I'm not against computers, but I think they have their place, and it's not everywhere. When you're speaking on the Senate floor, you should be speaking from a lifetime of experience, not from what you punch up on a computer Dianne Feinstein



Punya Mishra & Matthew J. Koehler*

Michigan State University
December 2008

we both want to speak

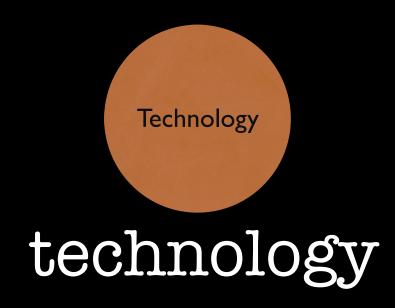
we both want to speak eat



I "won"

Punya eats first

Byron Brown will answer questions





classroom response systems learning management systems mobile devices

(phones, mp3 players, e-readers, internet devices)

web2.0 / social media

online video

participatory media

(youtube debates)

second life cloud computing





online learning

(classroom management, content production, social presence) games & simulations web based resources/data collaborative tech immediate student feedback assessment tech multi-modal teaching new Literacies

Pedagogy



content

dramatically changed by technology

Content

mathematics
science
engineering
history
political science
education

•

•

•

contexts

online/virtual lifelong learning open courseware (value in the age of free) credentials (in an age of mix-n-match) outsourcing moving away from the desktop

what does this mean for teaching and learning with technology?

everything is changing

changing

changing roles

changing responsibilities

changing practices

changing cultures

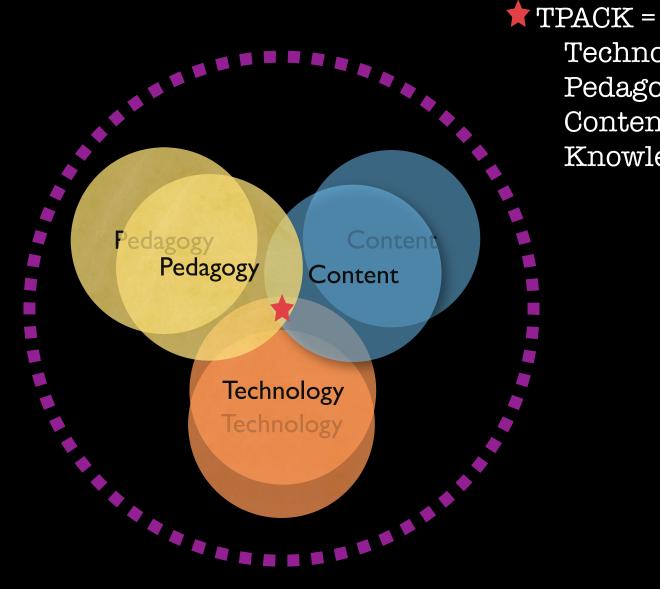
hard to predict

teaching and learning with technology becomes ...



A moving target

How can we think about teaching and learning that accounts for technological change?



