Torrance Incubation Model of Creative Teaching and Learning (TIM)

Academy of Digital Arts and Sciences Media and Arts Sequence
E. Paul Torrance, perhaps one of the most prominent scholars of creativity, conducted a variety of studies exploring the teaching and learning of creativity. His studies identified specific skills associated with creativity, and demonstrated success in the teaching of creativity through the Torrance Incubation Model of Creative Teaching and Learning (TIM) (Download Password ‘skills21’). Torrence’s work has laid the foundation to further studies in this topic, including a number of projects at The International Center for Studies in Creativity, at the University of Buffalo, NY.

The Torrance Incubation Model of Creative Teaching and Learning can be applied to a lesson, unit or project. The application of TIM and the identification of a specific creativity skill is an effective way to teach creativity, without impacting the teaching of core objectives or curriculum content. TIM, has three stages:

**Stage One, Heighten Anticipation**, is designed to adequately and mentally prepare the student (or students) for the project ahead. Torrance describes this as a ‘Warming Up Period’ with the following six functions, (1) Create the Desire to Know, (2) Heighten Anticipation and Expectation, (3) Get Attention, (4) Arouse Curiosity, (5) Tickle the Imagination, and (6) Give Purpose and Motivation.

**Stage Two, Deepen Expectations**, is where the problem is defined, applied, and the creativity is nurtured. A list of actions or metaphors communicate the development process. For example ‘Digging Deeper’ is an action that encourages students to go beyond the surface of the problem (identify the unknown), discover things that were missed, synthesize the information, and begin to come up with solutions and actions that can be applied to the project.

**Stage Three, Extend the Learning**, is another list of metaphors that encourages students to take the lead and apply the project in a real context to extend their learning. For example, ‘Building Sand Castles’ is a metaphor that challenges students to use their imagination and discover ways to extend the project to the real world.
Torrance Incubation Model of Creative Teaching and Learning (Download Poster - Password 'skills21')
The Torrance Incubation Model (TIM) ‘Modified Model’

**Stage One: Heightening Anticipation**
- Create the Desire to Know
- Heighten Anticipation and Expectation
- Get Attention
- Arouse Curiosity
- Tickle the Imagination
- Give Purpose and Motivation

**Stage Two: Deepening Understanding**
- Digging Deeper
- Looking Twice
- Listening for Smells
- Listening/Talking to a Cat of Crossing Out Mistakes
- Cutting Holes to See Through
- Cutting Corners
- Getting in Deep Water

**Stage Three: Extending the Learning**
- Having a Ball
- Singing in One’s Own
- Building Sand Castles
- Plugging in the Sun
- Shaking Hands With Tomorrow
Through his studies Torrance identified specific behaviors associated with those that demonstrated creative accomplishments. These behaviors were characterized into three elements, *Ability, Skill,* and *Motivation,* and helped form the foundations of the Torrance Tests of Creative Thinking (TTCT). ([A News Week article highlighted the success of these tests in predicting creative behavior and future success](https://www.newsweek.com/torrance-tests-of-creative-thinking-2011)).

Torrance’s studies documented success in teaching creativity when these skills were taught. As part of the Torrance Incubation Model of Creative Teaching and Learning, one creative skill must be identified and taught during the implementation of the class, unit or project. While it may be possible to teach more then one skill, Torrance believed that there was more value and success focusing exclusively on one, rather then a variety.

In a project-based learning environment, the teaching and application of creativity skills can be achieved through the production process and evaluated through observation and reference to a rubric. An identified skill can be purposely weaved into the three stages of the Torrance Incubation Model.
Get Glimpses of the future:
predict, imagine and explore things that do not yet exist; wonder and dream about possibilities; view events as open-ended.

Produce and Consider Many Alternatives: fluency; amount; generating many and varied ideas.

Elaborate-But Not Excessively: adding details or ideas-developing them; filling in the easiest, quickest way.

Be Aware of Emotions: recognizing verbal and nonverbal cues; responding, trusting and using feelings to better understand people and situations.

