

Introduction to Creative Problem Solving

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Road Map for Session

1. Our context
2. Understanding what creativity is & why it is important (build off keynote)
3. Developing creativity & creative thinking
4. Taking it Forward



International Center for Studies in Creativity

Buffalo State – State University of New York

Fast Facts

- Founded 1967
- Offer MS in Creativity
- Certificate in Creativity and Change Leadership
- Program for Distance Learners
- Over 500 alumni
- CRS Library Collection



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Other Programs



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- Creativity Camp
- Creativity in America short course
- Latin America Certificate Program

Examining Creativity

(in groups)



Examining Creativity

(in groups)

What is Creativity?

- Words
- Phrases



Creativity is an Ability

Ability implies...

Creativity is an Ability

Ability implies...

- All people are creative



Creativity is an Ability

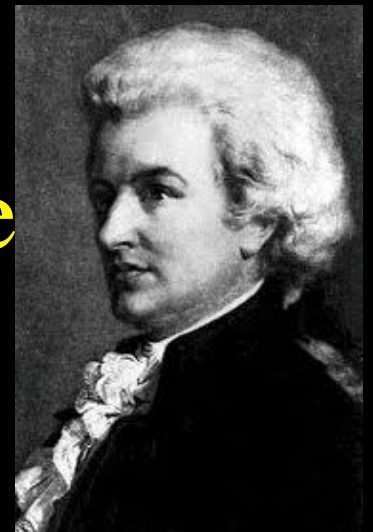
Ability implies...

- All people are creative
- People vary in regard to their creative ability

Creativity is an Ability

Ability implies...

- All people are creative
- People vary in regard to their creative ability
- Whatever your level of creative ability it can be enhanced



Classic Definitions

Creativity is a process that leads to the production of original ideas that are valuable

Innovation is the successful introduction of new & valuable ideas



Examining Creativity

(in groups)

Why is creativity

What is Creativity? important?

- Words
- Phrases

- Personally
- Professionally





Welcome to the Age of Innovation

1950-1960s
Age of Efficiency

1970-1980s
Age of Quality

1980-1990s
Age of Flexibility

Today
Age of Innovation
(& Creativity)

88%

Corporations with Innovation in their
Vision, Values, Strategic Plan



GREEN RED BLUE GREEN
BLUE YELLOW ORANGE
RED BLACK BLUE RED
GREEN RED BLUE GREEN
ORANGE GREEN ORANGE
BLACK YELLOW BLACK
BLUE RED GREEN BLUE
ORANGE BLUE ORANGE

**Creativity
&
Creative Thinking
21st Century Skills**

21st Century Skills: Learning for Life in Our Times

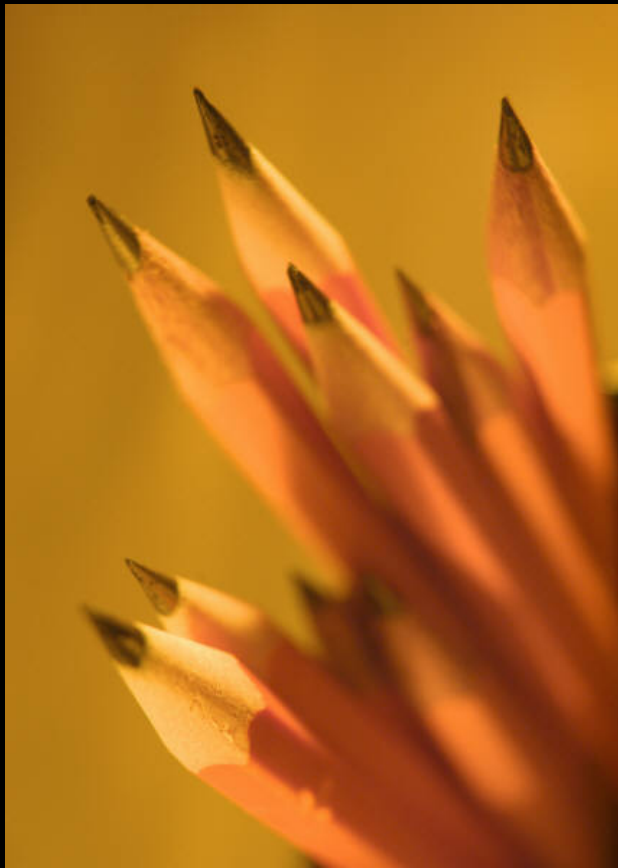
- Learning and Innovation Skills
 - Critical thinking & Problem Solving
 - Communication & Collaboration
 - Creativity & Innovation
- Digital Literacy Skills
 - Information Literacy
 - Media Literacy
 - Information & Communication Technologies
- Career & Life Skills
 - Flexibility & Adaptability
 - Initiative & Self-Direction
 - Social & Cross-Cultural Interaction
 - Productivity & Accountability
 - Leadership & Responsibility