Technological Pedagogical and Content Knowledge

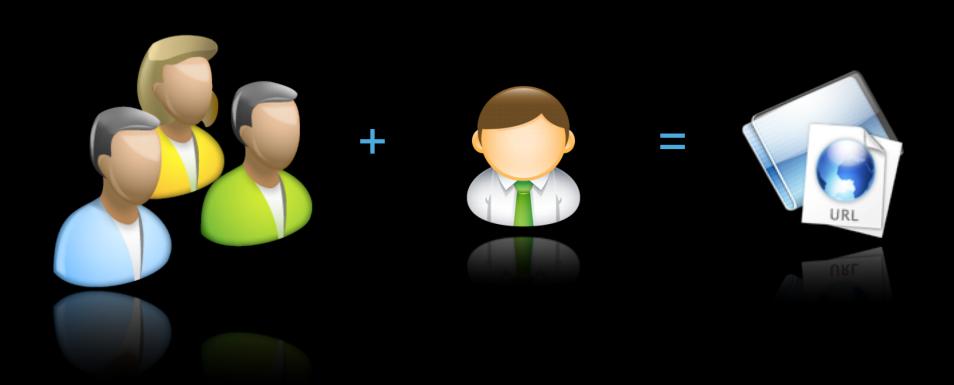
Contexts

Learning Technology by





Faculty Development Course



Designing online courses



Prototype a section of the course

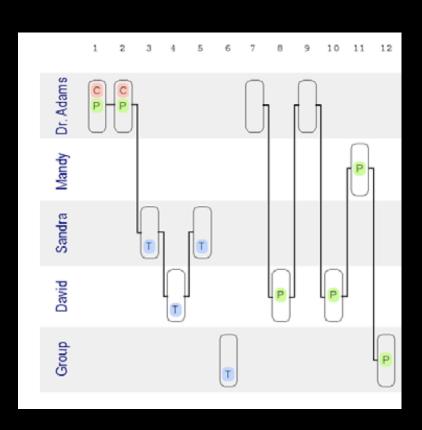


Pilot a section of the course

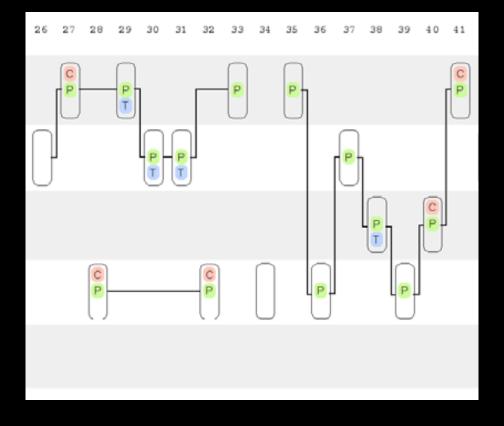


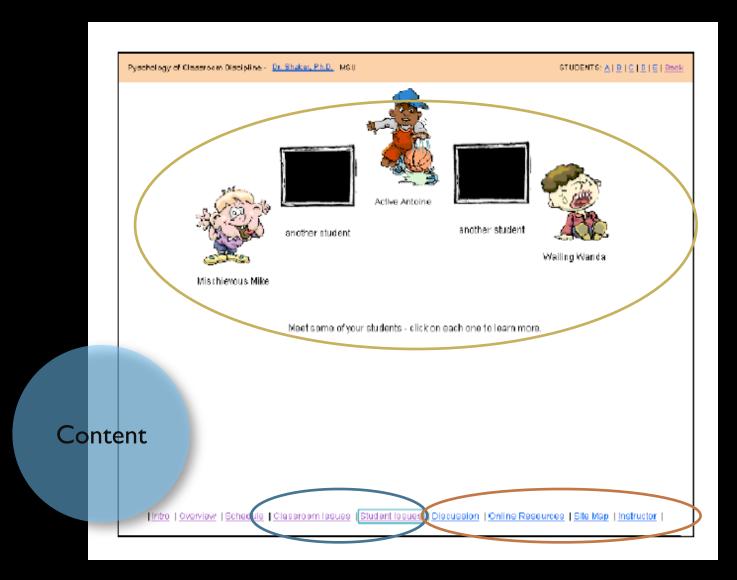
Redesign a section of the course





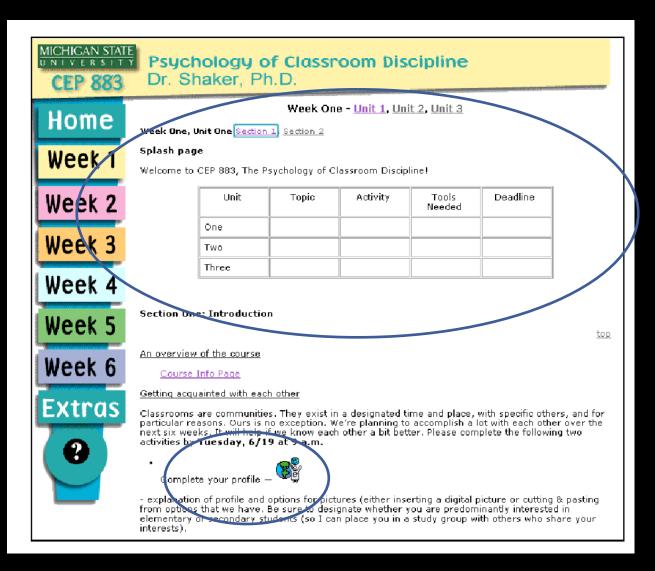




