

Designing a collaborative dashboard for teacher Knowledge Building communities

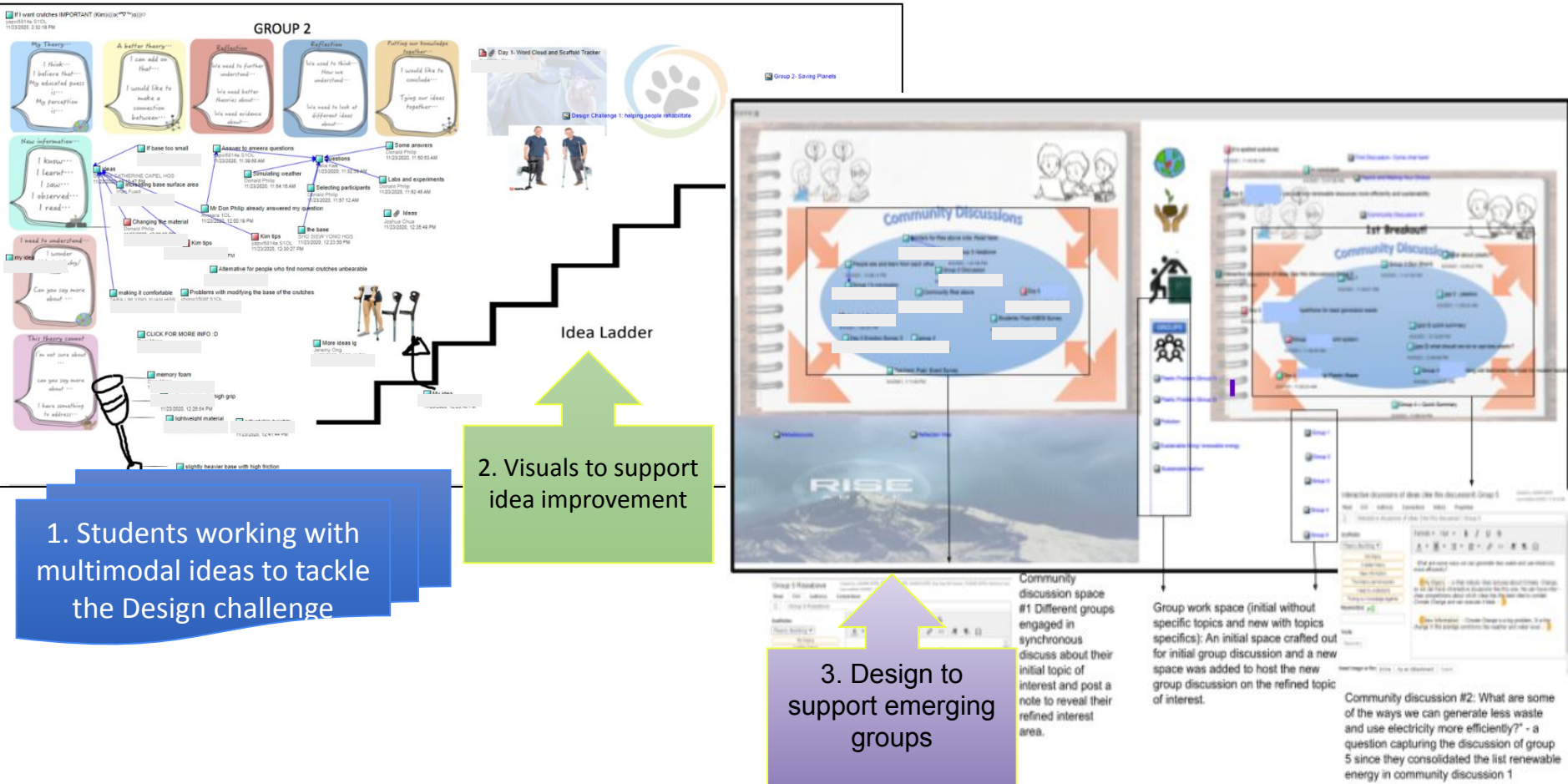
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Drawing Dashboard Design Ideas from Two Active KB Communities in Singapore