Job Readiness Skills

Applied Skill	Gap Between High Need & Provision
Creativity	68.6%
Ethics	55.0%
Professionalism	47.5%
Lifelong Learning	44.1%
Critical Thinking	43.6%
Written Communication	37.0%
Diversity	33.3%
Oral Communication	31.3%
Teamwork	24.5%
Information Technology	24.4%
Leadership	22.6%



How well do schools prepare students to join today's world?



“Most educational efforts emphasize convergent thinking, and therefore may do very little, if anything, for creative potential.”



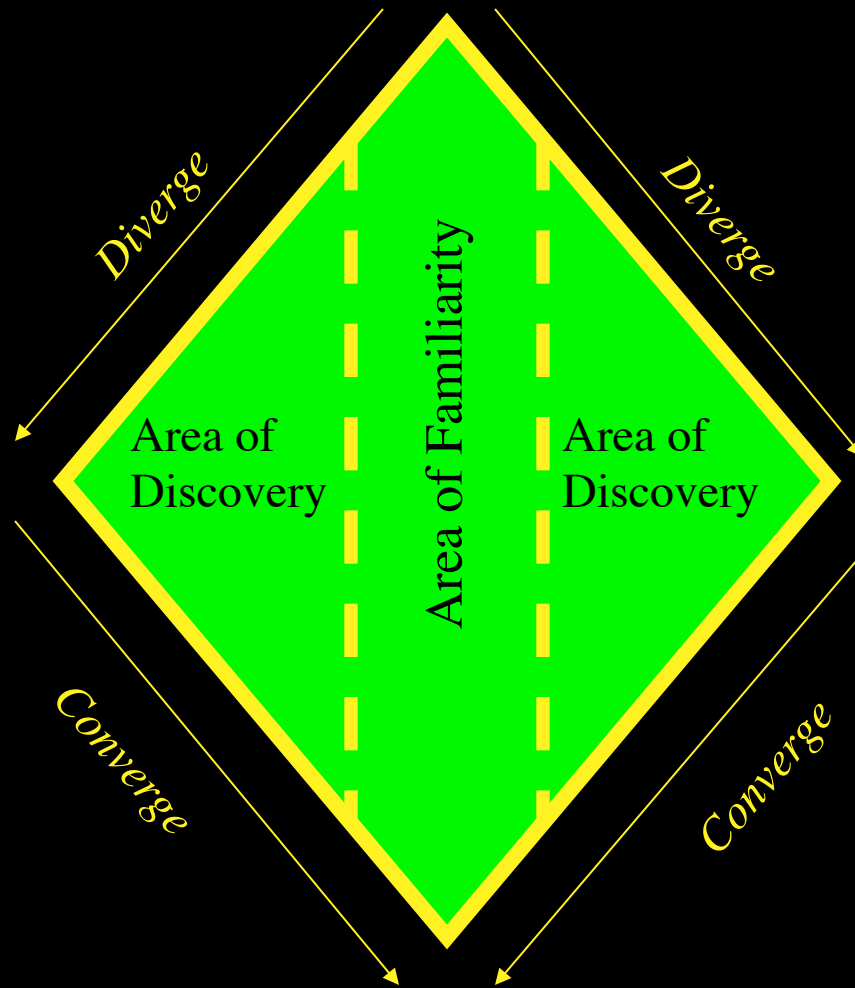
How to be a Better Creative Thinker

Window of Ideas

Divergent Thinking Guidelines

- Defer Judgment
- Go for Quantity
- Make Connections
- Seek Novelty

Dynamic Balance: The Core to the CPS Process



- Allow for Incubation (wild card)

