STUDENT-CENTERED TEACHING

or

How can I teach so that students will learn?

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For your consideration …

- Where are you now?
- How do you learn?
- Where are we going?

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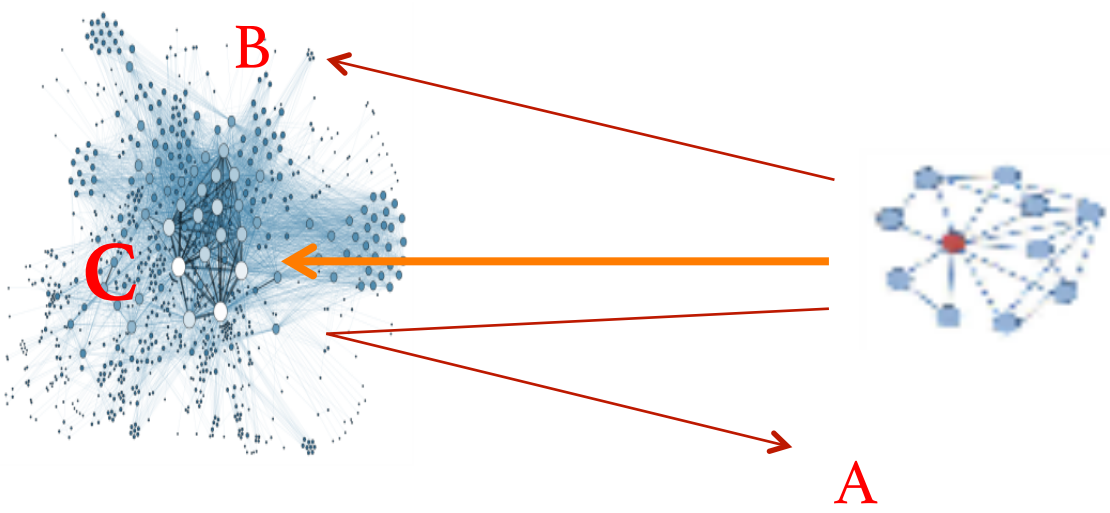
What is learning?

STUDENT-CENTERED TEACHING

What is learning?

STUDENT-CENTERED TEACHING



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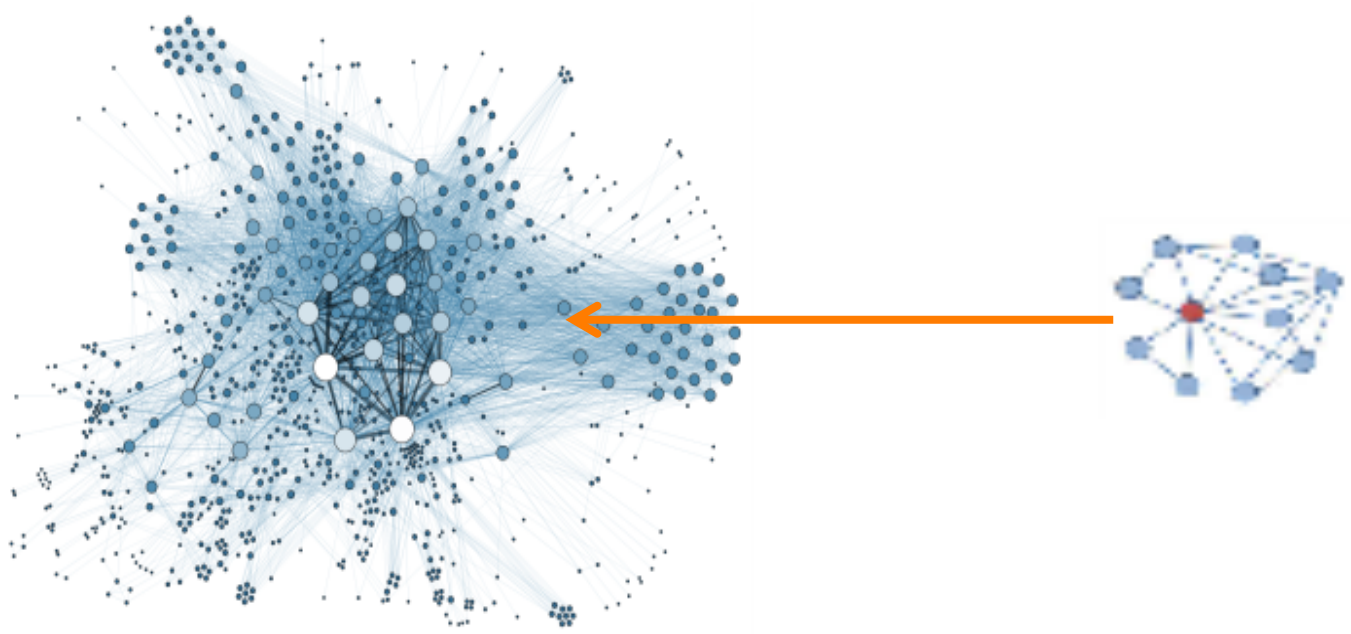
Where are you now?