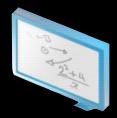


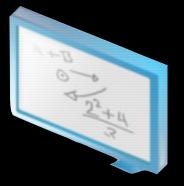


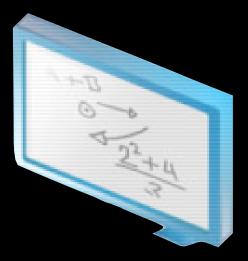
Technology



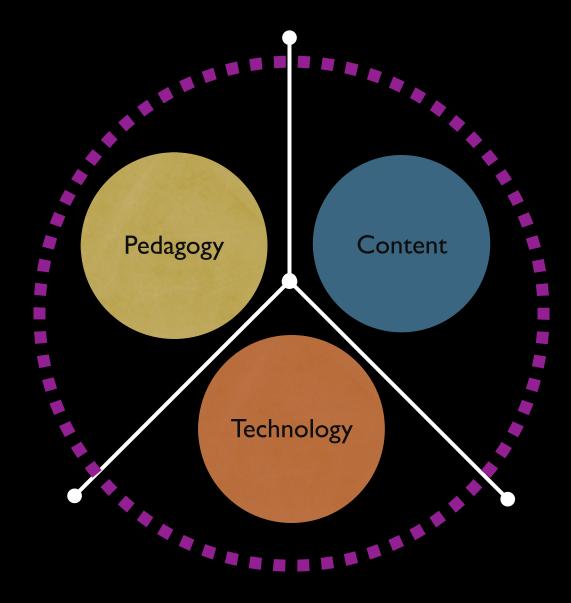






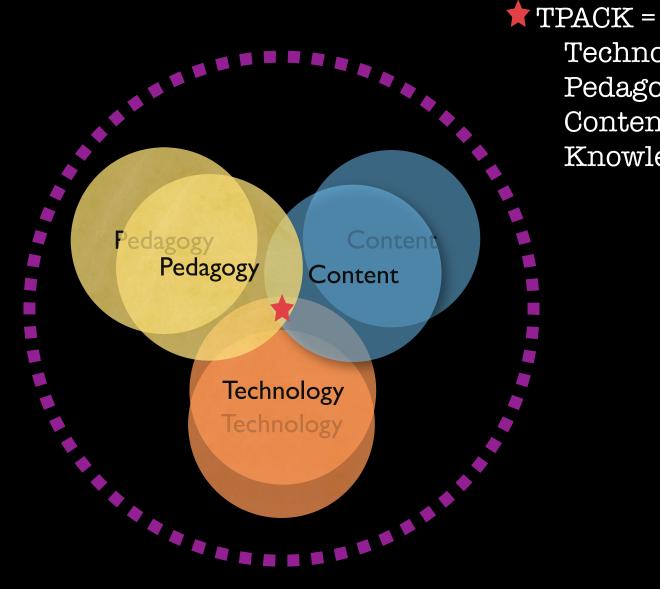


what doesn't work



Contexts

Instead, what works



Technological Pedagogical and Content Knowledge

Contexts



Thanks, Matt

'tis all good... but

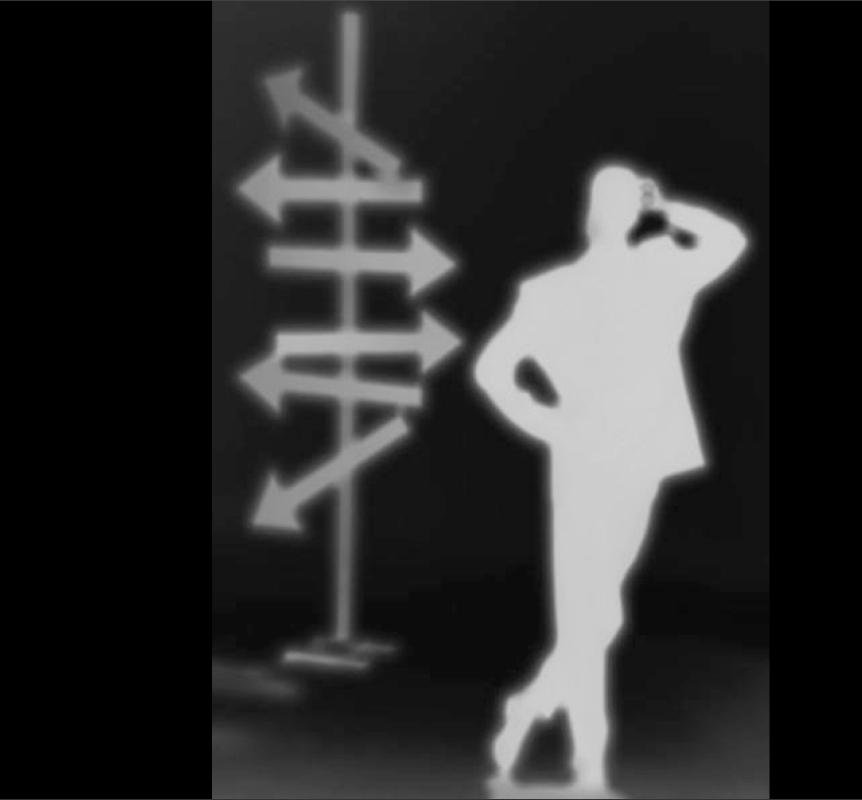
So what?