Divergent Thinking Guidelines:

- Defer Judgment
- Go for Quantity
- Make Connections
- Seek Novelty

Convergent Thinking Guidelines:

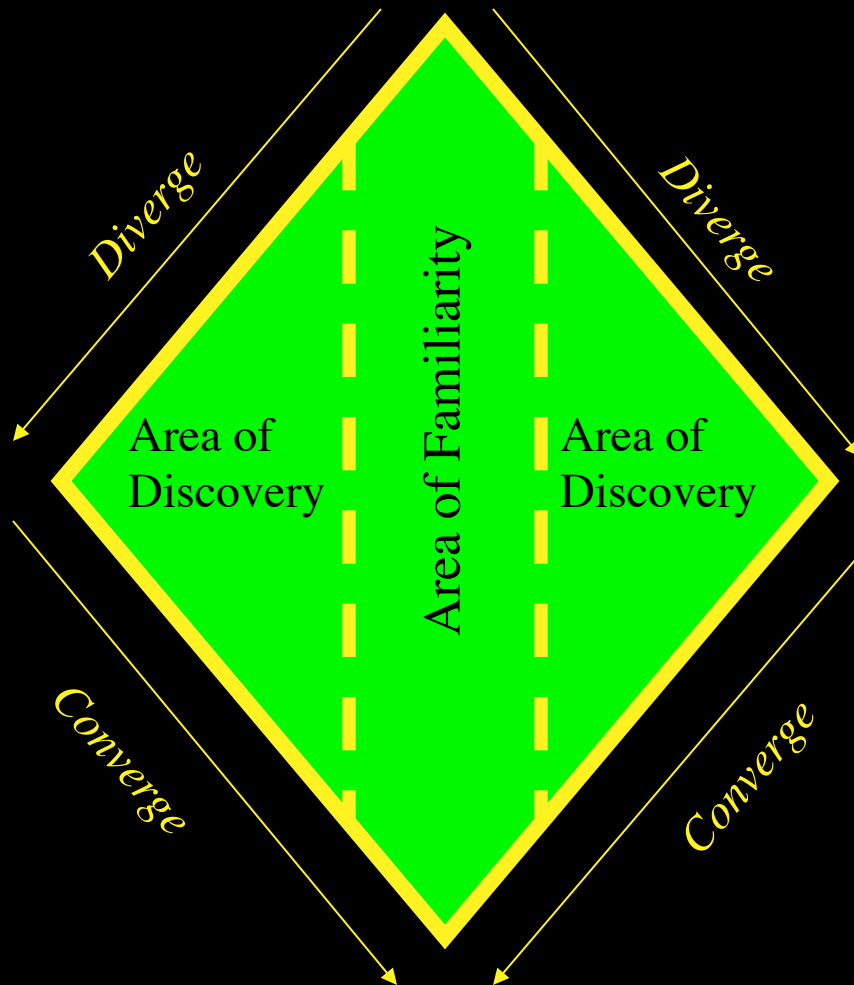
- Use Affirmative Judgment
- Consider Novelty
- Check Your Objectives
- Be Deliberate

Divergent Thinking Activity

What are all the uses for a million ping pong balls?



Dynamic Balance: The Core to the CPS Process



Divergent Thinking Guidelines:

- Defer Judgment
- Go for Quantity
- Make Connections
- Seek Novelty

How Well Did You Do?

Divergent Thinking Activity

How might we enhance
creative thinking among
students at Fleming?

