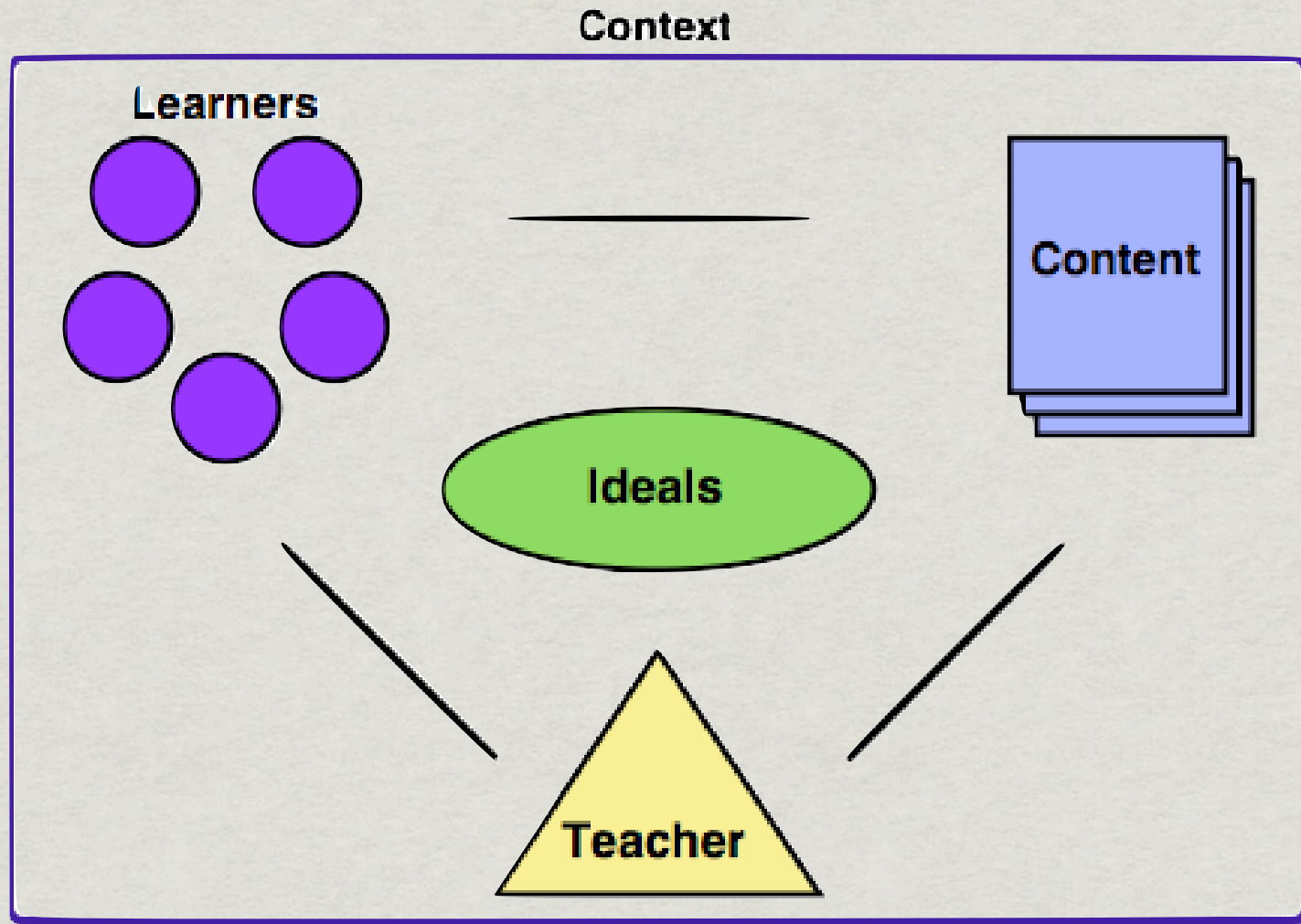


Course Sampler

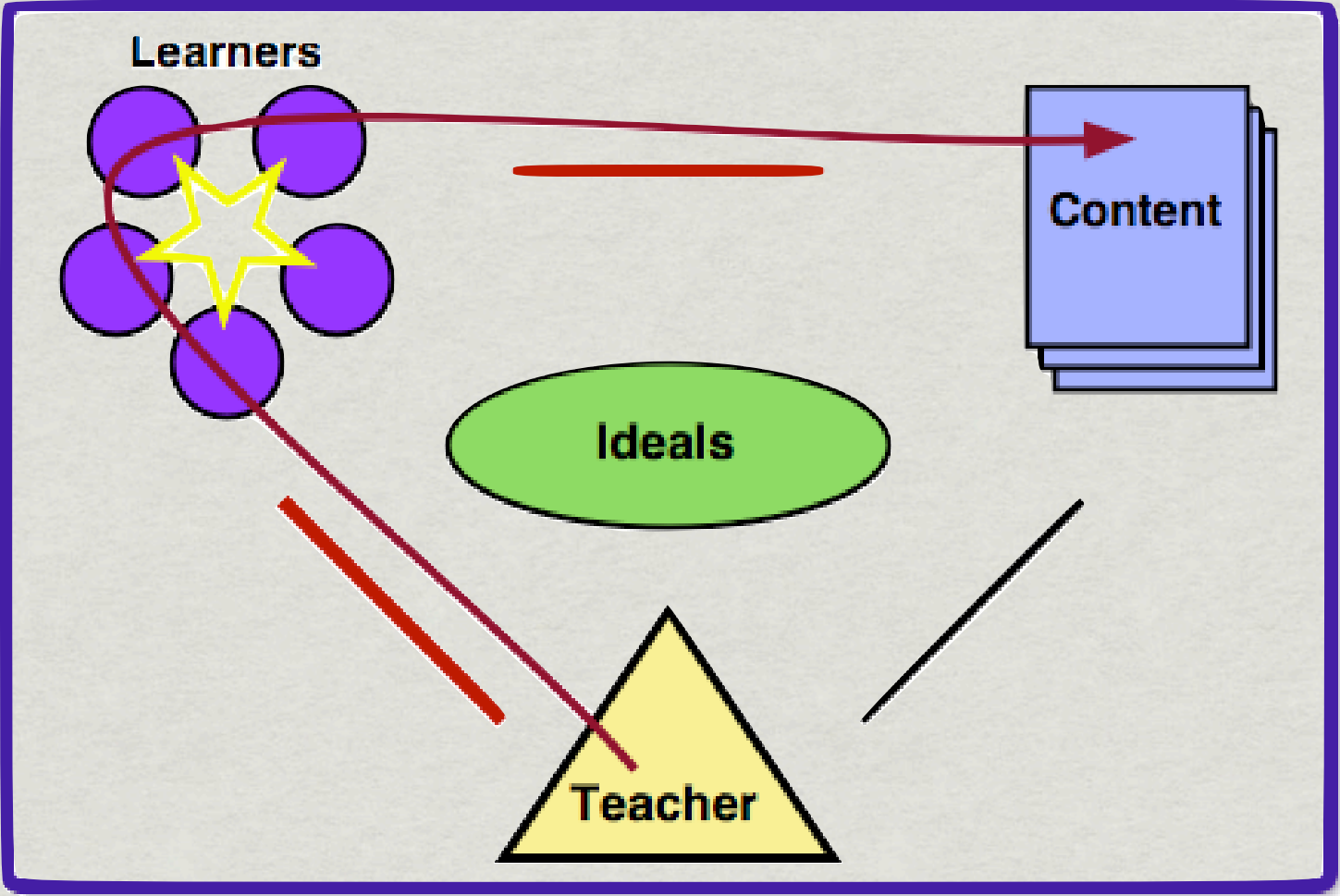
UBC/KFUPM workshop 2009





General Model of Teaching - Pratt

Context



Content

Ideals

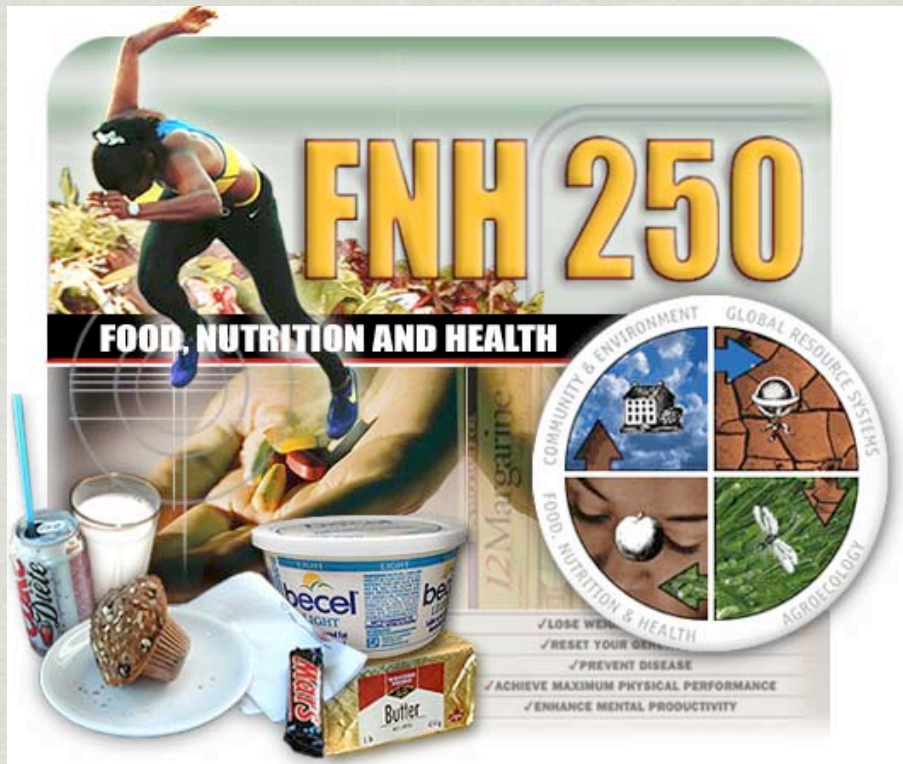
Teacher

Collaborative Perspective

Key Design Approaches

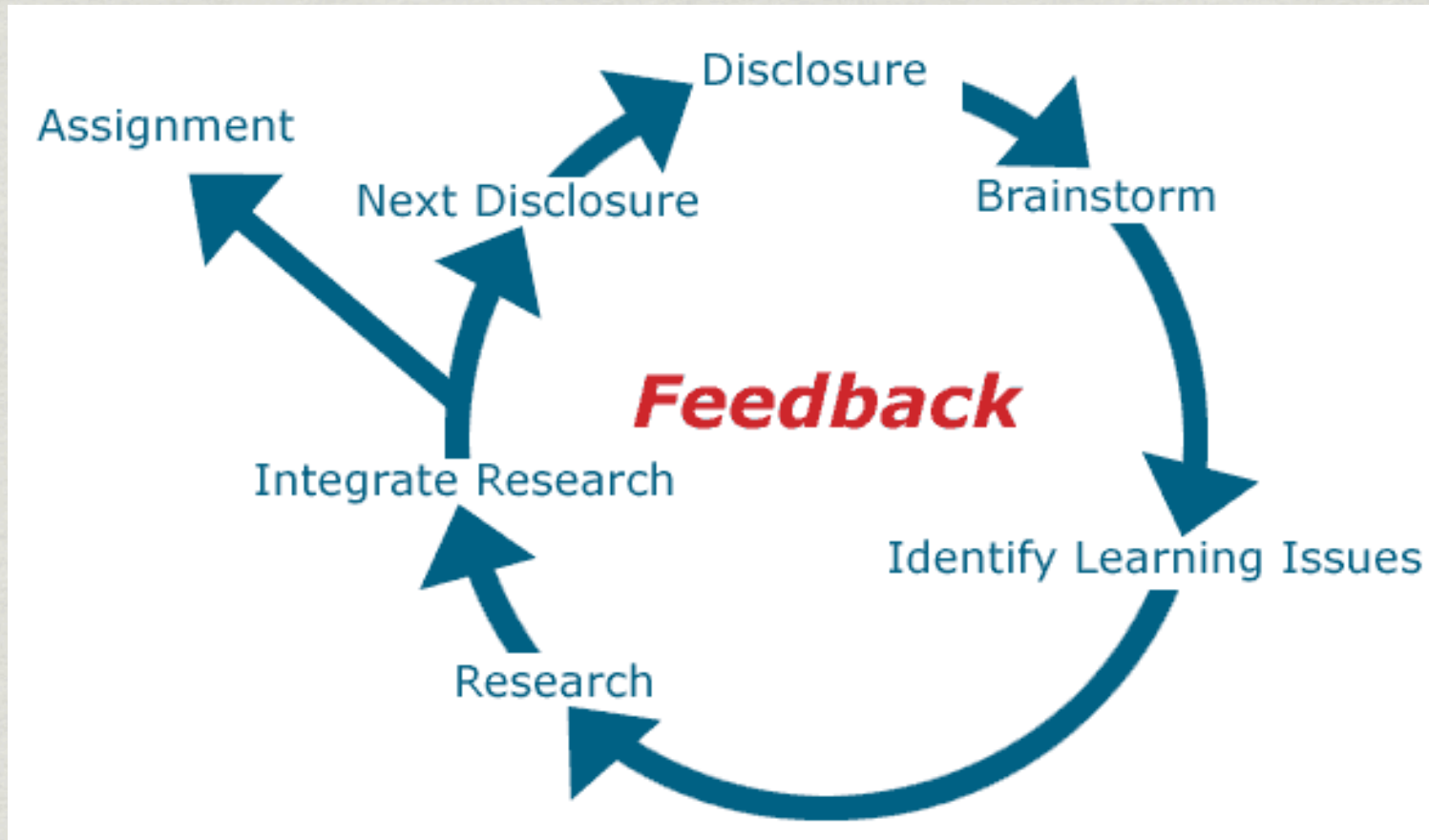


Problem-based Learning



- Cohort-based, PBL course with up to 28 students, and a 7:1 student/facilitator ratio
- Students from around British Columbia
- Extensive PBL group process activities with individual assignments and an invigilated final examination
- Students must participate in their PBL group discussions - pass/fail basis
- Case structure, with careful organization and scheduling of course content
- Formative and Summative evaluation, within cases and for group process skills

PBL Model



Student Apprentices/Professionals

ETE C 533

Technology in the Mathematics and Science Classroom

$E=mc^2$