Implications & examples

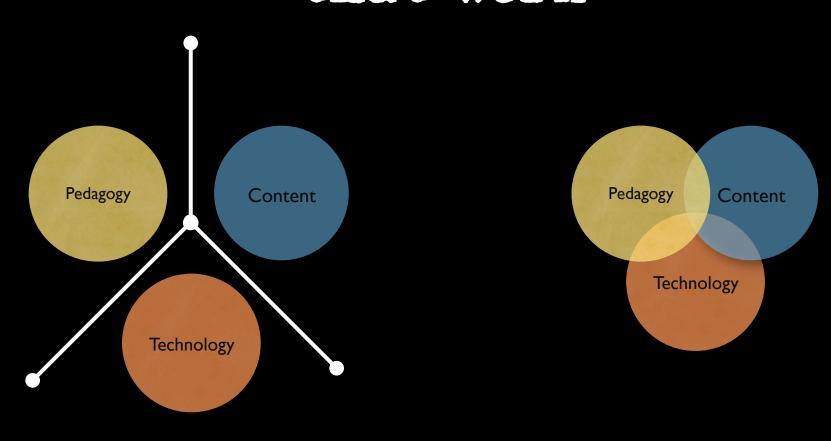
Implications | | | | | | | | | |



Developing approaches that work



Developing approaches that work



Learning Technology by

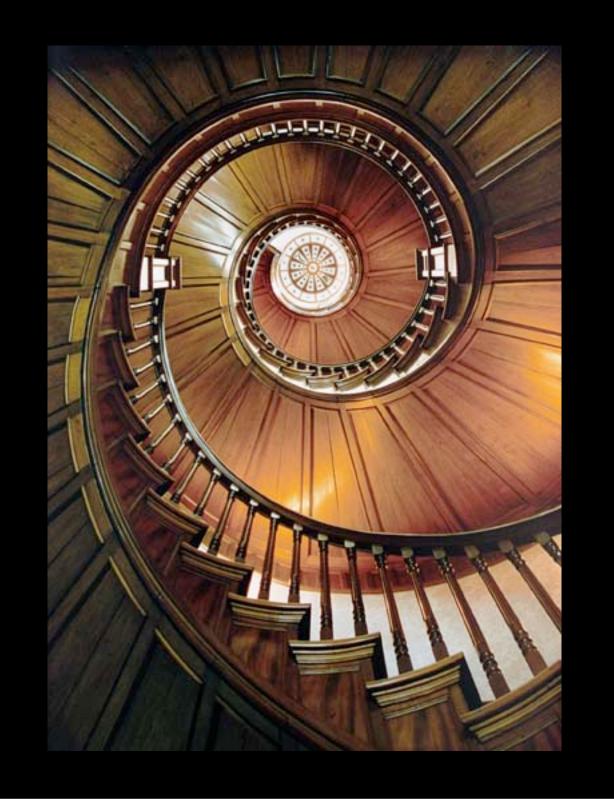






Baby steps

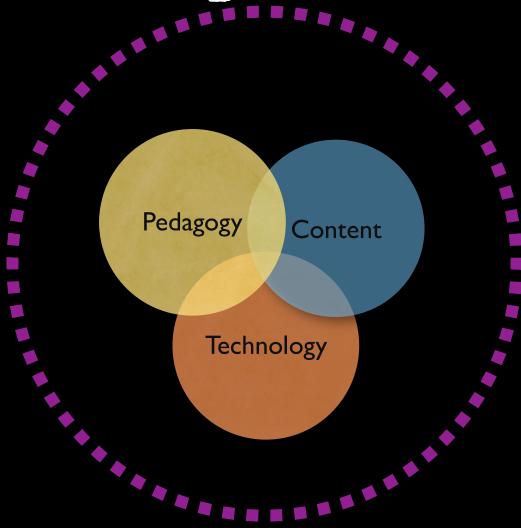






Uniqueness





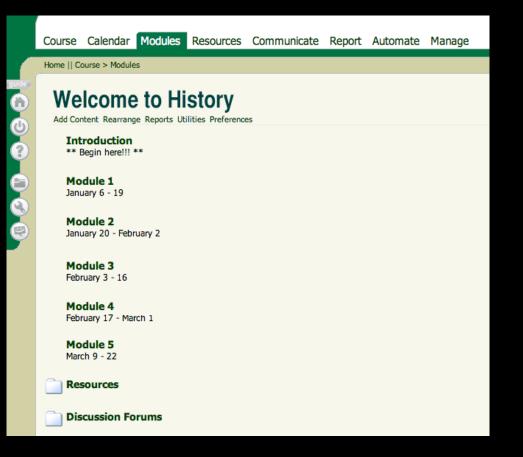
Contexts

The orthodoxy of online course design



The attack of the clones

Uniqueness

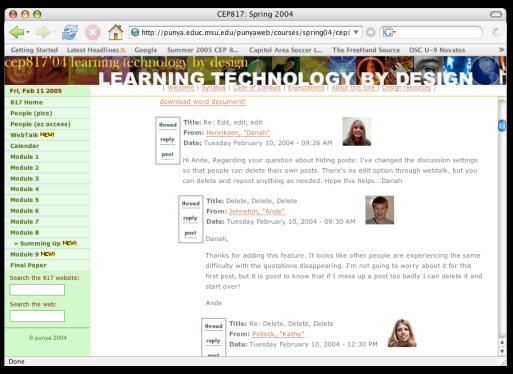


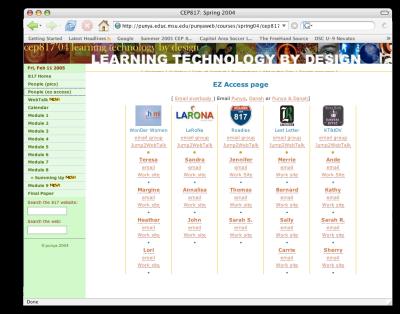
