Creativity Development

Outline

- 10 myths on creativity
- Critical periods in creativity development
- Expression of creativity in childhood
- Conditions that impact creativity development
- Skills for creativity development:
  - Open-minded
  - Curiosity
  - Observation
  - Analysis

Myths on Creativity

- Eureka myth:
  - New ideas sometimes seem to appear as a flash of insight
  - Research shows that such insights are actually the culminating result of prior hard work on a problem
  - Thomas Alva Edison: "Invention is 99% perspiration & 1% inspiration"

- Breed myth:
  - Creative ability is a trait inherent in one's heritage or genes
  - Evidence shows that there is no such thing as a creative breed
  - People who have confidence in themselves and work the hardest on a problem are the ones most likely to come up with a creative solution

- Originality myth:
  - A creative idea is proprietary to the person who thought of it (intellectual property)
  - History & empirical research show more evidence that new ideas are actually combinations of older ideas and that sharing those helps generate more innovation

- Expert myth:
  - Many companies rely on technical experts to generate a stream of creative ideas
  - Research suggests that particularly tough problems often require the perspective of an outsider or someone not limited by the knowledge of why something can't be done

- Incentive myth:
  - Bigger incentives, monetary or otherwise, will increase motivation and hence increase innovation productivity
  - Incentives can help, but often they do more harm than good, as people learn to game the system

- Lone creator myth:
  - Reflects our tendency to dramatize the story
  - Famous history of breakthrough inventors & sticking creative works to a sole person
  - Creativity is often a team effort, and recent research into creative teams can help leaders build the perfect creative troupe

Myths on Creativity (Cont’d)

- Brainstorming myth
  - Many companies rely on spontaneous group discussions to explore every possible approach, no matter how far-out, to yield creative breakthroughs
  - There is no evidence that just "throwing ideas around" consistently produces innovative breakthroughs

- Cohesive myth
  - Want everyone to get along and work happily together to foster innovations
  - We see so many "luna" companies where employees play foosball and enjoy free lunches together
  - In fact, many of the most creative companies have found ways to structure dissent and conflict into their process to better push their employees' creative limits
**Myths on Creativity (Cont’d)**

- Constraints myth:
  - Constraints hinder our creativity and the most innovative results come from people who have “unlimited” resources.
  - Research shows that creativity loves constraints.
- Bottleneck myth:
  - Creative idea is the bottleneck, once found, the work is done.
  - Unless we communicate it, market it and find the right customers, a creative idea is not necessarily useful.

**Critical Periods in Creativity Development**

- 2-5 years:
  - Learn to accept authority — the more stricter it is, the more the child could stifled creativity.
- 6-10 years:
  - Desire to be accepted by the social group forces conformity to the group’s set norms.
- 13-15 years:
  - Peer acceptance, especially from opposite sex, controls the adolescent behavior.
- 17-19 years:
  - Preparation for the vocation could require conforming to a standard pattern.

**Expression of Creativity in Childhood**

- Animism:
  - Tendency to ascribe consciousness to inanimate objects.
  - Begins ~2 years & peaks ~4-5 years.
- Dramatic play:
  - Animistic thinking that treats inanimate objects as lifelike qualities.
  - Assigns them rules then play them out.
- Constructive play:
  - Making things from mud, blocks, paper, etc. and drawing.
  - Mostly reproductive & mostly solitary.
- Imaginary companions:
  - Create a person/animal in fantasy to play the role of companion, having a name & obey the child.
  - More prevalent in brighter children & most common in timid or sensitive children.

**Expression of Creativity in Childhood (Cont’d)**

- Daydreaming:
  - Mental play that provides an escape from unsatisfying reality, with the dreamer being the central character.
- White Lies:
  - Falsehood that the person telling it actually believes in.
  - Not intent to deceive others for self-protection, but for self-aggrandizement.
- Humor:
  - Ability to perceive something comic & to produce it.
  - A level of personal adjustment but also has a high creative quotient.
- Storytelling:
  - Starts as reproductive initially, and later on becomes creative.
  - Tends to be more with those who have had imaginary companions.

**Conditions that Foster Creativity**

- Time:
  - Less control to provide free time to play & try out things.
- Solitude:
  - Away from pressures imposed by the social groups.
- Encouragement:
  - Unconditional encouragement free from criticism & ridicule.
- Materials:
  - Materials to play with and stimulate experimentation & exploration.

**Conditions that Foster Creativity (Cont’d)**

- Stimulating environment:
  - Provide the environment of encourage and support.
- Un-possessive parent-child relationship:
  - Balance between overprotective and over-possessive.
- Child-training methods:
  - Democratic and permissive child training at home & school.
- Opportunities to acquire knowledge:
  - Create opportunities to acquire the knowledge to build the foundations for further creativity.
HAZARDS TO CREATIVITY
• Failure to stimulate creativity
• Inability to detect creativity in time
• Unfavorable social attitudes towards creativity
• Unfavorable home conditions
• Unfavorable school conditions
• Excessive daydreaming

SKILLS FOR CREATIVITY DEVELOPMENT
• Open-minded:
  • Willing to consider new ideas without being critical or judgmental
• Curiosity:
  • Learn new things, unlearn old things that are no longer relevant, & relearn at any point
• Observation/experimentation
  • Active acquisition of information from a primary source
• Analysis
  • Systematic examination of data, by breaking it into its component parts to uncover their interrelationships
• Synthesis
  • Systematic combination of different elements to form a coherent whole
• Imagination
  • The ability to form a picture of something you haven't seen

OPEN-MINDED
• Albert Einstein:
  • "The measure of intelligence is the ability to change."
• Benefits of being open-minded:
  • Let go of control
  • Experience change
  • Making mistakes
  • Strengthening yourself
  • Gaining confidence

CURIOSITY
• Albert Einstein:
  • "I am neither clever nor especially gifted. I am only very, very curious."
• Why curiosity is important:
  • Makes your mind active instead of passive
  • Makes your mind observant of new ideas
  • Opens up new worlds & possibilities
  • Brings excitement into your life

How to develop curiosity:
• Keep an open mind
• Don’t take things for granted
• Ask questions relentlessly:
  • Why? Why not? What if?...
• Don’t label something as boring
• See learning as something fun
• Read diverse kinds of reading

OBSERVATION
• Observations can be either qualitative or quantitative
  • In living beings, observation employs the senses
  • In science, observation can also involve the recording of data via the use of instruments

How to improve observation skills:
• Pay attention to things that you usually ignore
• Focus on details
• Observe people
• Form connections
• Draw or reconstruct from memory
• Record your observations
• Keep an idea log

ANALYSIS
• Analytical skills:
  • The ability to visualize, articulate, conceptualize or solve problems by making decisions that are sensible given the available information
  • Includes:
    • Logical thinking
    • Breaking down complex problem

How to improve analytical skills:
• Work out math problems
• Play brain games
• Build a large knowledge base
• Search for connections
• Challenges yourself with new things
• Instruct others