$C_5H_{12}N_2O$
116.16 g/mol

UBC
THE UNIVERSITY OF
BRITISH COLUMBIA

Technology in the Math and Science Classroom

- * How do people teach and learn mathematics and science with digital technologies?
- * The integration of cognitive psychology, computer science, and education provides us with a framework to study the cognitive and social affordances of technology in the mathematics and science classroom.



Genres of teaching and

* Knowledge representation

* Knowledge diffusion

* Learning-on-demand

* Embodiment

• Dynamic visualization tools

• Computer simulations

• Collaboratories

• Networked databases

• Hand held devices

• Virtual reality

NEGOTIATING KNOWLEDGE INDIVIDUALLY AND IN COMMUNITY

Discussion Messages: **MB-L3: Synthesis Forum- Social and Cognitive Affordances of Technology**

Compose message | Update listing | Search | Mark all as read | Message options

Display: All | Unread | Threaded | Unthreaded | Select topic: MB-L3: Synthesis Forum- Social

Status	Subject	Auth
9/9	Comparison of the Differ...	
	Comparison of the Differ...	Garsc
	Re: Comparison of the Dif...	Megh
	Re: Comparison of the Dif...	Wanc
	Re: Comparison of the Dif...	Louis
	Re: Comparison of the Dif...	Davic
	Re: Comparison of the Dif...	Garsc
	Re: Comparison of the Dif...	Mich
	Re: Comparison of the Dif...	Garsc
	Re: Comparison of the Dif...	Sherr
9/9	Group A - Learning Enviro...	
	Group A - Learning Enviro...	Wanc

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Article title [] Search

Post a paper to CiteULike

All very easy - assuming you read all the instructions carefully

Step 1

- Windows users:**
 - Internet Explorer: Right click the Post to CiteULike link below and choose 'Add to favourites...'. Some versions of IE will say: "You are adding a favorite that may not be safe. Do you want to continue?" You can say yes, as the bookmarklet is safe.
 - Firefox: Right click the Post to CiteULike link below and choose 'Bookmark This Link...'
- Mac users:**
 - Safari: Drag the Post to CiteULike link below to your bookmarks bar
 - Firefox: Right click the Post to CiteULike link below and choose 'Bookmark This Link...'
 - Microsoft Internet Explorer: Not known to support CiteULike
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Right-click this link and add it as a bookmark: [Post to CiteULike](#)

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All sciencesim's items (121) [] del.icio.us search

« earlier | later » page 1 of 13

The Molecular Workbench (MW) [save this](#)
 software offers interactive, visual simulations that have been widely used to teach and learn science and engineering at all levels of science education. It is free and open-source software

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tag options
 » view as cloud | list
 » sort by alpha | freq
 » use minimum: 1, 2, 5
 » show | hide bundles

