Divergent Thinking Workshop

TH!NK Faculty Workshop
Spring 2015
Sara Queen, Assistant Professor College of Design
Divergent Thinking
+ Convergent Thinking
+ Taking Risk in the Classroom Workshop

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Convergent vs. Divergent Thinking

Divergent Thinking
- Imagination
- Generating New Possibilities

Convergent Thinking
- Judgement
- Decisions
- Testing and evaluating
Convergent + Divergent Thinking Process
Divergent Thinking + Creativity

DIVERGENT THINKING
AN ESSENTIAL CAPACITY FOR CREATIVITY
ISN'T A SYNONYM

ISN'T THE SAME THING AS

CREATIVITY
THE PROCESS OF HAVING ORIGINAL IDEAS THAT HAVE VALUE

mmm... THAT WOULD BE SWELL!

ED DE BONO
THINK LATERALLY

LOTS OF WAYS TO INTERPRET A QUESTION
MULTIPLE ANSWERS NOT ONE!

SEE LOTS OF POSSIBLE ANSWERS TO A QUESTION

NOT LINEAR
Divergent Thinking + Disciplinary Methods
Valid reasons why divergent thinking is often discouraged in classrooms:

- **Divergent thinking treats all ideas equally**
- **Divergent thinking is often hard to measure**
- **Divergent behavior in larger classrooms might cause disruption.**
“All children are artists. The problem is how to remain an artist once he grows up.”

Pablo Picasso

We are currently “educating people out of their creativity capacities” by making mistakes the worst thing a student can do.

Sir Ken Robinson, TED Talk “How Schools Kill Creativity”
Creativity Research: George Land

- At 5 years old 98% scored in the “Creative Genius Category”
- Adults only scored 2% in the “Creative Genius Category”.

Land concluded that non-creative behavior is learned early on.
How do we encourage BOTH?

Integrating Divergent and Convergent Thinking:

- Separate and give space to each type of thinking
- Encourage play & manage failure
- Encourage a diversity of perspectives
- Acknowledge multiple intelligences
Divergent Thinking Activities

Asking Questions

Problem-based learning
Open-ended Questions
Topic Analysis
  How would you describe _________?
  What are the causes/effects of _________?
  What is important about _________?
  How has _________ changed? Why are those changes important?
  What is known and unknown about _________?

Guided Peer Questioning
  What are the implications of _________?
  Why is _________ important?
  What is another way to look at _________?

Inquiry-based Feedback
  I noticed that _________ why? and how?
Divergent Thinking Activities

Brainstorming + Ideation

Generating Alternatives (1)
- Change your media
- Change constraints or criteria of the challenge or issue at hand
- Work in unknowns, take RISKS
- Build-in Translation and Abstraction

Keeping a Journal

Freewriting

Mind or Concept Mapping

(1) Keith Sawyer, Zig Zag
Integrate Divergent Thinking

In disciplinary similar or allied groups brainstorm on the following:

- How is Divergent Thinking used in your discipline?
- Do you use Divergent Thinking strategies in your course now?
- What are the barriers to incorporating Divergent Thinking in your course?
- Are there short term, low-stakes exercises which you can scaffold throughout your course to encourage Divergent Thinking Behaviors? (inside or outside of class time)
“The term “Risk Society” has been coined to describe a culture that is oriented towards the future and dealing with uncertainty and insecurity. Risk is integral to innovation and to advanced, complex societies. Major advances are dependent on experimentation-- a process that involved trying out and mixing new ideas, methods, and techniques.” (1)

“The future face of enterprise will be defined by those who are willing to take risks, experiment vigorously, and continue in the face of failure” (2)

1. Rolfe, Heather. NESTA Learning to Take Risks, Learning to Succeed. NIESR p. 7
Entrepreneurs and Innovators generally have a higher tolerance for risk. They are more likely to perceive:

- Strengths rather than weaknesses
- Opportunities versus threats
- Potential for performance improvement versus deterioration

Rolfe, Heather. NESTA Learning to Take Risks, Learning to Succeed. NIESR
How we Discourage Risk Taking

Barriers to risk taking in the classroom (+ life) are:

• Perception of loss vs. gain.
• Frequent progress checks.
• Desire for predictable outcomes and objectives.
• Fear of failure.
• Lack of ownership over decisions.
• Lack of time.

Rolfe, Heather. NESTA Learning to Take Risks, Learning to Succeed. NIESR
Anticipate, Take, and Manage Risks

Risk taking is a cognitive process and can be learned and refined with practice.

“Learn to anticipate, take and manage risk” as an learning objective
  • Understand / Predict reward or consequence (in both negative and positive terms)
  • Learn from and value failure through metacognitive reflections
  • Encourage informed discussions by acting on reasonable risk/reward assessment

Facilitating Risk in the Classroom

Strategies to facilitate risk taking in the classroom:

- Instructors and TAs should have clear **distinct roles in projects**, allowing students to take ownership of their decisions.
- Give students the **freedom to design or define** aspects of their assignment/project.
- Foster an environment that **supports independent thinking**.
- **Ask questions that are open ended** and do not advocate solutions.
- Factor into the project **reflection** exercises which students to report on their experiences and lessons learned.
- Engage students in exploring the course content with **applied “real world” issues** (include “external- champions” where possible).
- Discuss **case studies / precedents of risk takers** within the discipline whose risks transformed the field.
Experiencing risk inevitably involves experiencing failure.

- Risk in the “safe” environment of the classroom
- Distributed risk taking encourages students to not put all of your eggs in one basket but explore a number of possible and appropriate options.
- Risk taking skills have been shown to improve confidence and resiliency to setbacks.

Fail early and Fail Often
Risk Taking in your classroom

Most of our disciplines are built on processes and methods which incorporate risk taking because they involve stages of decision making, experimentation, testing, observation and adaptation. However there is evidence that teaching in the classroom often fails to include risk taking by giving prominence to knowledge and understanding rather than enquiry.

Break into small groups and explore:
- How you can incorporate risk taking in your classroom?
- What are the barriers to incorporating risk into your classroom?