Key Focus: Idea-development
Design Features: KB Stories

(2 case studies)

Case Study 1: Student Knowledge Building Design Studio: Group View; Community views; Analytic View

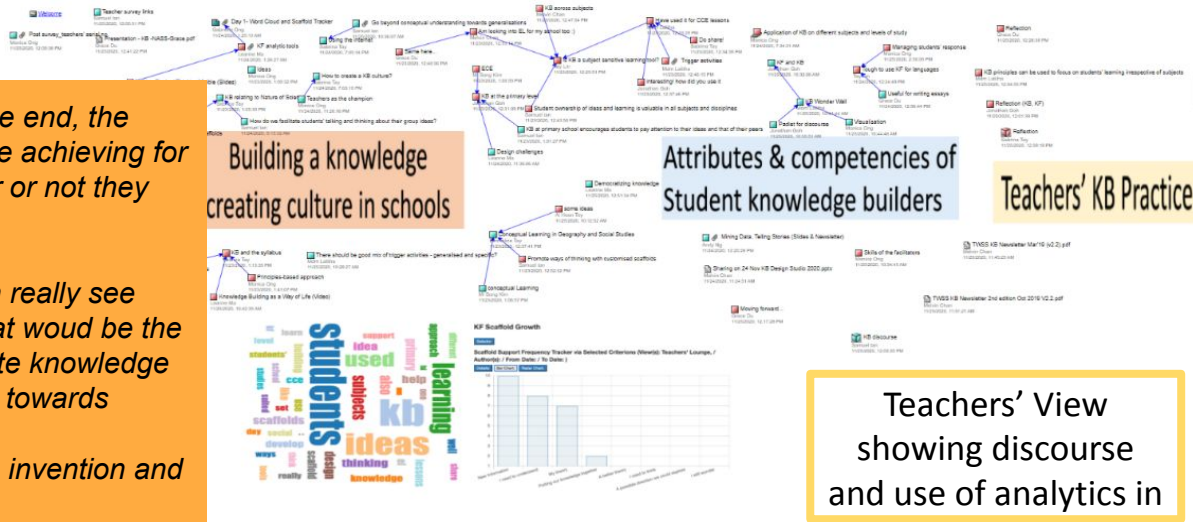
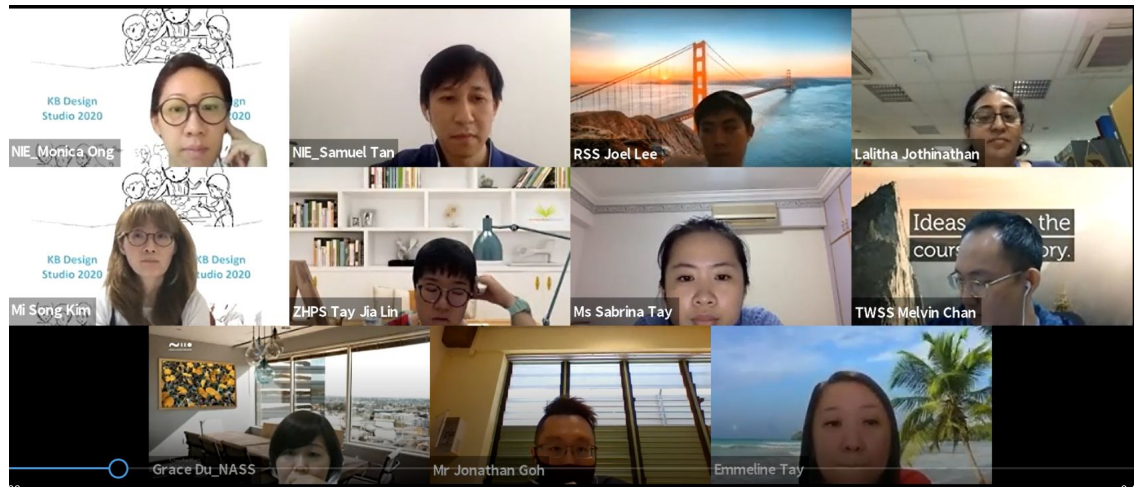


At KBDS2020, teachers worked in a community space parallel to that of the students. They observed, reflect, and posted notes on Knowledge Forum as they watched the students engaged in their own KB.