Course Calendar Modules Resources Communicate Report Automate Manage Home | | Course > Modules **Welcome to Physics** Add Content Rearrange Reports Utilities Preferences Introduction ** Begin here!!! ** Module 1 January 6 - 19 Module 2 January 20 - February 2 Module 3 February 3 - 16 Module 4 February 17 - March 1 Module 5 March 9 - 22 Resources **Discussion Forums**



What if all teaching were that way?

One example (from CEP817 - Learning Technology by Design)





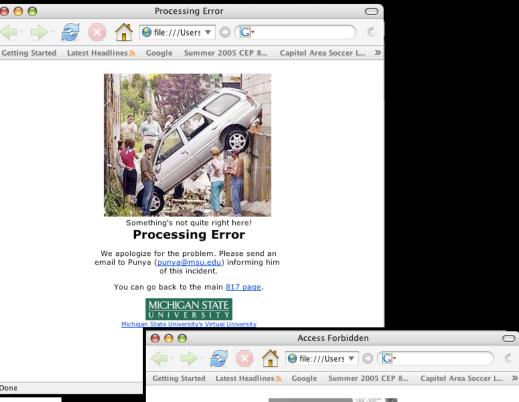


Just one click





 $\Theta \Theta \Theta$





You shouldn't be here!

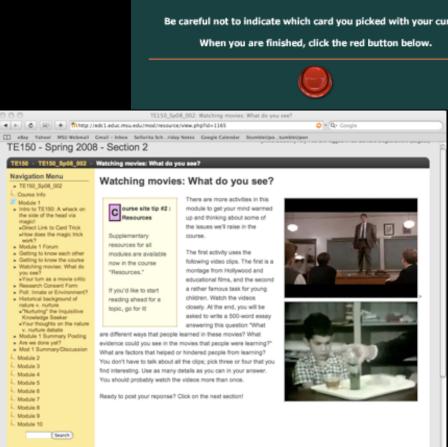
Please go back to the main CEP817 page.

