

# Teacher Pedagogies to Support Global Competencies:

## Inquiry, Creativity, Critical Thinking



Dr. Beverley Freedman  
[bevfreedman@iTeach.ca](mailto:bevfreedman@iTeach.ca)  
[@look2leaders](https://twitter.com/look2leaders)

## Teacher Pedagogies to Support Inquiry, Creativity, and Critical Thinking\*

These examples are evidence-based, and the OECD in their document refers to them as 'signature pedagogies'. They are 'pupil-centred' pedagogies designed to create, "a culture of intrinsic motivation, respectful relationships and quality dialogue" (OECD, 2019: 100). The tasks involve a *driving question* or an issue that are rich, with pupils working collaboratively in teams. The teacher's focus is on the discrete skills, knowledge and learning needed to allow the pupils to complete the task. Pupils need the time and space to complete the task. This is not a focus for a single lesson.

This is not an all-the-time or the only pedagogy. These pedagogies are added to the teacher's professional tool belt of approaches and integrated across subjects. They are frequently used to build pupils' skills, engagement and deeper knowledge of the global competencies.

**Design Thinking** is where pupils develop an innovative solution to a complex real-world problem by researching, create multiple solutions and select the most effective solution using criteria, including considerations of intended and unintended consequences. The skills that are developed throughout the study are below:

- Understanding and observing the problem;
- Consolidating or synthesising the information, including defining the problem and the context;
- Ideation or generating possible ideas and solutions;
- Prototyping or experimenting and developing tangible solutions, products;
- Testing the possible prototypes;
- Iteration by reflection on the various phases and seeking new questions as a result of the new learning

\*(OECD, 2019: 100-126)

## OECD Repository of Lesson Plans for Creativity and Critical Thinking:

<https://www.oecd.org/education/fostering-students-creativity-and-critical-thinking-62212c37-en.htm>

If you click on the link above, some of these already have lesson plans and some are new provocations.

### Some suggested Topics

- My region past and future
- Mathematics for new Taj Mahal
- Create a design for a new Nobel Peace Building in Oslo
- What controls my Health? How can I/we be healthier?
- What can we do to improve our school? Our play area? Our municipal transit? Shopping area?
- How can we become more sustainable?
- How can we design SMART clothes?
- What if we could have meaningful communication with another species (Project CETI)? What should we communicate and why?
- How can we welcome and support refugees into our region?
- Why should be the most important sustainable development goal for 2030?
- How to design a playground, football field, hockey rink to be more inclusive
- Curate your own museum
- Who are the top ten Norwegians of all times? Why –justify your selection.
- When is a mammal not a mammal?
- The CETI project is beginning communication with whales. What should that communication be?
- What are the three top issues/problems in our municipality, region, and country? Pick one, justify why you selected that one, and develop possible solutions to present
- Create a movie score for your favourite poem or song

If you created an online game to build social justice, what would it be

When thinking about using this pedagogy, teachers are invited to make the task more interdisciplinary. Teachers can therefore focus on the discrete skills and knowledge required in completing the task. Also important is ensuring that tasks involve more than one pupil and that pupils should move from independent work to inter-dependent work, e.g., dyads, triads, groups. The composition of the groups changes to build team and inter-personal skills.

Questions that are evoked require discussion and longer wait times. This implies fewer questions, more dialogue and expands pupil talk so there is *more accountable talk* and pupil ownership for their own learning.

**Project-based Learning**, using pupil inquiry, is learning in context in a situated student inquiry around finding a solution/s to a practical problem. It allows for pupil improvisation to build in flexibility. This pedagogy is derived from music programs such as Orff.

Pupil Inquiry can also be discipline- specific too by exploring a theme or research question in Science, Performance & Studio Thinking in the Arts.

## Genius Hour

This is an approach used at Google. In this instance, workforces, schools or classrooms have a dedicated time to pursue their passions. They spend time in creative ways on topics of Interest to them. This can involve an individual inquiry or group inquiry. Pupils ask questions and engage in their own research. They have to make decisions about how they will present their learning and communicate it. This allows creativity and curiosity to interact. The Learners own the inquiry. The inquiry can be teacher or pupil-directed.

## KWL

Another strategy is KWL. Pupils can use these questions to structure an inquiry.

- What do you know?
- What do you want to know?
- What did you learn?

