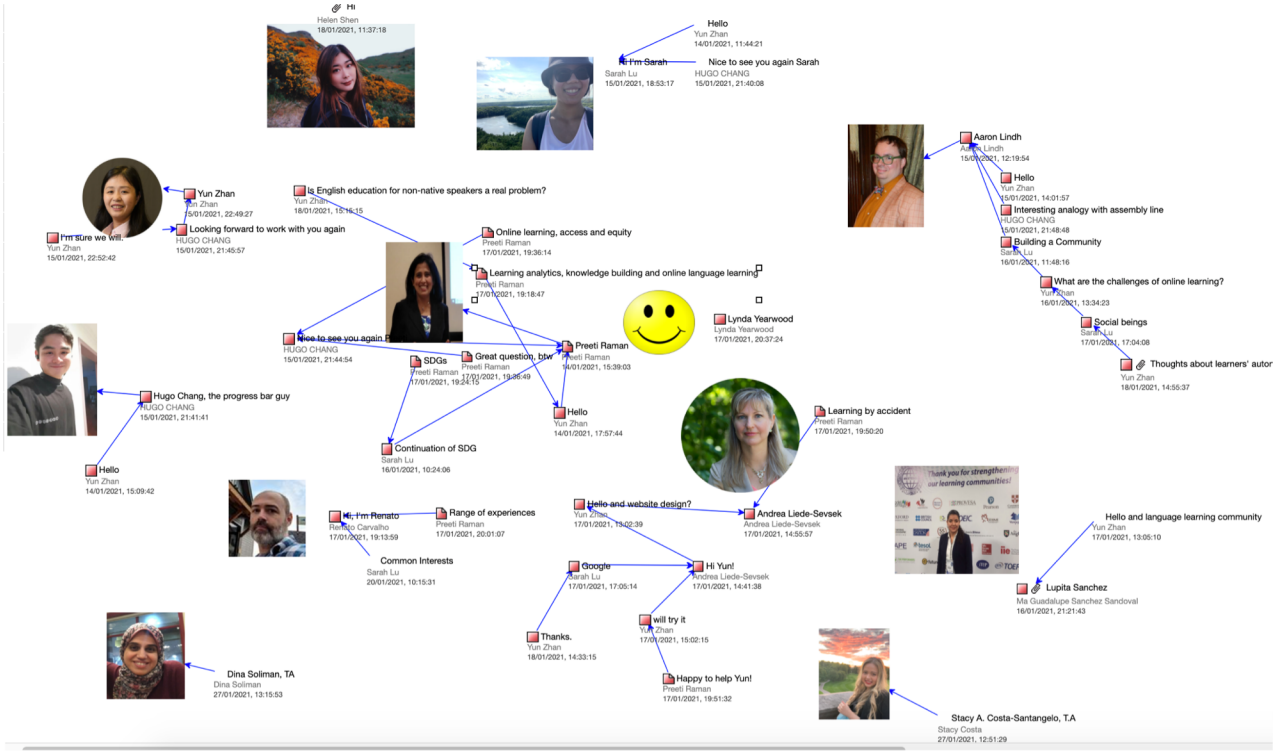
Affective Learning Analytics for Interactive Knowledge Building

Preeti Raman
preeti.raman@mail.utoronto.ca
PhD Candidate
OISE, University of Toronto