Learning Environment 1 with Teacher F (Mathematics Graphing Calculators)



Interview with Teacher F

[56K](#)

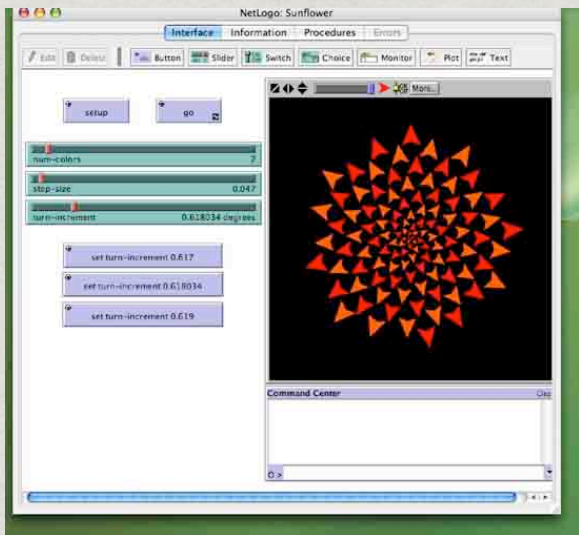
[Broadband](#)



Classroom video

[56K](#)

[Broadband](#)



NETLOGO (SIMULATIONS)

Welcome to Flatland!

You're the brown square and you've come to pay a visit to your friend the gray triangle, who is wearing a terrific red, green, and blue outfit.

Use the forward/backward/left/right buttons to navigate, or turn simply by dragging the yellow point and relocate yourself by moving the red point.

When you've pressed **Show Spaceland**, you can see the view of Flatland from above—like humans would see it. But when you **Hide Spaceland** and **Show Flatland**, then you see only your view—the view from your red eye facing toward your yellow corner. In the Flatland view, things appear somewhat darker the farther away they are. Try understanding the Flatland view by comparing it to what you can see in Spaceland. Then, hide Spaceland and try navigating only by Flatland view.

After fooling around for a while admiring the view, see if you can visit each of the spots where these photographs of your friend the triangle were taken. For each photo, use Spaceland to help pose the triangle (adjust its shape) and choose your position and view. If the first one is easy, try hiding the Flatland view while you work on each of the other ones—showing it only once you've found the photo was taken to check your work.

Photo #1 - Passport photo
Photo #2 - Over the shoulder

GEOMETER'S SKETCHBOOK

Rotating houses

Rotate this building until you get the right side view

Question 2
 Rotate the building, until you see the same shape.

OK

Next question

WISEWEB (MATHEMATICS)

EXPLORATORIUM



LAND USE IMPACT TOOL

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Podzols

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Other Examples

- Bog
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Soil Quality

- Soil Quality Background
- Assessment of Soil Quality

Dedication

Second Growth Douglas Fir Forest



<http://soilweb.landfood.ubc.ca/luitool/>

Applied Geophysics

AGLO

1. Setup
2. Properties
3. Surveys
4. Data
5. Processing
6. Interpretation
7. Synthesis

Introduction 1. Setup 2. Properties 3. Surveys 4. Data 5. Processing 6. Interpretation 7. Synthesis Conclusion

Interpretation

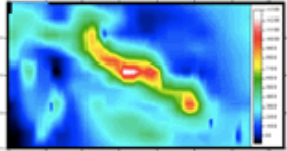
- Goals
- Model Types
- Models From Data**
- Information

Options

- Activity A
- Printable Version

Models From Data

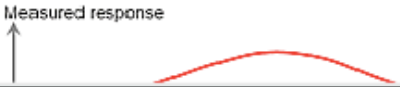
As mentioned under '**Goals**', the first aspect of interpretation involves explaining geophysical data in terms of relevant physical properties. In our map of magnetic response (shown to the right), does the pattern indicate the location, size and depth of a Jurassic granite pluton? Not directly! The map indicates where rocks are more magnetically susceptible than their surroundings.



Geophysical data are always sparse and Earth is complicated. Therefore many configurations of properties will all be equally capable of causing the data. This "non-uniqueness" is characteristic of geophysical work. As an example, this figure shows how the same geophysical data can be measured over all four different targets.

[mouseover picture](#)

Measured response



Video Introduction Glossary Acknowledgements

<http://www.eos.ubc.ca/public/resources/appgeop/framework/index.htm>