Enjoy and Use Fantasy: imagine, play and consider things that are not concrete or do not yet exist.

Let Humor Flow and Use It: perceiving incongruity; responding to a surprise; recognizing and responding to perceptual and conceptual discrepancies.

Be Original: moving away from the obvious; breaking away from the habit bound thinking; statistically infrequent responses; the ability to create novel, different or unusual perspectives.

Visualize the Inside: paying attention to the internal dynamic workings of things; picturing or describing the inside of things.

Be Aware of Emotions: recognizing verbal and nonverbal cues; responding, trusting and using feelings to better understand people and situations.

Highlight the Essence: identifying what is the most important and absolutely essential; discarding erroneous or relevant information; refining are dealers, abandoning unpromising information; allowing a single problem or idea to become dominant and synthesizing all of this at the same time.

Combine and Synthesize: making new connections with the elements within our perceptual set; combining relatively unrelated elements; hitchhiking; making the familiar strange and the strange familiar.

Look at it Another Way: being able to see things from a different visual perspective; being able to see things from a different psychological perspective or mindset.

Put Your Ideas in Context: putting parts of experience into a bigger framework; putting experiences together in a meaningful way; making connection between things; giving situations and ideas a history, and background, a story.

Breakthrough-Expand the Boundaries: thinking outside prescribed requirements; changing the paradigm or system within which a problem resides.

Make It Swing! Make It Ring!: using kinesthetic and auditory senses; responding to sound and movement.
Applying the Torrance Incubation Model of Creative Teaching and Learning (TIM) to the Digital Media and Movie Making Project
How can digital media and movie making be used to educate, entertain, and communicate in a way comparable to, or better than, the traditional media formats of the past? How can digital media and movie making be used to develop and nurture creativity skills and specialized interests? The Digital Media and Movie Making (DM3) course develops digital media literacy, animation and storytelling skills that increase student knowledge of digital media careers with a focus toward movie making. Students work in small teams to complete film projects that will be entered into the Connecticut Student Film Festival.

The Digital Media and Movie Making course has successfully tripled its content and significantly improved the technical literacy of submissions during its first three years. Unfortunately, it has had less success in merging technical literacy with creativity. While some submissions each year can be considered creative, the majority rarely go above expectations, or engage students in the content being explored and communicated.

Submissions to the Connecticut Student Film Festival explore ‘Themes’ that challenge students to identify and investigate 21st Century problems, and how these problems relate to their local community. These themes are explored and communicated during movie making projects, and have often been signified by students and teachers as the reasoning for a lack of creativity. Themes such as ‘Environmental’ or ‘Sustainability’ have been considered boring, not engaging, and too restrictive in approach to story development.

It's challenging to understand why topics so broad and diverse as ‘Environmental’ and ‘Sustainability’ are the reason for a lack of creativity, especially when each year there is some projects that are extremely engaging and creative. Why is this? It is more likely that the reason for a lack of creativity is associated with how students and teachers approach the theme.
The Digital Media and Movie Making course is delivered in a project-based, student-centered, blended-learning environment. Students focus on developing digital literacy skills and identifying individual interests during the first semester, that are then applied to group projects in the second.

While it is possible to apply TIM and teach creativity during the first semester, this proposal focuses on its application in the group project that takes place in the second semester.

This proposal makes the following assumptions at the conclusion of the first semester.

- That the teacher has conducted formative assessments during the first semester and has a record of the skills and interests of each student.
- That the students have been involved in the assessment process and have conducted a self-evaluation to identify a role for the second semester that they find engaging and appropriately challenging.
- That the students are literate and confident in the technology associated with their role and responsibility.
- That a student-centered, project-based learning environment has been established.
The following is an example of a DM3 assignment.

Dear Movie Maker,

In this assignment you will produce a Documentary Short targeted toward your local community. Your project should identify a question that is explored through a documentary project and relates to the theme ‘Sustainability’.

Below is an example question.