PRIOR KNOWLEDGE



STUDENT-CENTERED TEACHING

Where are you now?

PRIOR KNOWLEDGE

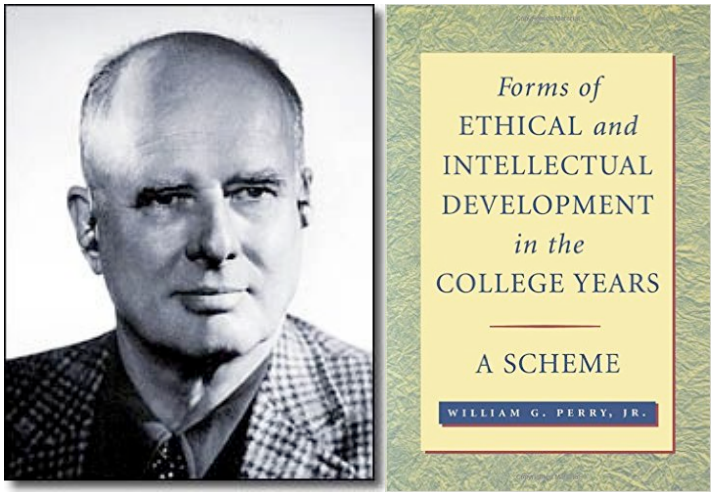
- CORRECT OR INCORRECT
- DEEP OR SURFACE
- IMPLICIT OR EXPLICIT
- INCLUDES ATTITUDES
- INCLUDES SKILLS AND HABITS
- PERSISTENT

STUDENT-CENTERED TEACHING

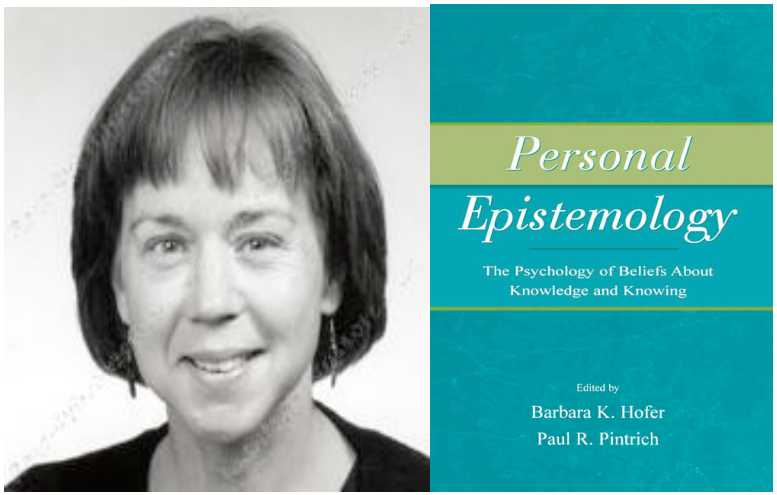
Where are you now? 2

STUDENT-CENTERED TEACHING

Where are you now? 2



WILLIAM PERRY



BARBARA HOFER

STUDENT-CENTERED TEACHING

Where are you now? 2

DUALISM: There are Right and Wrong answer, and those answers are held by authority figures.