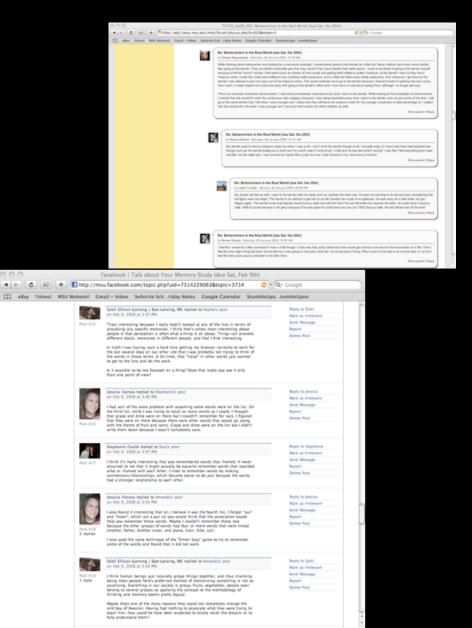
Mandatory official VU prose follows: You have encountered some sort of problem. Please email VU Help Desk at help@vu.msu.edu or call the MSU help line at 1-517-321-1234



Reflections on learning TE150 - fully online









The importance of Creativity!

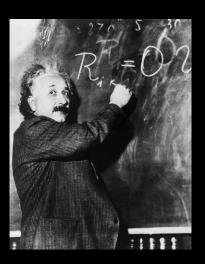
Psychology is a science, and teaching is an art...

... and sciences never generate arts directly out of themselves. An intermediary inventive mind makes make the application by using originality.

~ William James









From technology to Educational Technology







The need for creativity

What is creativity?

Novel



novel, fresh, unusual, unique, surprising, startling, astonishing, astounding, germinal, trendsetting, radical, revolutionary, influential, pioneering...



UNIQUE

JUST BECAUSE YOU ARE UNIQUE DOES NOT MEAN YOU ARE USEFUL

Effective



effective, valuable,
important, significant,
essential, necessary, logical,
sensible, relevant,
appropriate, adequate,
effective, functional,
operable, useful, userfriendly



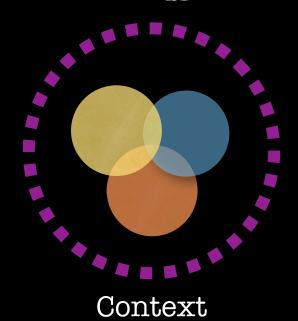
Whole



whole, organic, ordered, arranged, organized, formed, complete, elegant, graceful, charming, attractive, refined, complex, intricate, ornate, interesting, understandable, meaningful, clear, self-explanatory, well crafted, skillful, well made, meticulous, careful

thus a creative product is novel effective whole

Examples

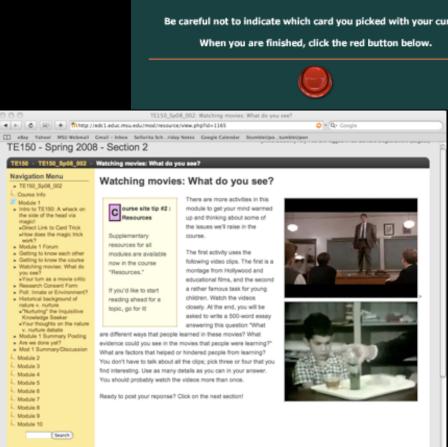


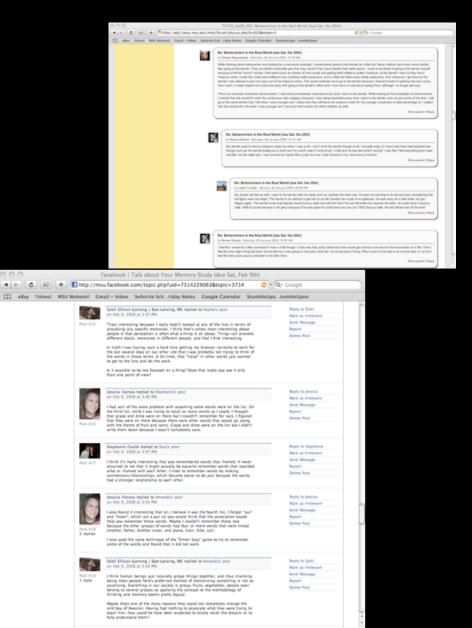
Look for T, P, C & overlaps

Look for Novel, Effective, Whole

Reflections on learning TE150 - fully online









"I agree" "me too!" Hmmm... "Nice Dosk" "I agree" "I agree" Good job "I agree"

"I agree" "me too!"



