SERIOUS PLAY AND THE ROLE OF PARADOX IN ELEGANT PROBLEMS

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In this Internet age, the term 'Serious Play' appears to be associated with game design. LEGO has copyrighted the term for a consultant service using a methodology for developing innovation and performance in business, using their blocks. A Google search also reveals that there is a Leadership conference where people address games; there is a book on innovation, and a 'Center for Serious Play' at the University of Washington where interactive media products are developed. If one continues to peruse the list of options, we also find that The Academy of American Poets reminds us that Robert Frost defined poetry as 'serious play', and there is a theater group specializing in improvisation by that name.

Despite the fact that the term 'serious play' has been and continues to be one of the many paradoxes associated with the creative process (Rogers, 1954), no reference to this was immediately apparent electronically. To refresh a collective memory or inspire anew: the "ability to toy with elements and concepts" is one of three conditions of creativity identified long ago:

> Associated with openness and lack of rigidity ... is the ability to play spontaneously with ideas, colors, shapes, relationships – to juggle elements into impossible juxtapositions, to shape wild hypotheses, to make the given problematic, to express the ridiculous, to translate from one form to another, to transform into improbable equivalents. It is from this spontaneous toying and exploration that there arises the hunch, the creative seeing of life in a new and significant way. It is as though out of the wasteful spawning of thousands of possibilities there emerges one or

two evolutionary forms with the qualities which give them a more permanent value. (p.144)

Creators in every field describe their work as play, explaining or excusing their intense efforts.

Early childhood educators know how serious play is, to advance thought in young children. Yet, the synonymous connection between creativity and play that leads to creative thought in individuals of all ages is somehow, at least for the most part, missing in educational research and practice. The exceptions tend to coagulate around and within past or current 'creative geniuses' through biographies or interviews. In general, educational practice acts as if, after one turns six or seven, one needs advanced knowledge and expertise in an area before one can be creative. Rote practice with skills, facts and procedures replaces experimentation and serious play as the preferred teaching strategy in many disciplines. Yet, where the instruction combines the two: skills and play, magic seems to emerge…at any age and in any discipline.

THE ROLE OF ELEGANT PROBLEMS

The main purpose I had in mind when I conceptualized the idea of an Elegant Problem was to provide opportunities for that magic to occur. The three potential outcomes of providing Elegant Problems to students are: 1) they serve as inspiration to inflame curiosity and wonder, 2) they offer exposure to problem defining in an open solution situation and its opportunity to invite the practice of seeking elegant solutions which fuels advanced interest; and 3) they provide opportunities to develop personal aesthetic preferences. All three outcomes can result in a sense of magic.

Beyond providing opportunities to create elegant solutions, to qualify as an Elegant Problem the challenge must have value. This worthiness factor identifies the problem or challenge as at least personally, if not also fundamentally relevant and meaningful to the field. This is easier said than done. It happens when a problem is designed to encourage the fluency of many potential answers; the flexibility to apply pervasively across ages, cultures, and degrees of expertise; to work with regard to any amount of elaboration allowing for successful responses from merely tangential interest to the capacity for the deepest level of engagement; and originality is highly

valued by setting an environment for novel, inventive explorations that permit the widest birth for problem interpretation. All of these qualities can be seamlessly woven together when addressing a paradox.

INVITING PARADOX

The research literature on creative thought is ripe with intriguing paradox. 'Freeing the channels while channeling the freedom' or factoring in the fluency and flexibility of unhampered brainstorming techniques (Osborn, 1963) with the ideational rigidity (Cattell, 1968) that comes with expertise is a relevant paradox that has been mentioned often, and by many researchers, in respect to creative endeavors.* Recent discussions of this paradox in education use the term "enabling constraints" when designing a given challenge or problem (Sukaimi, 2014). There is also discussion regarding balancing the constraints of prior knowledge with the risks of trying something novel or unproven. Challenging that which is considered a 'given', that led to the new idea being pursued in the first place, is a paradox some expert creators get to know well.

In paradoxical thinking there is a delicate balance or sweet spot between two opposing forces that seems to increase creative capacity. Reaching that sweet spot requires what psychologists call a 'tolerance for ambiguity' or the ability to sit comfortably in the grey areas of an idea.

There are many exercises that can help to stretch that tolerance. Like a muscle that needs use, experts require a good stretch as much, but perhaps not as often, as a novice. For example, the Surrealists created many games they played together to explore forced relationships and other methods of breaking thought patterns in unusual ways.

Useful exercises in 'serious play' often come from individual artists who share their ideas. The choreographer Twyla Tharp offers what she calls her 'scratching techniques' for getting an idea to pursue to help her maintain her 'creative habit' (another apparent paradox usually mentioned or referred to by creators). Nick Bantock, author of Griffin & Sabine, offers a series of authentic ways to stretch oneself in his 2014 book The Trickster's Hat. Addressing both words and images in his collages, either symbol system is in play during a given exercise.

His Transposing Nouns (p. 46-49) is a basic example of a form of serious play. The idea of using words first may help with advanced art students who tend to find images so precious. Here he asks that you pick up any book you are reading or one close at hand and choose a short paragraph (3-4 sentences) then underline the nouns. Do the same with a similar sized paragraph in a very different book (even a cookbook, travel guide). Then transpose the nouns from the first read into the second paragraph and do the same – transposing the nouns from the second paragraph into their ordered places in the first paragraph. Read out loud and enjoy the rhythm of the silliness of both paragraphs, ignoring improper tenses and punctuation. Then, remove any unwanted words, correct the tenses and punctuation. Although you cannot change the order of the words, with playful effort the result brings forth a new product. This is a good exercise for someone with expertise who needs to loosen the reins of ones' own thinking or needs to change perspective.

