

Serious *Play*

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BOYS AND THE ARTS
GREAT MINDS, BIG HEARTS

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Introduction

Creativity has always been about the exploration of what it means to be human. There is now a sense of urgency around creativity too. Some social thinkers and philosophers believe more creative thinkers are needed to counter threats to our existence. Some economists believe that one such threat, artificial intelligence (AI), will free humans to be creative. Either way, to meet these opportunities, will young men and women have learned how to think creatively through their education? *Serious Play* is an attempt to set out techniques to teach creative thinking.

Working with colleagues at Eton College, our initial focus has been on how to develop imagination and inquiry as a response to the Centre for Real-World Learning's five-dimensional model of creative thinking. We believe that creative thinking is learnable. The design of *Serious Play* has been guided by an aspiration to find techniques that can be adapted to most subject areas, and to find techniques that are themselves examples of creative thinking. No one is sure how to teach creativity most effectively; progress in creativity is difficult to measure. These techniques are the results of observed practice by reflective practitioners who have used formative assessment methods to conclude that they are effective. They are designed to reintroduce play into the learning environment for 11-18 year olds. They are designed to nurture innovative thinking rather than reliance on conventional thinking. They are also designed to be part of a pedagogy that is social and caring.

Many sources have led to these techniques. These are acknowledged after the title. We encourage other teachers to add to this document, and share their ideas with each other and us. *Serious Play* is a working document rather than a finished product.

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https://www.researchgate.net/publication/305218451_A_Five_Dimensional_Model_of_Creativity_and_its_Assessment_in_Schools

Serious Play

Technique: *Plussing Yesses*

(Randy Nelson, Pixar) (15 mins plus)

Key ideas:

- **cognitive: *Imaginative* > Playing with possibilities > idea generation > enhancement through collaboration**
- **social: developing trust and security to build confidence in generating ideas**

Say 'yes' to every idea, to create possibilities rather than dead ends; have a scribe put these into an open source bank (whiteboard) using the exact words used by the student expressing the idea; make every person feel good about their idea

- *add value to those ideas*, but avoid judging them. Ask students to take somebody else's idea on the board and add something to it.

(Caveat: in a different space, or in a separated phase, create *clusters* of students around groups of ideas and begin to assess the possibilities and problems with them. This should not be done straight after the idea generation, as it will inhibit thinkers from generating ideas in future efforts.)

Technique: *Pass and Catch*

(15 mins plus)

Key ideas:

- **cognitive: *Imaginative* > making connections > idea generation > enhancement through collaboration > building relevance and saliency**
- **social: developing listening skills, patience**

Pass and catch the idea, add to it and pass it on when asked to. One student expresses an idea, another then adds to it by building on it. The idea is passed around the room amongst the students only until it ends and a new idea is needed.

Students are encouraged to make their passes and catches connect appropriately and relevantly. The teacher organises the ideas and supplementary comments on the whiteboard.

Students that have ideas that are not initially part of the passing sequence are encouraged to note these on paper, until an appropriate time comes to express them.

Technique: *What Could It Be?*

(10 mins plus)

Key ideas:

- **cognitive:** *Imaginative* > **Playing with possibilities** > **self-confidence as a pre-requisite for *sensible* risk-taking**
- **social:** **developing listening, working with others' perspectives and exploring possibilities**

Although this activity can be done with any descriptive medium (e.g. written text) it is easiest to explain with an image.

A preselected image of the concept / subject matter (e.g. a small section of a type of cell wall) is shown to the group and a brief recap' of previous learning or the domain of the subject is delivered.

The boys are encouraged to generate a list of credible (in the bounds of the subject / domain / previous learning) possibilities for what the partial / zoomed-in image *could* be.

- The boys are asked to rank their list in order from easiest to justify to hardest to justify.
- In pairs, small groups or to the whole group, boys are asked to select one of their options and justify how it *could* be their suggestion given the limited information provided and the bounds of the domain / prior learning.