Hi
Helen Shen
18/01/2021, 11:37:18
Hello
Yun Zhan
14/01/2021, 11:44:21
I'm Sarah
Sarah Lu
15/01/2021, 18:53:17
Nice to see you again Sarah
HUGO CHANG
15/01/2021, 21:40:08
Aaron Lindh
Aaron Lindh
15/01/2021, 12:19:54
Hello
Yun Zhan
15/01/2021, 14:01:57
Interesting analogy with assembly line
HUGO CHANG
15/01/2021, 21:48:48
Building a Community
Sarah Lu
16/01/2021, 11:48:16
What are the challenges of online learning?
Yun Zhan
16/01/2021, 13:34:23
Social beings
Sarah Lu
17/01/2021, 17:04:08
Thoughts about learners' autor
Yun Zhan
18/01/2021, 14:55:37
Yun Zhan
Yun Zhan
15/01/2021, 22:49:27
Looking forward to work with you again
HUGO CHANG
15/01/2021, 21:45:57
I'm sure we will.
Yun Zhan
15/01/2021, 22:52:42
Is English education for non-native speakers a real problem?
Yun Zhan
18/01/2021, 15:15:15
Online learning, access and equity
Preeti Raman
17/01/2021, 19:36:14
Learning analytics, knowledge building and online language learning
Preeti Raman
17/01/2021, 19:18:47
Lynda Yearwood
Lynda Yearwood
17/01/2021, 20:37:24
Nice to see you again P
HUGO CHANG
15/01/2021, 21:44:54
Preeti Raman
Preeti Raman
16/01/2021, 15:39:03
SDGs
Preeti Raman
17/01/2021, 19:24:15
Great question, btw
Preeti Raman
17/01/2021, 19:35:49
Hugo Chang, the progress bar guy
HUGO CHANG
15/01/2021, 21:41:41
Hello
Yun Zhan
14/01/2021, 15:09:42
Hello
Yun Zhan
14/01/2021, 17:57:44
Continuation of SDG
Sarah Lu
16/01/2021, 10:24:06
Learning by accident
Preeti Raman
17/01/2021, 19:50:20
Hi, I'm Renato
Renato Carvalho
17/01/2021, 19:13:59
Range of experiences
Preeti Raman
17/01/2021, 20:01:07
Common Interests
Sarah Lu
20/01/2021, 10:15:31
Hello and website design?
Yun Zhan
17/01/2021, 15:02:39
Andrea Liede-Sevsek
Andrea Liede-Sevsek
17/01/2021, 14:35:57
Hello and language learning community
Yun Zhan
17/01/2021, 13:05:10
Lupita Sanchez
Ma Guadalupe Sanchez Sandoval
16/01/2021, 21:21:43
Google
Sarah Lu
17/01/2021, 17:05:14
Hi Yun!
Andrea Liede-Sevsek
17/01/2021, 14:41:38
Thanks.
Yun Zhan
18/01/2021, 14:33:15
will try it
Yun Zhan
17/01/2021, 15:02:15
Happy to help Yun!
Preeti Raman
17/01/2021, 19:51:32
Dina Soliman, TA
Dina Soliman
27/01/2021, 13:15:53
Stacy A. Costa-Santangelo, T.A
Stacy Costa
27/01/2021, 12:51:29

Top-Level Goal/Vision Statement: Democratizing and Advancing Knowledge for Public Good

Marlene Scardamalia

1/13/2021, 3:14:04 PM

"We aim to co-design knowledge practices and technologies to enable a realistic model of students advancing knowledge for public good."

DESIGN CHALLENGE

How can we engage knowledge building communities using KF in higher-level sustained idea improvement?

MOTIVATION

Boredom, social isolation, lack of motivation and emotional distance are some of the challenges faced by students and instructors online
(Finneran & Zhang, 2018; Pearce, Ainley, & Howard, 2005; Peters & Hewitt, 2010)

Students need temporal, spatial, and intellectual supports both in classrooms and online*(Artino & Jones, 2012)*

Cognition and emotion are two initially independent systems that become inseparably interrelated *(Leventhal & Scherer, 1987)*

Noddings (2010) Framework of Moral Education and Ethics of Care, which provides a systematic lens through which affective inquiry and constructive classroom orchestrations could be studied

Self-Organization & Emergence | Edge of Chaos

In any sufficiently complex system, if there exists a set of rules that governs the interactions between the entities of the system, the system may eventually achieve a state of productive development and interaction amongst those entities. This state can be achieved if the rules place the system at the Edge of Chaos.

(Kauffman, 1995)

