• Promote a sense of competence.
• Promote a sense of belonging.