MULTIPLICITY: There is uncertainty. Things can be known, if we use the right method. There are some things we'll never know.

RELATIVISM: Context matters, as does one's perspective or point of view. Knowing is active and requires individual effort. Meaning changes as we consider other points of view.

COMMITMENT WITHIN RELATIVISM: Knowing requires making personal meaning (and choices) in the face of legitimate alternatives.

STUDENT-CENTERED TEACHING

Where are you now?

- They come to our classes with knowledge, beliefs, and skills related to our topics/disciplines, that may help or hinder their learning.

- They come to our classes with orientations to learning and knowledge that will affect how they approach learning in your class.

STUDENT-CENTERED TEACHING

Where are you now?

- They come to our classes with knowledge, beliefs, and skills related to our topics/ disciplines, that may help or hinder their learning.
- They come to our classes with orientations to learning and knowledge that will affect how they see what it means to be in your class

What can we do?

- Developmental theory tell us that people are very attracted to positions just above theirs, even if they can't yet function in them.
- Practice engaging tasks and questions slightly beyond one's position facilitates movement at the developmental and cognitive level
  - Hofer has suggested that an individuals PI, may vary among subject matter. Taking a relativistic approach with literature, but a dualistic approach with math and science.

STUDENT-CENTERED TEACHING

For your consideration …

- Where are you now?
- How do you learn?
- Where are we going?

STUDENT-CENTERED TEACHING

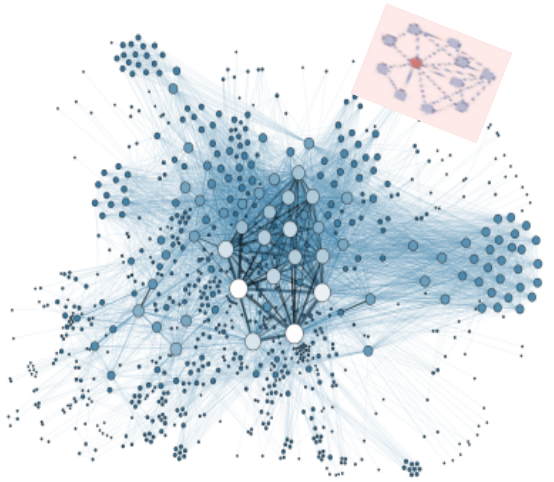
How Do Student Learn?

CONSTRUCTIVISM

STUDENT-CENTERED TEACHING

How Do Student Learn?

Assimilation



Adding new knowledge

Accommodation

Conceptual restructuring

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How Do Student Learn?

Assimilation

Accommodation

- Activate prior knowledge
- Emphasize practice, feedback, reflection – ACTIVE LEARNING
- Motivate students toward meaningful goals.

STUDENT-CENTERED TEACHING

For your consideration …

- Where are you now?
- How do you learn?
- Where are we going? and
- What will we accomplish today?