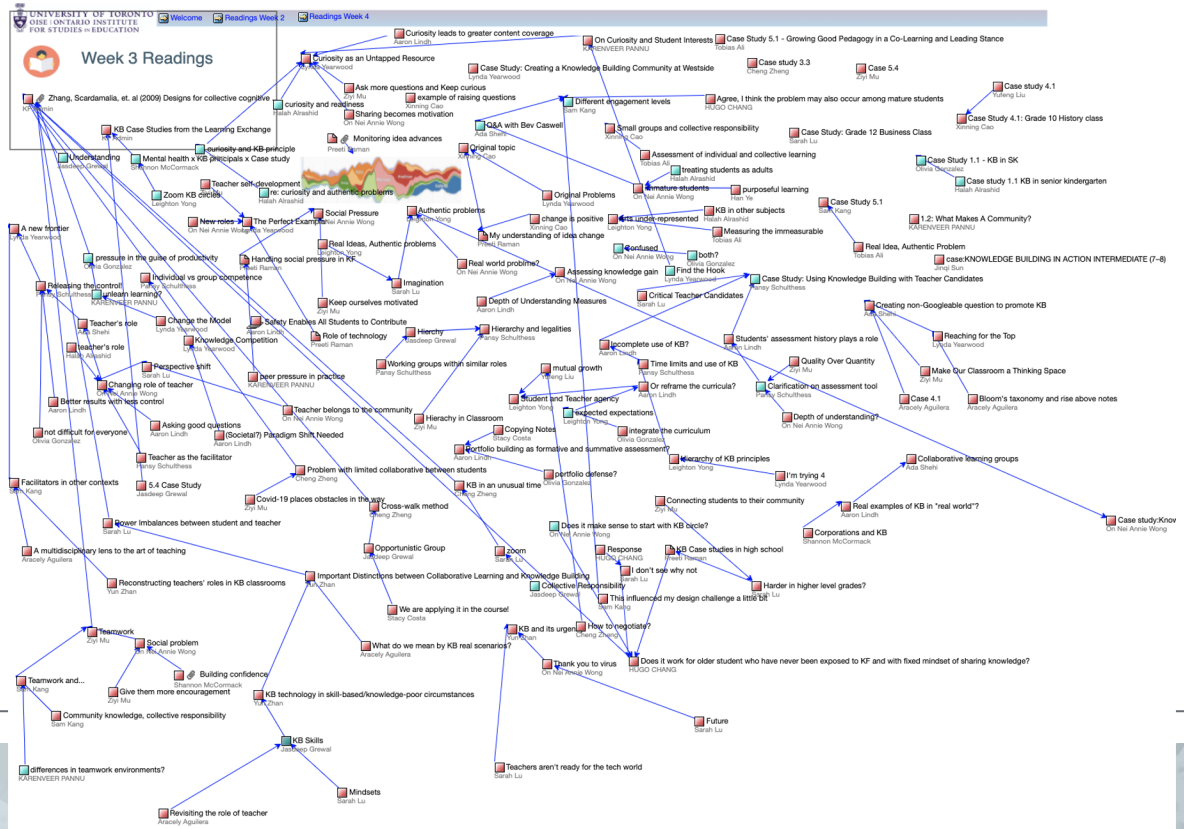
Beyond the Centralized Mindset

KF can act as an ideal tool for developing complex ideas.

The study of complexity focuses on “the investigation of how complex phenomena can arise from simple components and simple interactions.”

(Resnick & Wilensky, 1996)

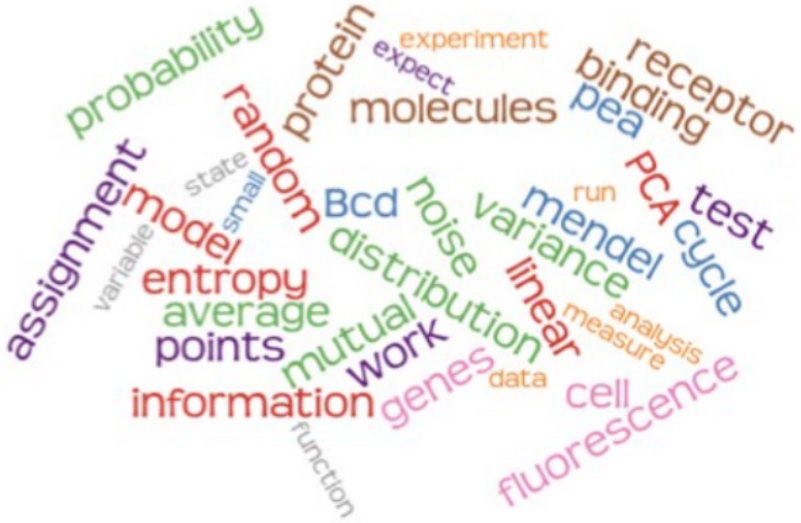
WHAT?