Magic trick

Pick any card from the deck below and commit that card to memory.













Be careful not to indicate which card you picked with your cursor.

When you are finished, click the red button below.



facebook

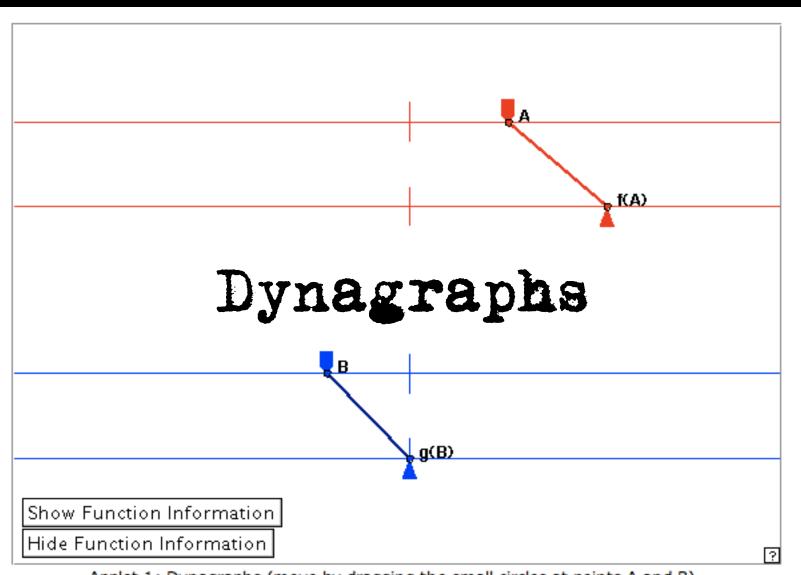
Think of C, P&T coming together (in a specific context)

From tech to Ed tech

Intertextuality & Search Engines



Understanding functions



Applet 1: Dynagraphs (move by dragging the small circles at points A and B)

Summing up

the walls between content, pedagogy & technology exist only in our minds

A question

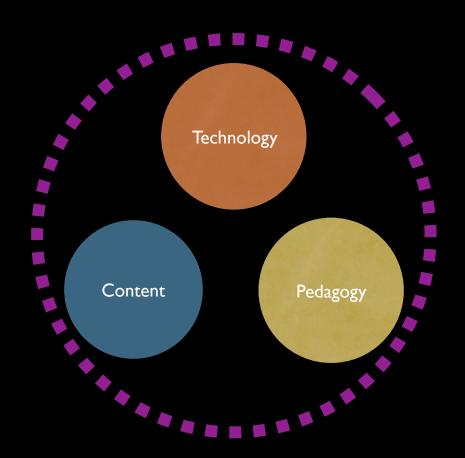
Where do EDUCATORS live?

Where do YOU live?

Where do I live?

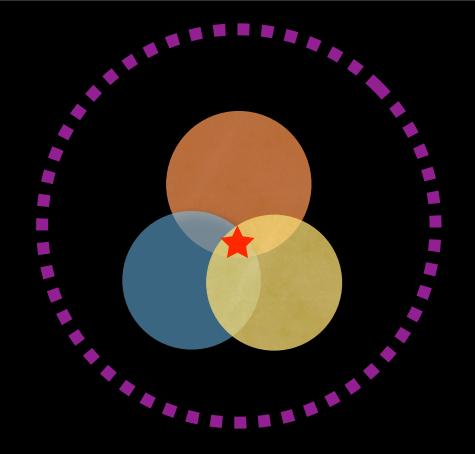
Where do WE live?



