

CELT Workshop 21 October 2014

## CREATIVE TEACHING: REPLACING BUGS WITH OPPORTUNITIES

Sara Marcketti and Elena Karpova

### Why is Creativity Important?

- Creativity is stressed as a necessary requirement for United States prosperity and security by the National Science Foundation
- The plethora of political, economic, and social challenges experienced on a global scale in the 21<sup>st</sup> century necessitates new creative solutions.

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## Reasons for Teaching Creative Thinking

- Research suggests that American creativity is declining for the first time in decades (Bronson & Merryman, 2010).
- The potential consequences of the trend are far-reaching and may impact the quality of life in our communities and the sustained economic growth of the nation (Florida, 2002).
- One of the reasons for the creativity decline is lack of its development in schools (Vance, 2007; Xu, McDonnell, & Nash, 2005).
- Nurturing creative thinking in students and young professionals today is more important than ever (Florida, 2002).

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## Our work in Creative Thinking

- 2006

### Getting Ready for the Real World: Student Perspectives on Bringing Industry Collaboration into the Classroom

Learning through industry collaborations is critical in decreasing the gap between the real world and the academic environment. Working on challenges drawn from industry can increase students' knowledge and future employability, thus enhancing labor force preparation. This study explored students' perceptions (n = 110) of the benefits and challenges of working with industry projects as part of a creative thinking and problem-solving course. As a result of the industry collaboration, students reported more meaning to their learning experiences, deeper relevance to their future career paths and increased motivation to deliver quality outcomes for industry and their class instructors. The challenges included pressure to impress industry representatives and the complexity of real-world problems.

Sara B. Marcketti  
Associate Professor  
sbb@iastate.edu

Elena Karpova  
Associate Professor

Learning through industry collaborations in classroom activities is critical in decreasing the gap between the real world and the academic environment. Working on challenges drawn from industry can increase students' knowledge and future employability (Collins, Curtis, Curtis, & Stevenson, 2007), thus enhancing labor force preparation. Yet most academic programs focus

### The Efficacy of Teaching Creativity: Assessment of Student Creative Thinking Before and After Exercises

Sara B. Marcketti<sup>1</sup>, and Jessica Barker<sup>1</sup>

### Creative Problem-Solving Exercises and Training in FCS

SARA B. MARCKETTI  
ELENA KARPOVA  
JESSICA BARKER

Creative problem-solving has been linked to successful adjustment to the demands of daily life (Chen & Kaufmann, 2000). The ability to recog-

unconventional ways of thinking, the exercises were adapted from various sources (see Resources) and utilized experiential approaches. The exercises



Thinking Skills and Creativity

journal homepage: <http://www.elsevier.com/locate/tsc>

Fashion industry professionals' viewpoints on creative traits and, strategies for creativity development<sup>2</sup>

Elena Karpova<sup>a</sup>, Sara Marcketti, Caitlyn Kamm

<sup>a</sup>Department of Apparel, Events, and Hospitality Management, 31 MacKay Hall, Iowa State University, Ames, IA 50011-1121, USA

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## Research: Who is creative?

- Researchers at a major publishing company investigated the lack of creative productivity
  - Studied all employees for 3 months
- Finding: the **only** difference between creative and not creative people was:
  - **Creative people thought they were creative**
  - **Not creative people believed they were NOT creative**

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## Creative people.....

- Challenge assumptions, see things from different perspectives, make connections, think positively, take risks, and tolerate mistakes and failures



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## Cultivating creative thinking

- Creative thinking is **an attitude.**
- Creative thinking is **a way of thinking that can be trained.**
- Your attitude toward creativity determines your potential to solve problems, come up with interesting and innovative ideas, be unique and original.

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## Creative Thinking Strategies

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## “Bug” list

- Take a moment to think about what bugs you about teaching (students/learning/the classroom).
- You have 2 minutes to write down as many bugs as you can (number them)
- Going around the room, please state your name, department, total number of your bugs, and your “favorite” bug

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## Framing your Bug

- In groups of 3-4, select one of your favorite bugs to use as an example
  - ▣ Person with most colors on can be in charge of selection
- To generate ideas for solving your bug, it helps to frame it so you know what you’d like to accomplish
- **How to frame your bug?** Examples

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## Framing your Bug

Bug	Question
Expensive textbooks	How to decrease cost of textbooks?
Not enough parking on campus	<b>How to increase parking on campus?</b>
Cannot hear teacher because students talking in class	How to stop students from talking during class (and distracting others)?
Sitting in traffic	How can I avoid to be stuck in traffic?

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## Framing your Teaching Bug

- Working in groups, formulate your bug in the form of a question, keeping in mind what exactly you want to accomplish

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## Re-framing your Bug

- Re-framing your bug (problem), can open up new opportunities and increase the number of ideas to resolve the bug
- Let's look at some examples

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### Reframing your problem: Example 1

- Problem: *How to plan the best birthday party?*

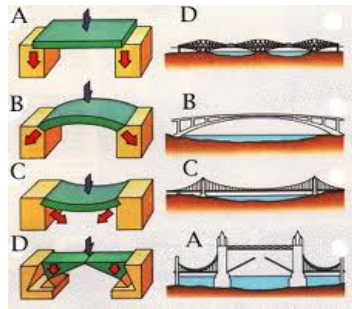
1. *What is the best way to celebrate birthday?*

*What questions can we ask to reframe the problem?*

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## Reframing problem: Example 2

- Problem: *How to build a bridge over the river?*



How to reframe the problem to open up more opportunities?

## Reframing problem: Example 2

- Problem: *How to build a bridge over the river?*

*What are other ways to get to the other side of the river?*



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## Re-framing parking bug

Problem	Re-defined Variations of the Challenge
How to increase parking on campus?	Why there is not enough parking on campus?
	How can we reduce the number of cars driving to campus?
	What are alternative ways of getting to campus?
	How can we motivate people to use alternative ways of getting to campus?
	How can student car-pooling be arranged easily and effectively?
	What are alternative ways to traditional parking options?
	How to avoid everyone parking at same time?

## Re-framing your Teaching Bug

- Working in groups, you have 2 min to come up with as many questions as possible to re-frame your bug

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## Visual Entry

- ▣ Working individually, select one of your bugs.
- ▣ Choose an arbitrary image.
- ▣ Place the image next to the problem/challenge.
- ▣ Generate ideas to connect the arbitrary entry to the focus.

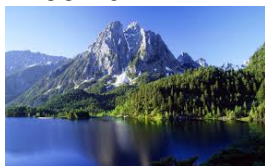


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## Visual Entry

**Words that you thought of when you saw the mountain**

- ▣ Foreboding
- ▣ Clear skies
- ▣ Many ways of getting to mountain



**Possible solutions/ways of thinking about your bug.**

- ▣ Is class a welcoming environment? How to make it more so?
- ▣ Students don't have obstacles to getting to class.
- ▣ Do students know why being on time is important? Is there proper reward for being on time?

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## Imagination Strategy

- To feed your imagination, ask yourself the most creative and interesting questions.
- Many innovative ideas begin with the simple question:

***What if.....?***

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## Imagination Strategy: *What if*ing

- What if every student was 100% motivated?
- What if the students' work was visible to the world?
- What if I lost my voice permanently and could no longer "teach"?
- What if students come to the classroom already knowing ALL the assigned material (material you are going to teach)?
- What if people had perfect photographic memory?
- ***Let's choose one scenario to generate ideas***

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- CELT for hosting workshop
- Thank You for attending!

One minute reflection to turn in:

- **What was most surprising to you?**
- **What you might use in the future?**

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