UNIVERSITY OF TORONTO
OISE | ONTARIO INSTITUTE FOR STUDIES IN EDUCATION
Welcome
Readings Week 2
Readings Week 4
Week 3 Readings
Curiosity leads to greater content coverage
Aaron Lindh
On Curiosity and Student Interests
KAHENVEER PANNU
Case Study 5.1 - Growing Good Pedagogy in a Co-Learning and Leading Stance
Tobias Ali
Curiosity as an Untapped Resource
Lynda Yearwood
Case Study: Creating a Knowledge Building Community at Westside
Lynda Yearwood
Case study 3.3
Cheng Zheng
Case 5.4
Ziyi Mu
Case study 4.1
Yuteng Liu
Zhang, Scardamalia, et. al (2009) Designs for collective cognitive
Ask more questions and Keep curious
Ziyi Mu
curiosity and readiness
Hatah Alrashid
example of raising questions
Xinning Cao
Different engagement levels
Sam Kang
Agree, I think the problem may also occur among mature students
HUGO CHANG
Case Study 4.1: Grade 10 History class
Xinning Cao
Sharing becomes motivation
On Nei Annie Wong
KB Case Studies from the Learning Exchange
Ada Shehi
Monitoring idea advances
Preeti Raman
Q&A with Bev Caswell
Ada Shehi
Small groups and collective responsibility
Xinning Cao
Case Study: Grade 12 Business Class
Sarah Lu
curiosity and KB principle
Original topic
Xinning Cao
Assessment of individual and collective learning
Tobias Ali
Understanding
Mental health x KB principals x Case study
Shannon McCormack
treating students as adults
Hatah Alrashid
Case Study 1.1 - KB in SK
Olivia Gonzalez
Teacher self-development
re: curiosity and authentic problems
Original Problems
Lynda Yearwood
immature students
On Nei Annie Wong
purposeful learning
Han Ye
Case study 1.1 KB in senior kindergarten
Hatah Alrashid
Zoom KB circles
Leighton Yong
Hatah Alrashid
Case Study 5.1
Sam Kang
New roles
On Nei Annie Wong
The Perfect Example
On Nei Annie Wong
Social Pressure
On Nei Annie Wong
Authentic problems
Aaron Lindh
change is positive
Xinning Cao
arts under-represented
Leighton Yong
KB in other subjects
Hatah Alrashid
1.2: What Makes A Community?
KAHENVEER PANNU
A new frontier
Lynda Yearwood
My understanding of idea change
Preeti Raman
Measuring the immeasurable
Tobias Ali
pressure in the guise of productivity
Olivia Gonzalez
Handing social pressure in KF
Preeti Raman
Real Ideas, Authentic problems
Leighton Yong
Confused
On Nei Annie Wong
both?
Olivia Gonzalez
Real Idea, Authentic Problem
Tobias Ali
case:KNOWLEDGE BUILDING IN ACTION INTERMEDIATE (7–8)
Jinqi Sun
Releasing the control!
Parsay Schulthess
Unlearn learning?
KAHENVEER PANNU
Individual vs group competence
Parsay Schulthess
Real world problms?
On Nei Annie Wong
Assessing knowledge gain
On Nei Annie Wong
Find the Hook
Lynda Yearwood
Case Study: Using Knowledge Building with Teacher Candidates
Parsay Schulthess
Imagination
Sarah Lu
Critical Teacher Candidates
Sarah Lu
Keep ourselves motivated
Ziyi Mu
Depth of Understanding Measures
Aaron Lindh
Creating non-Googleable question to promote KB
Ada Shehi
Teacher's role
Ada Shehi
Change the Model
Lynda Yearwood
Safety Enables All Students to Contribute
Aaron Lindh
Role of technology
Preeti Raman
Hierchy
Jasdeep Grewal
Hierarchy and legalities
Parsay Schulthess
Incomplete use of KB?
Aaron Lindh
Students' assessment history plays a role
Aaron Lindh
Reaching for the Top
Lynda Yearwood
leacher's role
Hatah Alrashid
Knowledge Competition
Lynda Yearwood
Working groups within similar roles
Parsay Schulthess
mutual growth
Yuteng Liu
Time limits and use of KB
Parsay Schulthess
Quality Over Quantity
Ziyi Mu
Make Our Classroom a Thinking Space
Ziyi Mu
Perspective shift
Sarah Lu
beer pressure in practice
KAHENVEER PANNU
Changing role of teacher
On Nei Annie Wong
Student and Teacher agency
Leighton Yong
Or reframe the curricula?
Aaron Lindh
Clarification on assessment tool
Parsay Schulthess
Case 4.1
Aracely Aguilera
Bloom's taxonomy and rise above notes
Aracely Aguilera
Better results with less control
Aaron Lindh
Teacher belongs to the community
On Nei Annie Wong
Hierarchy in Classroom
Ziyi Mu
expected expectations
Leighton Yong
Depth of understanding?
On Nei Annie Wong
not difficult for everyone
Olivia Gonzalez
Asking good questions
Aaron Lindh
(Societal?) Paradigm Shift Needed
Aaron Lindh
Copying Notes
Stacy Costa
integrate the curriculum
Olivia Gonzalez
Portfolio building as formative and summative assessment?
Aaron Lindh
Teacher as the facilitator
Parsay Schulthess
Hierarchy of KB principles
Leighton Yong
Collaborative learning groups
Ada Shehi
Problem with limited collaborative between students
Cheng Zhang
portfolio defense?
Olivia Gonzalez
I'm trying 4
Lynda Yearwood
Facilitators in other contexts
Sam Kang
5.4 Case Study
Jasdeep Grewal
KB in an unusual time
Cheng Zhang
Covid-19 places obstacles in the way
Ziyi Mu
Cross-walk method
Cheng Zhang
Connecting students to their community
Ziyi Mu
Real examples of KB in "real world"?
Aaron Lindh
Case study:Knov
On Nei Annie Wong
Power Imbalances between student and teacher
Sarah Lu
Does it make sense to start with KB circle?
On Nei Annie Wong
Corporations and KB
Shannon McCormack
A multidisciplinary lens to the art of teaching
Aracely Aguilera
Opportunistic Group
Jasdeep Grewal
zoom
Sarah Lu
Response
HUGO CHANG
KB Case studies in high school
Preeti Raman
Reconstructing teachers' roles in KB classrooms
Yun Zhan
Important Distinctions between Collaborative Learning and Knowledge Building
Yun Zhan
Collective Responsibility
Jasdeep Grewal
I don't see why not
Sarah Lu
Harder in higher level grades?
Aaron Lindh
We are applying it in the course!
Stacy Costa
This influenced my design challenge a little bit
Sam Kang
Teamwork
Ziyi Mu
Social problem
On Nei Annie Wong
What do we mean by KB real scenarios?
Aracely Aguilera
KB and its urgency
Yun Zhan
How to negotiate?
Cheng Zhang
Thank you to virus
On Nei Annie Wong
Does it work for older student who have never been exposed to KF and with fixed mindset of sharing knowledge?
HUGO CHANG
Teamwork and...
Sam Kang
Building confidence
Shannon McCormack
Give them more encouragement
Ziyi Mu
KB technology in skill-based/knowledge-poor circumstances
Yun Zhan
Community knowledge, collective responsibility
Sam Kang
Future
Sarah Lu
KB Skills
Jasdeep Grewal
differences in teamwork environments?
KAHENVEER PANNU
Mindsets
Sarah Lu
Teachers aren't ready for the tech world
Sarah Lu
Revisiting the role of teacher
Aracely Aguilera