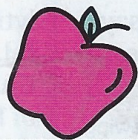
Preferred Skills

Corporate recruiters to name the job skills they value most
 on whether their graduates possess those skills.

in and Francesca Levy

Skills Employers Value

Business schools send most of their graduates into these fields



One recruiter said she looks for MBAs who can communicate because it is "nearly impossible" to learn on the job

Share of recruiters surveyed who say it's one of the five most important skills

The school that best meets recruiters' expectations for each skill*

1. Communication skills	68%	Stanford
2. Analytical thinking	60%	MIT (Sloan)
3. Ability to work collaboratively	55%	UNC (Kenan-Flagler)
4. Strategic thinking	53%	Harvard
5. Leadership skills	50%	Harvard
6. Creative problem-solving	42%	Stanford
7. Motivation/drive	38%	Virginia (Darden)
8. Adaptability	29%	Virginia (Darden)
9. Quantitative skills	26%	Pennsylvania (Wharton)
10. Decision-making	20%	MIT (Sloan)

Wharton has tried to shed its reputation as a quant factory, but recruiters still see it that way

Where Schools Succeed

Top 10 full-time MBA programs as ranked by Bloomberg Businessweek

1. Duke (Fuqua)	Motivation/drive
2. Pennsylvania (Wharton)	Quantitative skills



Skill the school scored highest on*

43

Business Week

"Skills Employers Want"

April 2015

70+

Studies show that creativity is trainable and that cognitive models, like Creative Problem Solving, are most successful

Deliberate Creativity: Creative Problem Solving



Nielsen & Thurber (2010) based on the work of Puccio & Miller (2003)



The Creative Problem Solving (CPS) Model



1. Clarify
Identifying the challenge



2. Ideate
Generating ideas



3. Develop
Bringing ideas to life



4. Implement
Giving ideas legs



the definition of Ideational Thinking

**the ability to produce a
variety of original options,
images or thoughts that
address challenges.**



1. Clarify
Identifying the challenge



2. Ideate
Generating ideas



3. Develop
Bringing ideas to life



4. Implement
Giving ideas legs



Develop

Bringing ideas to life

- **evaluate and strengthen ideas**
- **craft ideas into useful solutions**
- **take an idea from good to great**

When you develop you use evaluative thinking.



The definition of Evaluative thinking

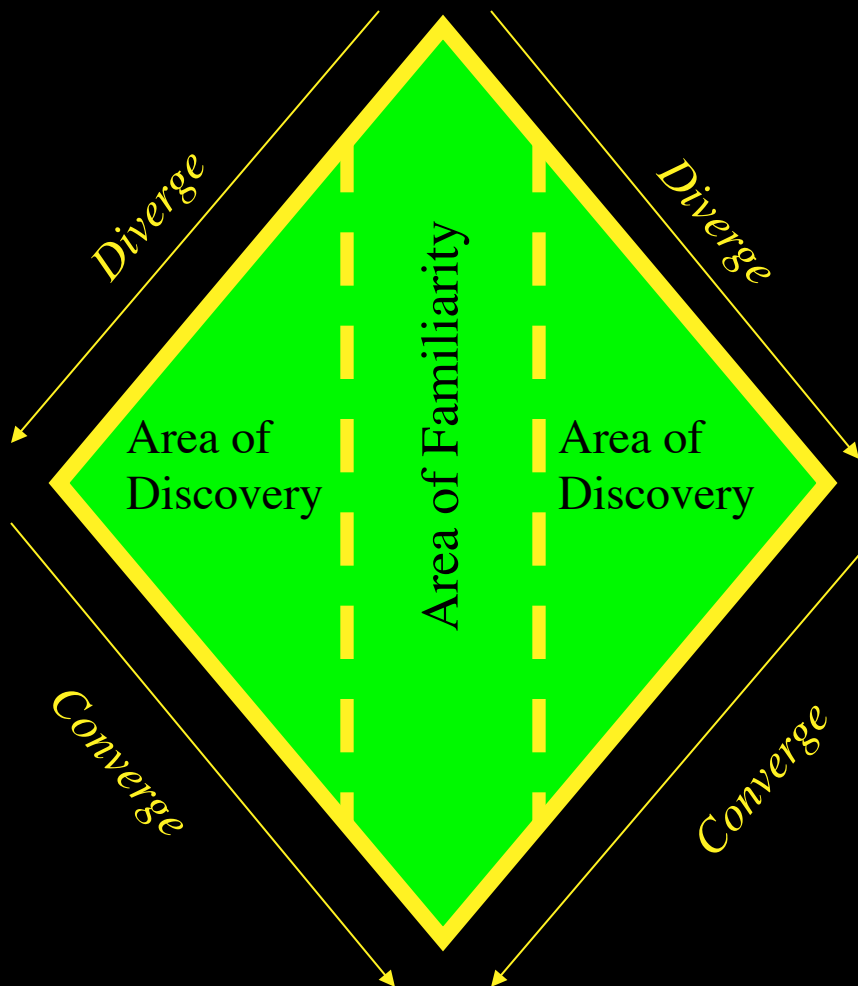
**the ability to evaluate and
transform a broad idea into a
specific, workable solution that
resolves the challenge.**