Technique: *Concept Sculpture*

(Amaranatho, Tanya Neilsen, ViewPoints) (40 mins plus)

Key ideas:

- **cognitive: *Imaginative* > Playing with possibilities > tinkering to achieve new iterations > transformation of thought through transformation of materials (ideas/words into bodies) > forming analogies**
- **social: developing listening skills and collaborative skills > sharing and shaping ideas > performing and presenting ideas > receiving and giving critical feedback > acting and balancing in public**

Name a concept that is a gateway to lots of other concepts, but is abstract and complicated/complex e.g. 'Intelligence', 'The Cold War', 'Relativity', 'Punctuation'. Ask a group to represent this concept using only themselves, i.e. their own bodies in a sculpture/ensemble freeze frame performance. No two sculptures will ever be the same!

Preparation phases:

Begin by setting a mindfulness task in which each student thinks of three things associated with the concept. Arrange the group in a circle, each on a chair. Each is to close their eyes and then slow their breathing. Then ask them to think of the three things.

Secondly, ask the group to rehearse performing with each other and to become comfortable with appropriate bodily contact. This can be done in many ways. One way is to organise the group into pairs. Ask them to walk about the room in a random way, then at a command, come together and one has to support the other by a percentage amount e.g. 10 % would be to lean slightly against a person, 100% would be to lift and hold a person off the ground.

Thirdly, ask them to consider how to make the sculpture interesting to look at, and to rehearse creating a form that they can transform their ideas into. Start the group facing each other in a circle. Select one student to come to the middle of the circle and to strike an interesting pose. Each student should then attach himself or herself in an interesting pose. The final student then begins to make choices to remove people to leave three bodies that create the most interesting form, in their opinion.

Main phases:

Introduce three concepts to help them to review the form:

- *Levels*: are they a mixture of being low to the ground, standing erect, or some mid-point?
- *Repetition*: is there any sense of an amplification of form or of movement through repetition of gesture or shape or height? Is scale implied in any way?
- *Architecture*: how have the students used the space in the room? The floor? The walls? The doors?

Ask them to form their first iteration of their sculpture. This is done best through trying out ideas in performance rather than just talking. At the end of their production, they should be able to explain their thinking.

Criteria for feedback can be to reflect upon how many of the group's three ideas are expressed in the work? Have they chosen the most important ones? Have they created a form that expresses some of the ideas in the concept in an analogous way?

Alternative Model:

There are many abstract concepts in physics, where students are tempted to memorise information rather than form a coherent model in their mind. Electricity is one example, where students become obsessed with equations, but struggle to apply these equations to anything other than trivial problems. The concept sculpture will allow them to develop a clear model of how a simple electric circuit works, which can then be used to form more challenging circuits.

- Ask the students to think of three things related to electrical current
- Get the students moving around the room
- Restrict the path the students can take around the room to a small channel forming a complete loop
- Modify the motion so that there are narrower bits in the channel to represent resistance or students getting other students to move faster through a gap to represent a power supply.
- Ask the students to make modifications to the circuit to represent different components, such as a capacitor, diode, thermistor... They could also be asked how they would introduce other concepts such as voltage.

Here they will get a physical idea of what is happening in a circuit and at by the end they will have to think about how they can relate these abstract ideas in electric circuits to the model they created.

Technique: *Space Shifting*

(Phil Beadle)(5 mins plus)

Key ideas:

- **cognitive: Imaginative and Inquisitive** > understanding the role that environment has on nurturing creativity > understanding what a studio space is
- **social: collaborating to achieve a task quickly**

Architectural space frames and focuses our thoughts, and prevents them from getting lost.

Allow the group to sit in their regular pattern and then introduce the main activity and problem for the lesson. Ask the boys to arrange the desks in the way that is most helpful for their learning and collaborating. Desks and seats that are oriented towards the whiteboard could be changed to:

- A seminar round/oval/rectangular format
 - Be positioned against the walls to allow for a drama/mindfulness activity
 - Repurposed as stations to place resources on
 - Props to create objects e.g. use the desks and chairs to represent a general map of Rome
- Attitudes towards the space can also be changed by changing the students' physical relationship to the floor, e.g. ask them to remove their shoes, to feel the floor with the soles of their feet; ask them in a mindfulness activity to locate smells and sounds.