*How can young Americans demand real solutions towards a sustainable future? Can active participation in the democratic process, both locally and nationally, make a difference?*

Your film should demonstrate an in-depth understanding of your identified topic, and a proposed solution to the question explored.

In addition students are provided technical criteria related to length, b-roll, musical score and submission deadline.

**Example Submissions 2010**

- [Education for Change](#)
- [Green Challenge](#)
Creativity Skill Rubric Applied to Digital Media and Movie Making

This document has identified two creativity skills to be developed during the second semester of the Digital Media and Movie Making course. Skills will be nurtured during each stage of the Torrance Incubation Model for Teaching and Learning.

- **Produce and Consider Many Alternatives**, will be assessed during the production process. Teachers will conduct evaluations during brainstorming sessions, and discussions. Where this skill can be applied in each stage of TIM is indicated in **Orange**.

- **Highlight the Essence**, will be assessed through the production process and completed final projects. Where this skill can be applied in each stage of TIM is indicated in **Purple**.

<table>
<thead>
<tr>
<th>Skill</th>
<th>Exemplary</th>
<th>Competent</th>
<th>Emerging</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Produce and Consider Many Alternatives</strong>: fluency; amount; generating many and varied ideas.</td>
<td>Student generated a variety of ideas with ease and confidence. Ideas were relevant, original and of value to the project.</td>
<td>Student generated ideas. Ideas were relevant, but not always original or with added value to the project.</td>
<td>Student failed to generated and ideas. Ideas of value to the project. Few were relevant or original.</td>
<td>Generated ideas in discussion.</td>
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<tr>
<td><strong>Highlight the Essence</strong>: identifying what is the most important and absolutely essential; discarding erroneous or relevant information; refining are dealers, abandoning unpromising information; allowing a single problem or idea to become dominant and synthesizing all of this at the same time.</td>
<td>Student was able to quickly discard unworthy, or unrealistic ideas, while also identifying, integrating and developing ideas that added value to the project.</td>
<td>Student identified, developed and integrated ideas that added value to the project, but sometimes was unable to let go or recognize ideas that were not of value.</td>
<td>Student was able to apply existing ideas, but was unable to differentiate between those of value, and those not of value, to the project.</td>
<td>Demonstrated in discussion</td>
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Stage One: Heightening Anticipation

Create the Desire to Know
Students review and discuss documentary films related to the presented theme. Students visit theme related venues and conduct interviews with industry professionals via SKYPE.

Arouse Curiosity
Students conduct exploratory research related to the theme and fill large pieces of paper with questions that they found engaging or worthy of further exploration.

Heighten Anticipation and Expectation
Students review films from the previous year, and using rubrics, discuss and evaluate each film determining their successes and failures. Students then review assignments and rubrics for the current year, and engage in an early brainstorming session that is recorded on large pieces of paper. Teachers determine if assignments have been clearly understood.

Get Attention
Students develop a class calendar with reference to submission deadlines and the Connecticut Student Film Festival. Students write a list of objectives for the second semester that can be achieved through the final project.

Tickle the Imagination
Students establish a fun and free environment as they brainstorm ‘Crazy’ ideas that can be applied to the second semester.

Give Purpose and Motivation
Students work with teachers to identify roles and responsibilities that meet identified skills and interests. A production company is established and positions are assigned.
Stage Two: Deepening Understanding

Digging Deeper
Students conduct further research and are challenged to discover a new topic related to the theme. Students engage in a discussion and identify possible questions that could be developed into an engaging story.

Looking Twice and Listening for Smells
Students work in partners to conduct in-depth research of identified questions. Students evaluate information gathered during in-depth research of identified questions and begin to brainstorm ideas for a story.

Listening/Talking to a Cat or Crossing Out Mistakes
Students develop an outline for an identified story and deliver a two-minute presentation with ideas on how it would be filmed and communicated to the audience. Students are also challenged to pitch a ‘Crazy’ addition to the project. This idea does not have to be part of the film, but must relate to the project and theme.

