Leveraging Psychology to Create Compelling Learning Experiences

Part 2: Thinking and Motivation

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overview
Thinking
Thinking

How do we balance thinking skills and content knowledge so they complement one another?

Principles to remember
Thinking
How do we balance thinking skills and content knowledge so they complement one another?

Principles to remember

Thinking includes diverse skills and processes:

formal reasoning, problem solving, analogies, critical thinking...
Thinking

How do we balance thinking skills and content knowledge so they complement one another?

Principles to remember

Thinking skills can be context-specific, and rarely transfer as well as we assume.
Thinking

How do we balance thinking skills and content knowledge so they complement one another?

Principles to remember

Focus on the underlying structure of problems aids transfer

• Repeated practice across contrasting examples
Thinking

How do we balance thinking skills and content knowledge so they complement one another?

Principles to remember

Critical thinking is particularly tough to address

- Multiple barriers (just ask faculty...)
- Cuing (when to versus how to)
Reflect on what students should be able to do at the end of the course. This counters the tendency to focus exclusively on content. Then, align planned learning activities to these skills. For example, if critical reading is important, use group annotating tools.

Present as many problems as students need to develop mastery. Vary surface details across problems. Try quizzing.

Are there online tools that simulate important skills? Could case studies, problem based learning or role playing work?
Demonstration, illustration, examples
Thinking
BIO 100 Online Laboratory Course
Larry MacPhee, Northern Arizona University
Example: Practical Application Assignments

Introduction to Psychology Team, Northern Arizona University

- Brief writing assignments modeled on real-world scenarios

- Examples:

  “Should the School Board Discourage or Encourage Bilingualism?”

  “Should School Funds Be Used to Buy Memory–Expanding Computer Games?”

  “How should you retrain your destructive puppy – so your roommates won’t insist that he be rehomed?”
“Clients” students work with on their designs:

- Individual personas
- Email addresses
Try this reasoning task...
If a card has an odd number on one side, it has an animal on the other side.

Choose ALL of the cards you would need to turn over in order to verify that the rule is being followed. Choose ONLY the cards that would help you verify the rule.
If a card has an odd number on one side, it has an animal on the other side.

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Choose ALL of the cards you would need to turn over in order to verify that the rule is being followed. Choose ONLY the cards that would help you verify the rule.
Try another rule...
If a person is drinking alcohol, he/she is over 21.

Choose ALL of the cards you would need to turn over in order to verify that the rule is being followed. Choose ONLY the cards that would help you verify the rule.

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If a person is drinking alcohol, he/she is over 21.

Choose ALL of the cards you would need to turn over in order to verify that the rule is being followed. Choose ONLY the cards that would help you verify the rule.

1. 17  
2. Juice  
3. Age 30  
4. Age 19

Back
If a person is drinking alcohol, he/she is over 21.

Choose ALL of the cards you would need to turn over in order to verify that the rule is being followed. Choose ONLY the cards that would help you verify the rule.
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If a person is drinking alcohol, he/she is over 21.

Choose ALL of the cards you would need to turn over in order to verify that the rule is being followed. Choose ONLY the cards that would help you verify the rule.

1. Beer
2. Juice
3. Age 30
4. Margarita
What does this tell us about reasoning?
application
Thinking
Application

First:
• Review the resource grid sheet.
  • Alternatively, https://sites.google.com/site/focusremember/

Then:
• Review the worksheet titled Applying It, Part 2a
• Define a teaching challenge.
• Using concepts from today, articulate a strategy for addressing the challenge.
  • Also consider the gap between where students are and where they need to be
Overview, Illustrations, Examples
Motivation and Self Regulated Learning
Consider:

1. A class you *thought* you’d be interested in, where you were highly motivated

2. A class you did *NOT* think you’d be interested in, where you were highly motivated

3. A class you *thought* you’d be interested in, where you were *NOT* highly motivated
<table>
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Classic research findings on motivation

• Role of incentives?
  • Extrinsic/intrinsic
• Self-determination theory (Deci & Ryan)
  • Competence, relatedness, and autonomy
• Academic self-efficacy
• Willpower / “ego depletion”
• Mindset (Dweck)
Borrowing from game design?

- Principles of *flow*
- Role of failure?
- Quick start and multiple attempts
- Sense of mission
- Narrative
- Knowing where you stand
Dickey’s principles

**Engaged Learning**

- Focused goals
- Challenging tasks
- Clear & compelling standards
- Protection from adverse consequences for initial failures
- Affirmation of performance
- Affiliation with others
- Novelty & variety
- Choice

**Engaging Games**

- Focused goals (narrative, character roles, interaction with non-playing characters and other players; perspective)
- Challenging tasks (Setting, action hooks, resource hooks, tactical & strategic hooks, time hooks)
- Clear & compelling standards
- Protection from adverse consequences for initial failures
- Affirmation of performance
- Affiliation with others
- Novelty & variety (narrative arcs)
- Choice

Design Suggestions

Have a Plan

Just like we plan our learning objectives, we should map out how we will keep students motivated throughout the course. Our materials can foreground why students are learning, not just what they are learning.

“Early and Often”

Designing around frequent low-stakes assignments rewards effort, creates motivating feedback and discourages procrastination.

Build Routines

Try to set consistent times when students are expected to log in or turn in work. Good habits put fewer demands on willpower.
Self regulated learning:

“conscious planning, monitoring, evaluation, and ultimately control of one’s learning”

NILSON, 2013
Attention Matters!™ is a freestanding module that takes about 1-2 hours for students to complete. It uses interactive activities and video demonstrations to show students the limitations of attention and address common misconceptions about how attention and memory work.

The project is also described in detail in chapter 24 of this free E-book: http://teachpsych.org/ebooks/useoftech

MAKING CHANGES THAT LAST

PREP
Think carefully about what you'll need in order to be successful at your life change. Do you need to change your environment or routines? Is there a gadget or aid that will help you? Get these up.

PSYCH
Pick what you want to change and think about WHY you want to change it. Get excited and start envisioning life after the change!

PERSPIRE
Put your plan into place. Be sure to track your progress, making specific notes about when you succeeded and when you didn't.

PERSEVERE
Almost everyone slips on their way to making change. Plan for this and think about how to get back on track. Don't give up!

PERSIST
Keep your plan over the long term. Remember, major changes can take months to become established!

Remember
- Make sure your goals are specific, measurable, phased, positively oriented, and something you see center.
- Set up a system such as a diary, spreadsheet or planner to track progress.
- Make sure your environment makes it easy to keep up your change.
Tech Tools for Focus

- **Freedom**: A tool to block distracting websites.
- **SelfControl**: A free Mac application to help avoid distracting websites.
- **Cold Turkey**: A tool to block distracting websites.
- **Pocket Points**: A program where students earn points for good behavior, which can be used for discounts and rewards.
- **Moment**: An app to help users track their phone usage.
application
Motivation and Self Regulated Learning
Application

First:
• Review the resource grid sheet.
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Then:
• Review the worksheet titled Applying It, Part 2b
• Define a teaching challenge.
• Using concepts from today, articulate a strategy for addressing the challenge.
  • Also consider: What do you need to do or have in order for this strategy to succeed?
Further thoughts?
Thank You – and please feel free to stay in touch.

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