Technique: *Confident Uncertainty*

(Ellen Langer, Harvard; Guy Claxton) (momentary)

Key ideas:

- **cognitive: Imaginative and inquisitive** > modelling by the teacher of how to deal with the unexpected> modelling contextualising ignorance and possibilities> plotting a path to find an answer
- **social: saying 'I don't know' without being defensive; collaborating to acknowledge good questions and the parameters of knowledge; learning to adjust expectations and to see new possibilities**

Technique: *Sound Collage*

(Phil Beadle) (15 mins plus)

Key ideas:

- **cognitive:** *Imaginative and Inquisitive* > making connections and challenging assumptions > idea generation > enhancement through collaboration > explanation
- **social:** developing listening skills and agency

Desks are pushed to the side of the room and seats are placed in the free space. Students sit on these, leaving enough room for a teacher to walk between them. Each student is asked to think of three ideas/words, which relate to the main content of the lesson. These they hold onto. When the teacher walks past them, they repeat their first choice idea/word three times; they repeat their word loudly and clearly like a chant. Students listen to the cacophony as the teacher walks past their peers.

Students then stand-up and walk around the room repeating their idea/word looking to cluster with other ideas/words that they think they have a connection to. Students form pairs or groups of three then discuss why they have linked with each other. Each group explains to the other groups what the links are.

Students then break their cluster, and form new groups and try to find words with which they have no obvious, immediate connection. They ask each other whether those new connections are stronger than the previous ones.

Example: This technique can be used to build definitions and understandings of important concepts. It can help to also identify how much a class knows about a concept. In history, this can be used to explore the meaning of revolution. Groups may align around words such as 'change', 'violence' and 'complaint'. During the second phase, words such as 'anarchy' and 'rights' might find themselves aligned.

Technique: *Game Analogy*

(Richard Feynman/Dr Peter Mann) (40 min plus)

Key ideas:

- **cognitive:** *Imaginative and inquisitive* > making connections> testing ideas> understanding the value to iterations
- **social:** collaborating to come up with a solution

Preparation phases:

This demonstrates the similarity between the rules of a game and the laws of nature. It also demonstrates the problems with confirmation bias when trying to work out the rules of a game.

Show the students the video: on finding a pattern:

<https://www.youtube.com/watch?v=vKA4w2O61Xo>.

Stress that they are going to need to devise questions that don't fit the current rule that expose rules to test where a rule breaks down (confirmation bias). Show the Feynman video talking about the analogy between the rules of a chess game and the laws of physics :

<https://www.wimp.com/how-do-you-like-this-analogy-by-richard-feynman/>

Make sure the students understand that the rules of the game were determined through observation, inference and experimentation.

Main phases:

Give pairs of students packs of playing cards and get them to invent their own game using only the pack of playing cards. They should decide:

- The general rules of the game and the role of the cards
- What the aim of the game is (how does a player win?)
- What the subtler rules are that might be a bit trickier to spot

Be as imaginative as possible and remember to throw in a couple of surprises. They should practise their game to ensure that it is playable in a reasonable time. They should not make it too complicated: the best games in the world are remarkable for their simplicity.

Once they have devised their game, they will play it in front of another group and they will observe the other group's game. To deduce the rules of the other group they will use:

- **Observation:** Observe the other groups playing their game
- **Inference:** Hypothesise what you think the rules are. They cannot ask the other pair any questions, but they can discuss amongst themselves.
- **Experimentation:** Test their hypothesis by playing a game. The group whose game it is tells them when they go wrong, but nothing more (**going wrong is not a bad thing**).
- **Inference:** Boys revise their hypothesis.

Technique: *Four Dimensional Question Frames*

(Cambridge University) (15 mins plus)

Key ideas:

- **cognitive:** *Inquisitive* > exploring and challenging assumptions > enhancement through collaboration > building tools for analysis
- **social:** developing listening skills and agency, sharing and shaping guesswork and hypotheses

A research question is examined to explore the students' understanding of the potential meanings within it and the set of dimensions embedded within it that need to be understood before analysis begins and before writing-up an answer. In small groups, the students are encouraged to think of how many questions they can ask of the question.

- What do the *concepts* mean in the question? Do they contain any *assumptions*? Can these be questioned?
- Is there an implied *debate*?
- Is there a clear focus to the question that suggests a *judgement*, assessment or evaluation that needs to be arrived at?
- Is there a *beginning, middle and end* implied within the question?