Boat Building 101

- **Wood**

- The traditional boat building material used for hull and spar construction. It is buoyant, widely available and easily worked. it is a popular material for small boats (of e.g. 6-metre (20 ft) length; such as dinghies and sailboats). Its abrasion resistance varies according to the hardness and density of the wood and it can deteriorate if fresh water or marine organisms are allowed to penetrate the wood. Woods such as Teak, Totara and some cedars have natural chemicals which prevent rot whereas other woods, such as Pinus radiata, will rot very quickly. The hull of a wooden boat usually consists of planking fastened to frames and a keel. Keel and frames are traditionally made of hardwoods such as oak while planking can be oak but is more often softwood such as pine, larch or cedar.
- Plywood is especially popular for amateur construction but only marine ply using waterproof glues and even laminates should be used. Cheap construction plywood often has voids in the interior layers and is not suitable to boat building as the voids trap moisture and accelerate rot as well as physically weaken the plywood. No plywood is rot resistant and should be coated with epoxy resin and/or a good paint system. Varnish and Linseed oil should not be used on the exterior of a hull for waterproofing. Varnish has about 60% of the water resistance of a good paint system. Only boiled linseed oil should be used on a boat and only in the interior as it has very little water resistance but it is very easy to apply and has a pleasant smell. Note that used linseed rags should not be left in a pile as they can catch fire. A valuable 200-year-old waka (Maori canoe)caught fire in New Zealand in June 2014 when restorers left rags piled overnight. Raw linseed oil is not suited to boats as it stays damp and oily for a long time. Mildew will grow well on raw linseed oil treated timber but not on boiled linseed oil. More recently introduced tropical woods as mahogany, okoumé, iroko, Keruing, azobé and merbau.[2] are also used. With tropical species, extra attention needs to be taken to ensure that the wood is indeed FSC-certified.[3][4] Teak or iroko is usually used to create the deck and any superstructure. Glue, screws, rivets and/or nails are used to join the wooden components. Before teak is glued the natural oil must be wiped off with a chemical cleaner, otherwise the joint will fail.
- Some types of wood construction include:

Boat Building 101

WOODEN SAILBOAT

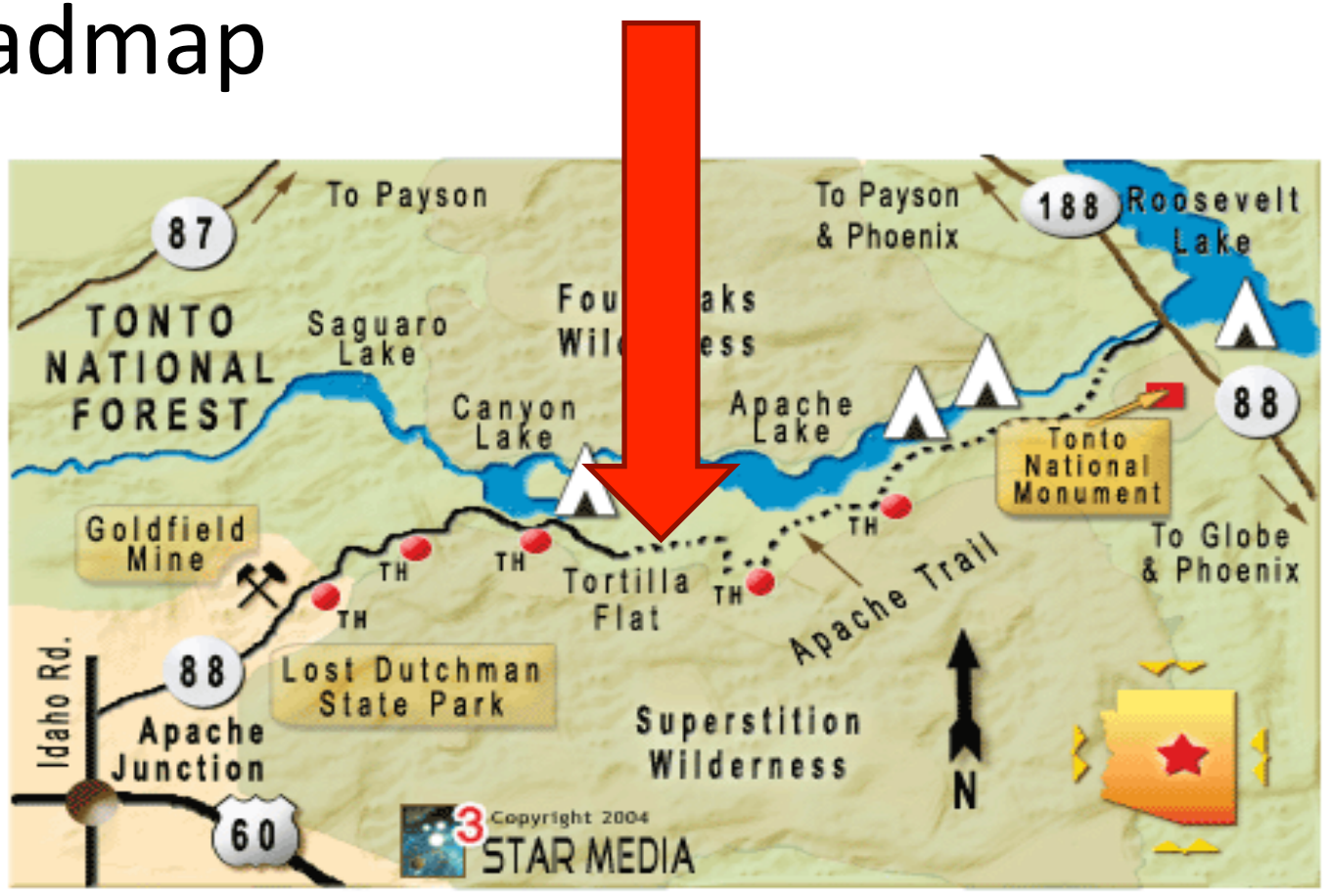
ITEM # 66623-45 (45x8x36cm)