Cutting Holes to See Through and Cutting Corners
Students must define the story and make a decision. Discarding any unneeded elements that have been determined are unattainable or little value to the story.

Getting in Deep Water
Identify people of interest that can add value for the story. Develop interview questions in order to establish a deeper understanding for your viewer and story.

Getting Out of Locked Doors
Develop a ‘Shot List’ for B-roll and brainstorm everything and anything that could appear in your film, discussing ‘Original’ ideas of how it could be filmed and communicated to the viewer.
Stage Three: Extending the Learning

Having a Ball
Students should make an attempt to save time during filming slots to implement ‘Crazy’ and ‘Spontaneous’ ideas capturing B-roll. For example, how many different ways can you film that wind turbine? During editing students can determine which one is creative and adds the best value to the project.

Building Sand Castles
Students should begin to think about promoting and communicating their film project to the local community. What can be implemented in the local community that relates to the problem/solution explored in the film? For example, if the film explores a local business that has made the switch to alternative energy - what can the student company do in the local community to encourage other business to do the same? What campaign materials can be develop to educate the local community about the problem/solution explored in the film? In other words, how can students apply an understanding of the content explored in the film, to their local community.

Plugging in the Sun
Students should develop a marketing campaign for the film. Students should consider hosting a premier ahead of the Connecticut Student Film Festival, and distributing marketing materials to the local community.

Shaking Hands With Tomorrow and Singing in One’s Own
Students conduct a self-reflection at the end of the second semester, evaluating skills and any new interests developed. Students explore current job openings and then develop a job descriptions for their perfect job referencing what they have learnt during the project. Students set new objectives for the 3D Modeling and Animation course and begin to brainstorm ideas for possible projects.
The creativity column below will be used to evaluate student creativity in the final product.

<table>
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| Creativity | The students documented a unique problem and solution that was original in comparison to previous submissions, and went beyond the ‘known’ surface of the presented theme.  
The students clearly conducted ‘in-depth’ research into a specific topic, that was successfully applied to a well defined story, communicating information that was new and of value to the local community.  
The film contained a variety of creative camera shots that demonstrated an advanced understanding of cinematography. B-roll was visually engaging, original, and of value to the information being communicated.  
The film was under five-minute in length and engaged, entertained and informed the audience throughout. | The students documented a problem and solution that was original in comparison to other submissions of that year, and avoided obvious stories related to the theme.  
The students demonstrated research that was applied to the story. The film contained ‘some’ new information that was relevant to the local community, but not always of value.  
The film contained one or two creative camera shots that demonstrated some understanding of cinematography. B-roll was of value to the information being communicated.  
The film was under five-minute in length and engaged, entertained and informed the audience, though not at all times. | The students documented a problem, but did not include a clear solution. The film was not original in comparison to films that year, and the story was an obvious choice in relation to the theme.  
The students demonstrated little research and the film did not communicate any new information that was of value or relevant to the local community.  
The film did not contain any visually engaging images, and demonstrated little understanding of cinematography. B-roll was not relevant to the information being communicated and was an obvious choice in how it was presented.  
The film was over five-minutes in length and did not entertain or engage the audience. |
TIM does not specify how long students should engage in each stage of the TIM process. Instead it is the decision of the teacher to determine how much time is spent on each stage, depending on the individual needs of the class or student. Activities in the TIM process can vary, and it is the decision of each program manager to identify which creativity skill will be nurtured during the project. It is a challenge to specifically ‘teach’ a creativity skill in a project-based learning environment. It is hoped, that with an identified skill, supported with a rubric, the teacher will be encouraged to facilitate opportunities where the skill can flourish, and be nurtured through formative feedback.

Students in the Digital Media and Movie Making course will also complete a lesson with an outcome of a class definition of creativity. The development of this definition should prompt a discussion about creativity and innovation. The definition should also be displayed in the class and under constant review. Visit TeachDigital.org to access an example lesson plan.

Please complete the survey