I have found that most beginners need tasks that directly focus on stretching the ability to make connections. There are many methods beyond brainstorming that inform this type of thinking. Gordon designed some in a series of educational workbooks titled Making it strange (1968). The playfulness of 'making the familiar strange and the strange familiar' in Synectics, Gordon (1961) uses analogies to develop connections. Here the metaphorical thinking exercises ask for a leap in thinking just for the fun of it. The goal of Synectics and these exercises is to make connections that excite. There are no wrong answers as long as the idea excites. This purpose of excitement is paramount to the activity, yet often lost in later translations. Introducing beginners to these warm-ups often reveals where you need to scaffold their sense of safety and/or skill development. For example, asking students one of the assignments "Which takes up more space? A pickle or a pain?" and reviewing answers such as:

01 A pickle takes up more space because a pickle you can see; a pain you cannot see.

02 A pain takes up more space because when you have a headache it fills your whole head. (pg.11. Book 1, Making it Strange, Synectics, Inc.)

helps students of all ages understand what is being asked of them. Warm ups require several examples to understand the technique. Some of his others that I have found successful (with varying degrees of scaffolding) at any age:

- Which weighs more? And why?
  A cough or a sneeze?
  Zero or one?

- Which is louder?
  A smile or a frown?
  Going to sleep or waking up?

- Which is quicker?
  Yellow or black
  (From Book 1 and 2, Making the familiar strange)

An educator with enough advanced expertise to be called an Instructional Strategist, designs challenges that invite these possibilities among a diverse set of learners. This is not difficult with analogies because "Play with analogies covers a scale with an endless variety of levels, ranging from that which is apparent to the popular mind to that which is known only to the expert."(P. 54, Gordon, 1961). Note how this quality satisfies the criteria of flexibility that also helps define an elegant problem.

USE OF PARADOX IN ELEGANT PROBLEMS

Using a carefully chosen paradox to frame an Elegant Problem can successfully develop the capacity for creative thinking in students. For example, the notion of 'making the ordinary extraordinary' has been the impetus for lessons on creating ritualistic vessels, portraying an unusual perspective, or playing with innovation techniques like SCAMPER*. It can also fuel a lesson that asks students to transform an ordinary material into something 'that surprises' as is done so masterfully by the artist Andy Goldsworthy. I have seen this paradox used in art, creative writing, science and social studies lessons designed as Elegant Problems.

The Synectics model of making the familiar strange and the strange familiar also holds much promise as a useful paradox. This method of metaphorical thinking uses any of four specific mechanisms: personal analogy; direct analogy, symbolic analogy and fantasy analogy. Einstein imagining himself riding a beam of light may

SCAMPER is a mnemonic that stands for:
- Substitute
- Combine
- Adapt
- Modify
- Put to another use
- Eliminate
- Reverse

be the most famous example of a personal analogy. Direct analogy often uses examples from nature or the found environment to solve a problem or invent something new. For example, thistles attached to a pant leg have been credited for the inspiration of Velcro. The artist Duchamp often enjoyed direct analogy as well. Symbolic (and fantasy) analogies are fertile ground for developing artistic challenges or problems.

A nice example of a first attempt at designing an Elegant Problem that encourages fantasy analogy came from an art education faculty member at Maryland Institute College of Art Stacey McKenna Salazar when she was a graduate student:

> Art & Sole - Through drawing and painting, transform your ordinary, everyday shoe into a more fantastic one – one that hints at a story – using symbolism, distortion, exaggeration or animation…. Artists or cultural sources: Elizabeth Murray, Andy Warhol (his book: Shoes, Shoes, Shoes), Vincent Van Gogh, Philip Guston, Enricco Bandelli, shoes from Turkey, American Indian Tribes, Africa, France, China; O'keefe book on shoes, History of Shoes, Cinderella's Revenge.

Building out from the infamous 'Draw your shoe' problem where the shoe drawing often became a symbolic representation of the person, this problem invites students to build a fantasy analogy. Going from representation to imagination with the same source material encourages flexibility from multiple perspectives.

Another problem I like very much is the lesson on Serious Play that Chia Wei Hou brought to the 2014 STAR workshop on Elegant Problems. I expect his work is included in this monograph. The magic of 'wearing' two opposite ideas at the same time and learning from the paradox is not to be underestimated. It requires the development of skills such as a tolerance for ambiguity, the ability to see unusual perspectives or gaps, the space between objects as the 'ma', and the joy of playing in the grey areas of an idea.

A second purpose of incorporating Elegant Problems as an instructional strategy for fostering creative thought is an invitation to play with a meaningful idea deeply and uniquely. When an elegant problem is meaningful to the field as well as the problem solver, the chances of attaining an elegant solution is greatly enhanced. In those ready, Elegant Problems by definition will invite elegant solutions. But these problems also challenge sources to reach deeper and peer into the realm of elegant solutions found by others, advancing every learner's zone of proximal development with regard to creative thought when expertly guided.

*If my memory serves me well, the phrase 'Free the channels and channel the freedom' was from something George M. Prince wrote in the 1970's although I have not been able to relocate the source at the moment. Osborn and Cattell are only two of many who looked at this paradox from one side or the other.

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