WORD CLOUD

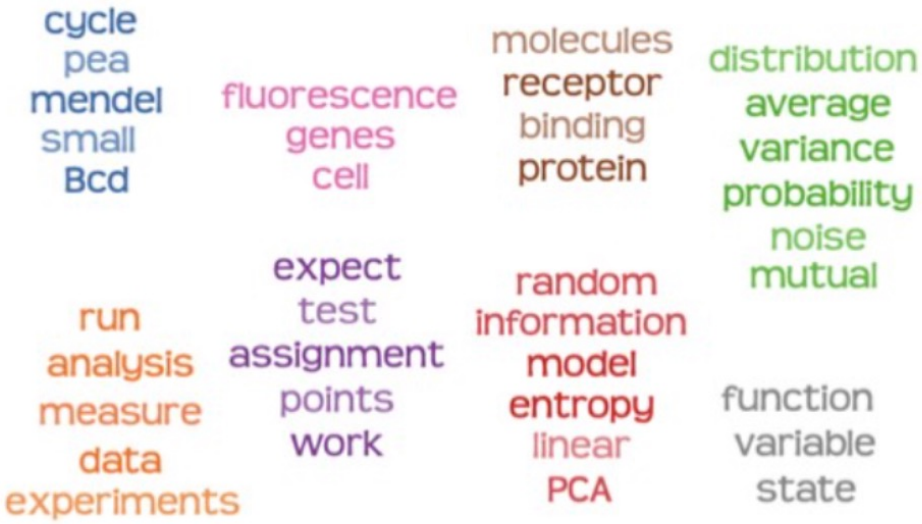
Curabitur brazo purus nec justo faucibus euismod brazo ac asciliusSuspendisse maximus sodales commodo. Nullam faucibus elit vitae.
Edit Text
scientific reasoning
diversity of ideas
pervasive knowledge building
key components
epistemic agency
new knowledge
kf note
incorrect solutions
new ideas
neural network
surprising results
students
rules of engagement
cognitive science
ideas
dunbar
community knowledge
questions
explicit knowledge
blended learning
note title
aha
intended use
experience
cognitive presence
principles of abduction
kb community
note
design thinking
better process
creative solutions
good note title
user story
kf
intrinsic motivation
kb
analogy
creativity
collective responsibility
new note
problem
improvable ideas
knowledge building
knowledge creation
world laboratory
community of inquiry
teachers
norm of engagement
social presence
knowledge community