The Ontario monograph, *Getting Started with Student Inquiry*, describes on page 4, six tips for teachers who are introducing Pupil Inquiry for the first time. Another monograph Followed deals with *Student Voice: Transforming Relationships*, describing the Importance of voice and ownership in learning. Voice is expressed in a variety of ways both verbally and non-verbally. Page two of this monograph describes some of the ways voice is expressed and what teachers might see and hear. Page five of this monograph describes developing the pedagogy of listening. Teachers pedagogically document pupils' learning through observations, conversations and products. Engagement and a sense of belonging increases with voice and self-efficacy. As educators, we try to create responsive and safe places for pupils to learn.

## **Pupil Inquiry Prompts:**

As you begin to create prompts in the classrooms, consider the ideas below:

- Think of your pupils' interests, abilities, and the need to learn to or go deeper into a topic and integrate other perspectives & disciplines as a problem or issue. This approach is pupil-centred.
- Design an Interdependent task to unpack the issue or problem and finding possible solutions. You should include fewer independent tasks and more interdependent tasks.
- Develop a *Big Idea* or a *Driving Question* phrased as a statement or question that is challenging, real-world/authentic and challenging and open-ended.
- Involve different perspectives in the resources selected.
- Develop the technical and subject knowledge and skills needed to unpack the problem or issues. What do they need to explore and find a solution to the problem or issues?
- Include the development of a product, performance, presentation, poster, paper or app.
- Co-create the success criteria to assess the finished product and include the process in the criteria.
- Leave room for the unexpected and adaptive solutions.
- If possible, present to an authentic audience- peers, parents, community members, politicians.
- Build in time for reflection and feedback by pupils individually, working with their peers and with you. This helps develop metacognitive skills.

## Questions for Pupil Self-Reflection, During and Following to Problem-Solving Task

(Adapted from - OECD 2019: 97)

Many of the statements involve Metacognition – thinking about the thinking and learning to build self-efficacy and self-ownership for learning.

- I think about what the problem involves
- I think of new ideas and make connections and share with others
- I create and ask questions throughout the process between parts of what I/we are exploring
- I make my own plan and I explain the steps and share my thinking
- I create or produce my own ideas in ways that make different connections or meanings
- I share and show what I have been thinking and what I produced and how my work connects
- I share the meaning and explain my own thinking about the initial task and my ideas and plans
- I think about the consequences of the possible solutions, both positive and negative
- I think about and sharing the connections and what changed my thinking, planning and creating during the process
- I think about how this will inform and change the next time I try a similar tasks or challenge

## Rubric for Creativity & Critical Thinking

Based on *Fostering Students' Creative and Critical Thinking: What it means in school, OECD: 27, 28*

COMPONENTS	CREATIVITY	CRITICAL THINKING
<b>Inquiring</b>	<p>Feel, empathy, observe, describe relevant experiences, access knowledge and information</p> <p>Make connections to other sources of relevant knowledge, concepts, ideas from the same or other disciplines</p> <p>Integrate multiple disciplinary perspectives and others' perspectives</p>	<p>Understand and make sense of the context, the frame, and boundaries of the problem or issue</p> <p>Identify and question the assumptions or underlying concepts and consider other perspectives</p> <p>Check and confirm the accuracy of the assumptions, facts, interpretations and analyze the gaps in knowledge</p>
<b>Imagining</b>	<p>Explore, look for, seek out ideas</p> <p>Generate unusual ideas and concepts that can be risky or radical</p> <p>Stretch and play with unusual ideas and concepts that can be risky or radical</p>	<p>Identify and review alternative theories and opinions and compare</p> <p>Or Imagine different perspectives on the problem or issue</p> <p>Identify the strengths, weaknesses, gaps of evidence, arguments, claims, beliefs, assumptions</p>
<b>Doing</b>	<p>Produce, perform, envision, prototype a model, solution, performance</p> <p>Communicate in a new/novel way</p>	<p>Justify a solution or reasoning based on logic, ethics or aesthetics criteria or arguments –endorse or support it</p>
<b>Reflecting</b>	<p>Reflect and assess the novelty of the solution or product or representation and its possible consequences</p> <p>Reflect and assess the relevance of the solution or product or representation and its possible consequences</p>	<p>Evaluate and acknowledge the limits, uncertainty of the endorsed solution or position relative to other possible solutions</p> <p>Reflect on the possible bias of one's own perspective or others' perspective in arriving at the endorsed solution as compared to others</p>