**How do you want your ideas
to be evaluated?**

Most useful feedback

Dynamic Balance: The Core to the CPS Process



Convergent Thinking Guidelines:

- Use Affirmative Judgment
- Consider Novelty
- Check Your Objectives
- Be Deliberate



POINT

1. Plusses

- Strengths, Good Points, Positives, Pluses

2. Opportunities

- Future Spin-offs, Possibilities, Novel Aspects
- What if thinking



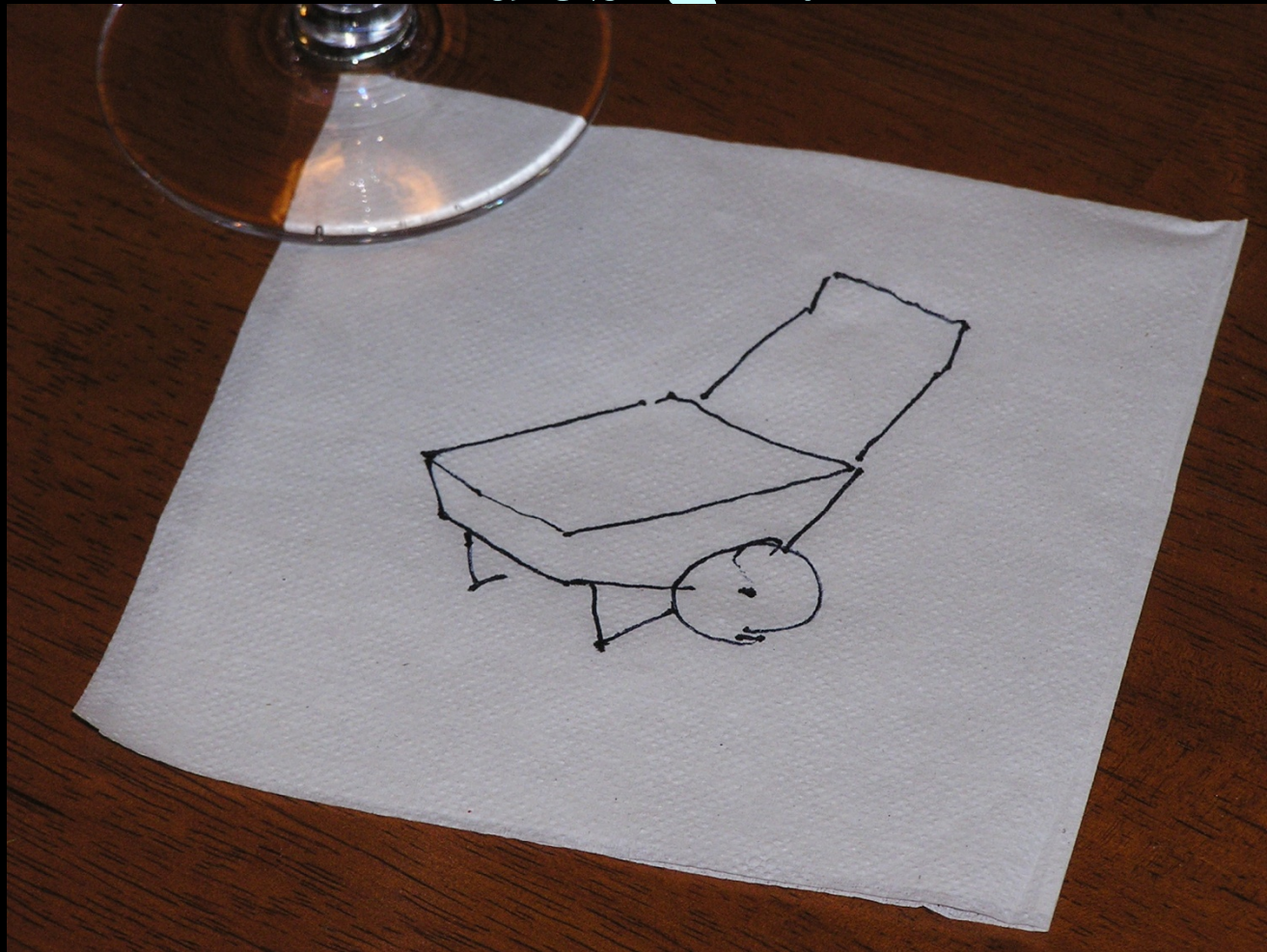
3. Issues

- Weaknesses, Trouble Spots, Minuses
- Phrased in "How to...", "How might..." What might..." statements

4. New Thinking: Overcoming Issues through Divergent Thinking

- Generate Ideas to Overcome Main Issues

Comments on a new wheelbarrow design?



Point

Plusses

- The hopper has a lot of space
- The handle seems reinforced
- The wheelbarrow won't tip over
- The wheels give it more stability
- It's easy to maneuver

Concerns

- How to make wheelbarrow easier to maneuver?
- How to make it more attractive?
- What might be ways to make the grip more comfortable?
- How to improve traction?
- How to identify buyers?
- **How to strengthen center of gravity?**

Potentials

- It might make gardening easier
- It might reduce the number of accidents
- It might replace the traditional wheelbarrow
- It might cost less to produce
- It might be used for storage

Overcoming Concerns

- **How to strengthen center of gravity?**
- Make it a longer handle
- Push down instead of lift up
- Attach and extend braces on sides of barrow