CLOUD OF IDEAS

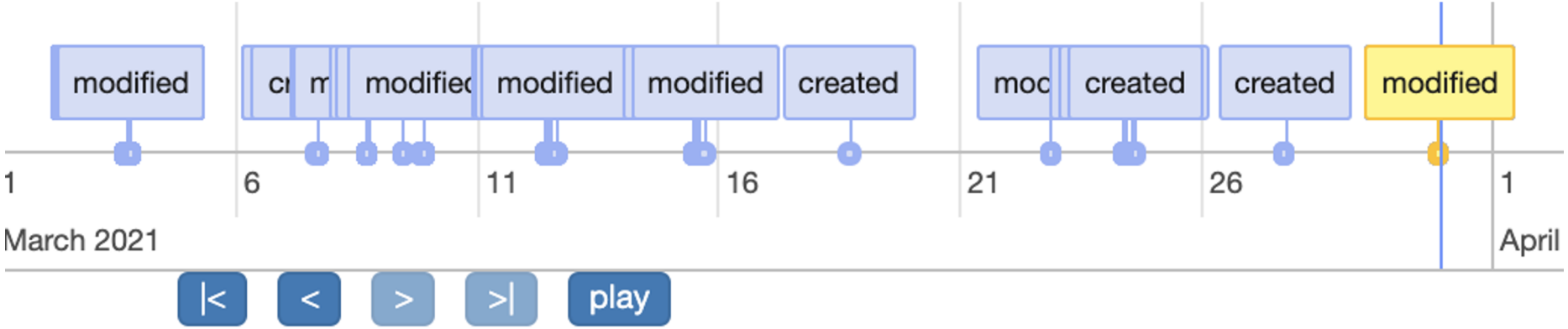


CLOUD OF IDEAS

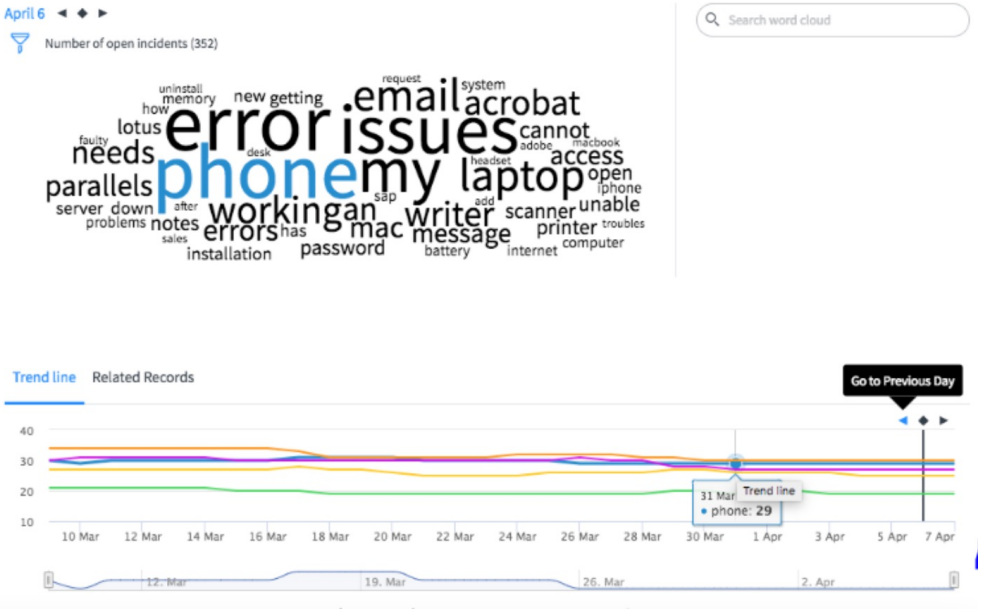
CLOUD OF IDEAS



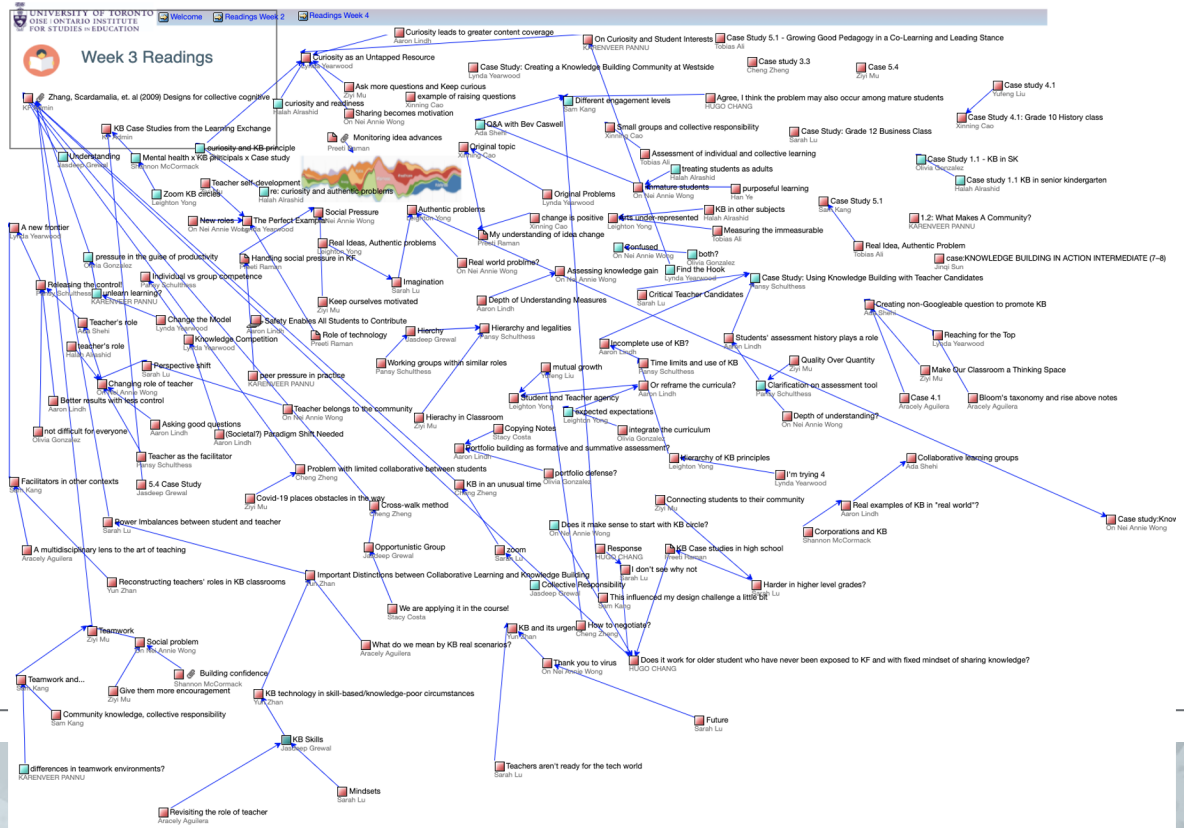
EXTENDING THE TIME MACHINE



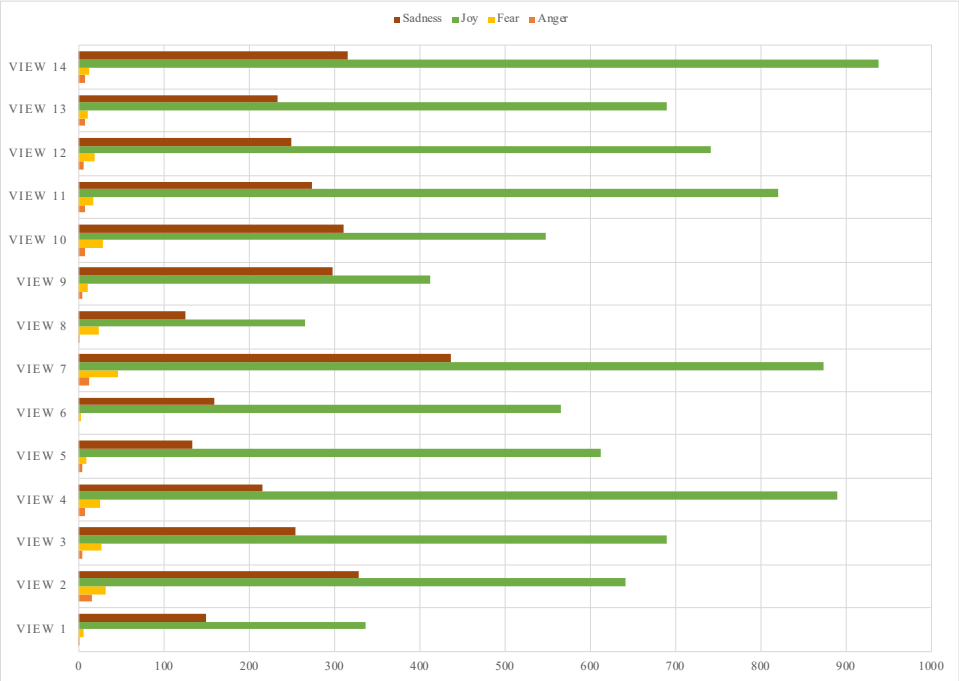
EXTENDING THE TIME MACHINE



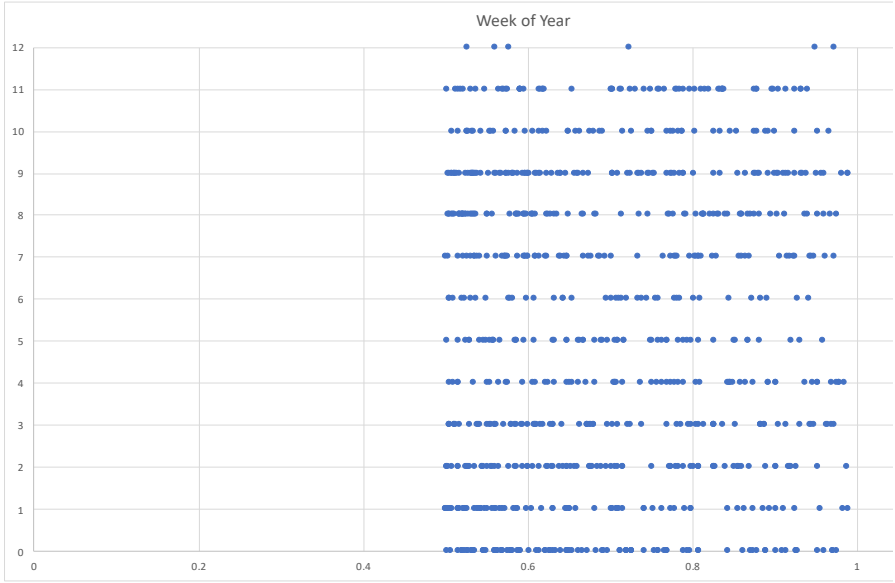
HOW AFFECTIVE?



HOW AFFECTIVE?

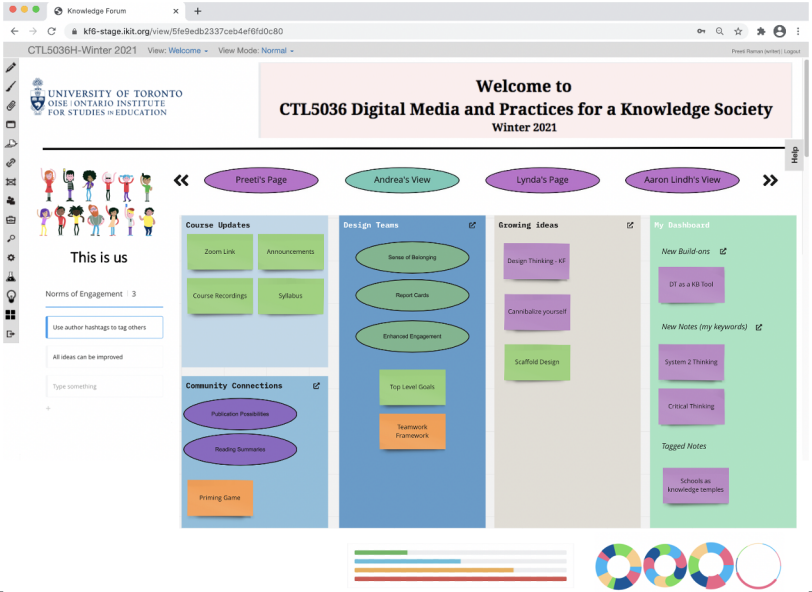


ZOOMING IN



SUMMARY

REDESIGNED TEACHER AND STUDENT HOMEPAGE



NEXT STEPS

Research Study to measure behavioral and cognitive engagement and sustained idea improvement

INTERACTION, EMOTIONS AND IDEA GROWTH

- Ideas can be connected
- Emergent rather than fixed

AUTOMATION AND INTELLIGENCE

- My dashboard suggestions
- Growing big ideas

References

Kauffman, S. (1995). *At home in the universe: The search for laws of self-organization and complexity*. New York, NY: Oxford University Press.

Resnick, M., & Wilensky, U. (1998). Diving Into Complexity: Developing Probabilistic Decentralized Thinking Through Role-Playing Activities. *The Journal of the Learning Sciences, 7*(2), 153–172. https://doi.org/10.1207/s15327809jls0702_1

Shea, P., & Bidjerano, T. (2009). Community of inquiry as a theoretical framework to foster "epistemic engagement" and "cognitive presence" in online education. *Computers and Education, 52*(3), 543–553. https://doi.org/10.1016/j.compedu.2008.10.007

Thagard, P., & Stewart, T. (2011). The AHA! Experience: Creativity Through Emergent Binding in Neural Networks. *Cognitive Science, 35*(1), 1–33. https://doi.org/10.1111/j.1551-6709.2010.01142.x