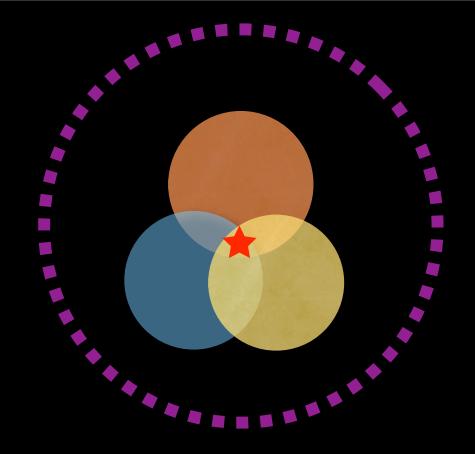


Be it blackboard

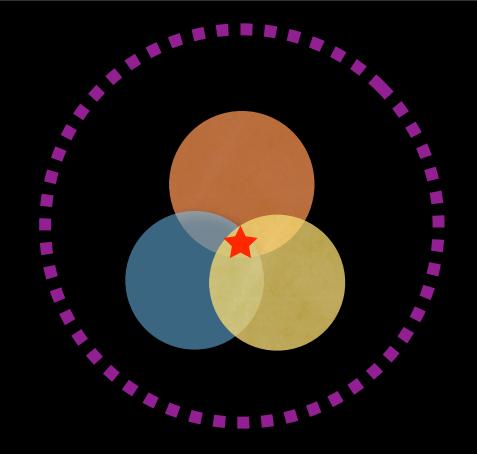
blackboard.com



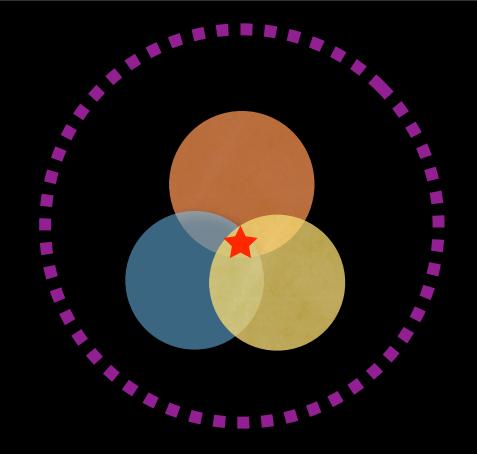
This is where EDUCATORS live



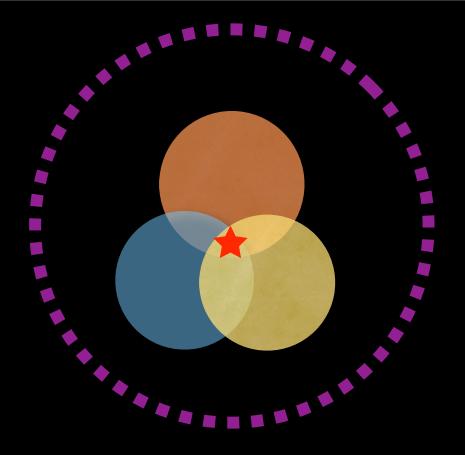
This is where YOU live



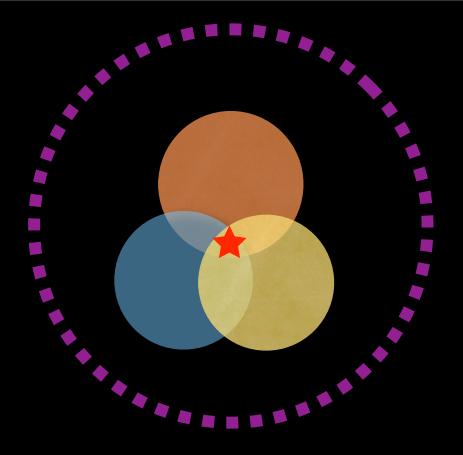
This is where
I live



This is where WE live



Always have

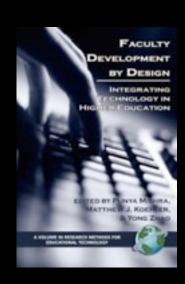


Always will!

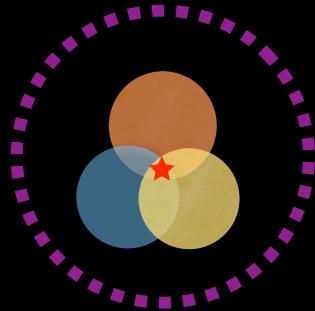
In the near future, higher education faculty will not be replaced by technology. However, faculty who cannot use technology will be replaced.

- anon

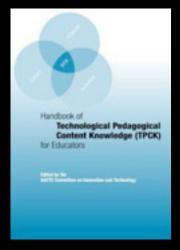
Thank You







Handbook of tpck for educators (2008)



mkoehler.educ.msu.edu punyamishra.com tpck.org