- Attach Segway technology to it
- Make it heavier near the handles
- Create a rail system for it



Point Application

- Select a “blue sky” idea from the brainstorming activity on “How to enhance creative thinking among students at Fleming?”
- Run through the Point
 - **Pluses** – what do you like about the idea
 - **Opportunities**– what might happen if we implement this idea
 - **Issues**– What are potential issues, weaknesses, problems (phrase as a “How To...” or “How Might We...”)
 - **New Thinking to Overcome Issues**– Select top 1-2 issues/concerns that could prevent us from moving forward and generate ideas to overcome these issues/concerns
 - **Does your idea change** – Refine, keep or kill

Some Sample Uses for Point

- Evaluating a proposed idea
- Providing feedback
- Capturing lessons learned from a project, assignment or event
- Conducting performance reviews
- Developing a product concept
- Improving team effectiveness

Taking it Forward





Resources

<http://creativity.buffalostate.edu/>

Creative Leadership: Skills that Drive Change (Sage)
*Creativity Rising: Creative Thinking & Problem
Solving for the 21st Century (ICSC Press)*

Creativity Workshop & Information Session

Sheridan – Oakville Campus – May 5
Conference Center Rooms A & B – 7:00 to 8:30



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Topics

- MS in Creativity
- Certificate in Creativity and Change Leadership
- Program for Distance Learners
- Latest faculty research
- Team exercise



Thank You