And a 5th dimension:

- Why is the question worth asking to begin with? Why do we need to know the answer?

Example: In science, practical investigations are often performed to answer a question. For instance, "what happens to a spring when a force is applied?" It is often tempting to give students a set of instructions telling them how to perform the experiment and then some questions to check they have understood the rules. This may make them passive learners and thinkers.

- What are the variables in the question? (Look at the extension of the spring and the force applied.)
- What hypothesis will allow you to answer the question? (Look at when a force is applied how the spring will stretch until the tension in the spring equals the force applied.)
- What do you predict from your hypothesis? (Look at the greater the force applied the greater the extension.)
- What experimental method will allow you to test the prediction? (e.g., hang a spring vertically using a clamp. Measure the original length of the spring. Add a 100g mass to the end of the spring and measure the new length. Continue adding 100g mass up to 1kg and record the length each time.)

Technique: **Redaction Expansion**

(20 mins plus)

Key ideas:

- **cognitive: Inquisitive > Wondering and exploring and challenging assumptions > enhancement through paying greater attention > framing research questions based on other questions**
- **social: developing listening skills and sharing another's looking**

A stimulus source image is framed within a PowerPoint slide. The image has several aspects to it. Most of these aspects are redacted with an opaque rectangle. Students are asked to say what they see, as fully as possible, before a part of the redacted rectangle is removed to reveal another aspect of the image.

Each time a new aspect is revealed, the students must describe what they learn exhaustively. They must also describe how it changes the assumptions they already had, either by how it has altered them or enhanced them. The final reveal and process of analysis, could/should prompt some big questions that might well frame a research question.

Technique: **Challenge Assumptions**

(10 mins plus)

Key ideas:

- **cognitive: Inquisitive > Wondering and exploring and challenging assumptions > framing concrete questions**
- **social: developing listening skills and sharing others' perspectives**

A subject matter or focus is preselected (a picture frame in this example) before boys are encouraged to individually list all the assumptions we make of the focus. A small selection of examples could be given as a prompt. Boys are then asked to take one simple assumption and subvert or change it and evaluate what affect that may have on the concept or product. *This can be repeated.*

By sharing the boys' results with each other (in small groups, pairs, or as whole class feedback) it can expose other possibilities – and approaches to the task – to/from different boys.

It is important to have a discussion surrounding the objective of the task after: it can be to greater understand the language we use, to encourage imaginative developments of existing concepts, or to challenge what is held as 'fact'.

Example: "Write a list of all the assumptions we make about a picture frame. For example, it 'hangs on a wall' or 'it contains one picture.'"

"Select one item from your list and write a description of the advantages or disadvantages if you were to change that one item. For example, how might a picture frame be better (or worse) if it contained more than one picture?"

Technique: *Material Properties*

(40 mins plus)

Key ideas:

- **cognitive:** *Inquisitive* > exploring > making connections> testing risks> understanding the value to iterations> understanding that skills have fundamental actions that can be built upon with more care and attention
- **social:** sharing failure and helping each other to fail better

Many of the materials or resources that are used have qualities/properties that give rise to their value but also define their limitations. When these limitations are exposed, the value of the materials/resources/things is often understood more expansively. The elasticity or plasticity of most materials can be explored through processes of subtraction or addition.

Example: To understand the expressive qualities of watercolour paintings, make an abstract watercolour painting.

Take a thick piece of cartridge paper and mask off a small square or rectangle of about 5"x5". Mix a small amount of watercolour paint with a small amount of water and load a wide head brush (1"+). Onto the dry paper, brush across or down the space covering it once. Then take decisions about how many layers to add Or use a sponge to remove layers with degrees of wetness on the sponge. Explore and take notice of what happens to the surface of the paper and the quality of the paint. Explore the range and quality of wet into wet marks. Discuss as groups and take notes on what changes about the materials and how they change.

- Can this activity be applied to texts, especially primary sources? Are there words or phrases that could be removed and substituted that substantially change the nature of the text? Can words be used that reveal the structure of a sentence but change the meaning? e.g., 'colourless green ideas sleep furiously' (Noam Chomsky).