STUDENT-CENTERED TEACHING

Where are we going?

- How do I want students to be different by the end of this course/section/ lecture/tutorial/ encounter?
- What do I want them to be able to do by the end?
- What new standard will they achieve?

Roadmap



Here is where we've been, where we are, and where we are going

STUDENT-CENTERED TEACHING

THINK LIKE A HISTORIAN

- Within the context of a specific historical argument, students will be able to articulate the usefulness and limitations of a variety of primary sources.

APPRECIATE LITERATURE

- Given two analyses of the same literary text, students will be able to identify the main arguments, describe the analytical strategy, and evaluate the strengths and limitations of each.

READ PHILOSOPHY CRITICALLY

- Given a claim, students will be able to refute/support it from two philosophical perspectives, and explain which perspective provides the stronger argument.

APPROACH THE WORLD SCIENTIFICALLY

- Students will be able to design an experiment to test _____ using two different methods from the course, describe the power and limitations of each, and argue for one over the other.

STUDENT-CENTERED TEACHING

READ CRITICALLY

- When engaged in close reading, students will be able to detect patterns, contradictions, and similarities in the text and develop questions about their significance.

READ SCIENTIFIC LITERATURE

- Given a scientific paper, students will be able to assess the validity of stated results in light of the methods. (Or the conclusions based on the results.)

UNDERSTAND THE SIGNIFICANCE OF ART HISTORY

- Given access to a curated exhibition, students will be able trace the narrative arc and infer the perspective or rationale of the curator.

WRITE CRITICALLY AND REFLECTIVELY

- Students will be able to compose an essay in the style of Samuel Pepys, and write an analysis of that composition.

The Benefit of Learning Goals

- Focus your attention
- Allow students to invest and make meaning
- You understand what you've helped students learn; students understand what they got out of the course

STUDENT-CENTERED TEACHING

REVIEW

- WHERE STUDENTS ARE
  - PRIOR KNOWLEDGE and DEVELOPMENTAL FRAMEWORK
- HOW STUDENTS LEARN,
  - ACTIVATE PRIOR KNOWLEDGE
  - PRACTICE, REFLECTION, and FEEDBACK.

But we start the entire process by deciding:

- HOW STUDENTS WILL BE DIFFERENT AT THE END
- WHAT WE WANT THEM TO BE ABLE TO DO

BACKWARD DESIGN

FINAL THOUGHTS

STUDENT-CENTERED TEACHING

THANK YOU