We observed that the active way in which they saw the KB story unfolded was reflected in their reflection.

"A new or unexpected connection might be - in the end, the success criteria or learning outcome we should be achieving for is not whether they have learnt X,Y,Z but whether or not they became active, reflective learners. -

"if we can get students to find a problem they can really see value in or are curious to solve or understand, that would be the type of inquiry driven approach that would promote knowledge building." ("Go beyond conceptual understanding towards generalisations" by Samuel tan)
, "all subjects should allow for students' curiosity, invention and ownership of learning" ...



Teachers' View
showing discourse
and use of analytics in

Research-student Space: Metadiscourse & Playable Analytics

Student KB Design Studio 2021 Metadiscourse

Welcome

Topics and Making Your Choice

Playable analytics!



What are some emergent ideas in our discussion?

Idea Trends

How can we make our ideas more coherent to support group advances?

Students continued to engage in conversation about on the analytics in their small group - figuring out promising ideas.

Understanding our day 1 discussion

Student KB Design Studio 2021 Reflection View

Great Ideas! Now it goes

Read Edit Author(s) Connections History Properties

We now understand! - Great Ideas coming from the various teams. Now it is time for us to decide what we can do (as individuals) to make our environment more sustainable. Lets think about what part we can play:-

Build-on Contribute

reflection ID

plastic

We saw the other group also talking lots about plastic- plastic is not just a small problem that everyone can ignore, instead we should carry out the different ideas of actions to put a stop to damaging the planet - " ("reflection :D" by Rowena)

Topic Modeling pptx - Last Modified: 1h ago

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Paste Reuse Slides New Slide Slides Font Paragraph Drawing Editing Dictate Voice

8 Sustainability Living/Renewable Energy

9 Sustainability Living/Renewable Energy

10 Sustainability Fashion

11 Sustainability Fashion

Sustainability Living/Renewable Energy

Topic 0

sustainable energy

wind harvest solar use example school panel well

Topic 1

renewable energy

thermal space win fuel global way solar fossil

Teachers shared their students' ideas and development of their KB lessons (KB stories) during the meeting.

Teachers shared students' ideas and KB stories on Knowledge Forum during the online Knowledge Building Community meeting, they then discussed subsequent lessons.

Capturing idea development across lessons

Resources

Environment

Under the sea

Lesson Progression Slides

Lesson Progression Slides

Read Edit Author(s) Connections History Properties

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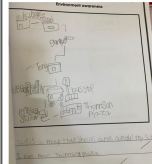
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Lesson 2: Drawing Environments familiar to Them

Students were interested in finding out about each other's homes.

They used Google Earth to share the surroundings around their houses and school.



Lesson 5: Drawing of the two Water Cleaning machines

Students also drew the water cleaning machine that they had observed from the videos to show how it works in cleaning the ocean water.



Lesson 6: Using Students' Observations to Improve the Water Cleaning Machines

"students had a discussion on how they would improve two ocean cleaning machines."

They thought about how the improved design will be useful in collecting trash specifically in Singapore"



KF - Reflection

Reflection guide 5august & 12 August

Reflection

Both classes have had children to decide the direction of their learning. For K1 it was a rocky start as intangible forces and science was difficult to be introduced to them, especially since we started this kb cycle online. There was then an unexpected turn to learn about outer space and planets. This was directed by children's interest.

I was initially hesitant about this direction but Mithiraa was keen to explore the children's decision and children ended up being very engaged in their learning and had lots of fun. I'm still finding a balance between staying within the discussed theme and giving children opportunities to make learning decisions - even if it is beyond the discussed theme.

My personal challenge would be finding the right balance. Another challenge would be to be equipped with the skill to motivate children to be active agents. Right now even though we hear their voices and allow them to make decisions, but I feel that they are not taking up enough initiative and responsibilities to build on their ideas. We are still the ones deciding or suggesting what to do, what materials or resources to use.

Build-on **Contribute**

How have I created opportunities for children to share their knowledge and ideas during this time of social distancing?

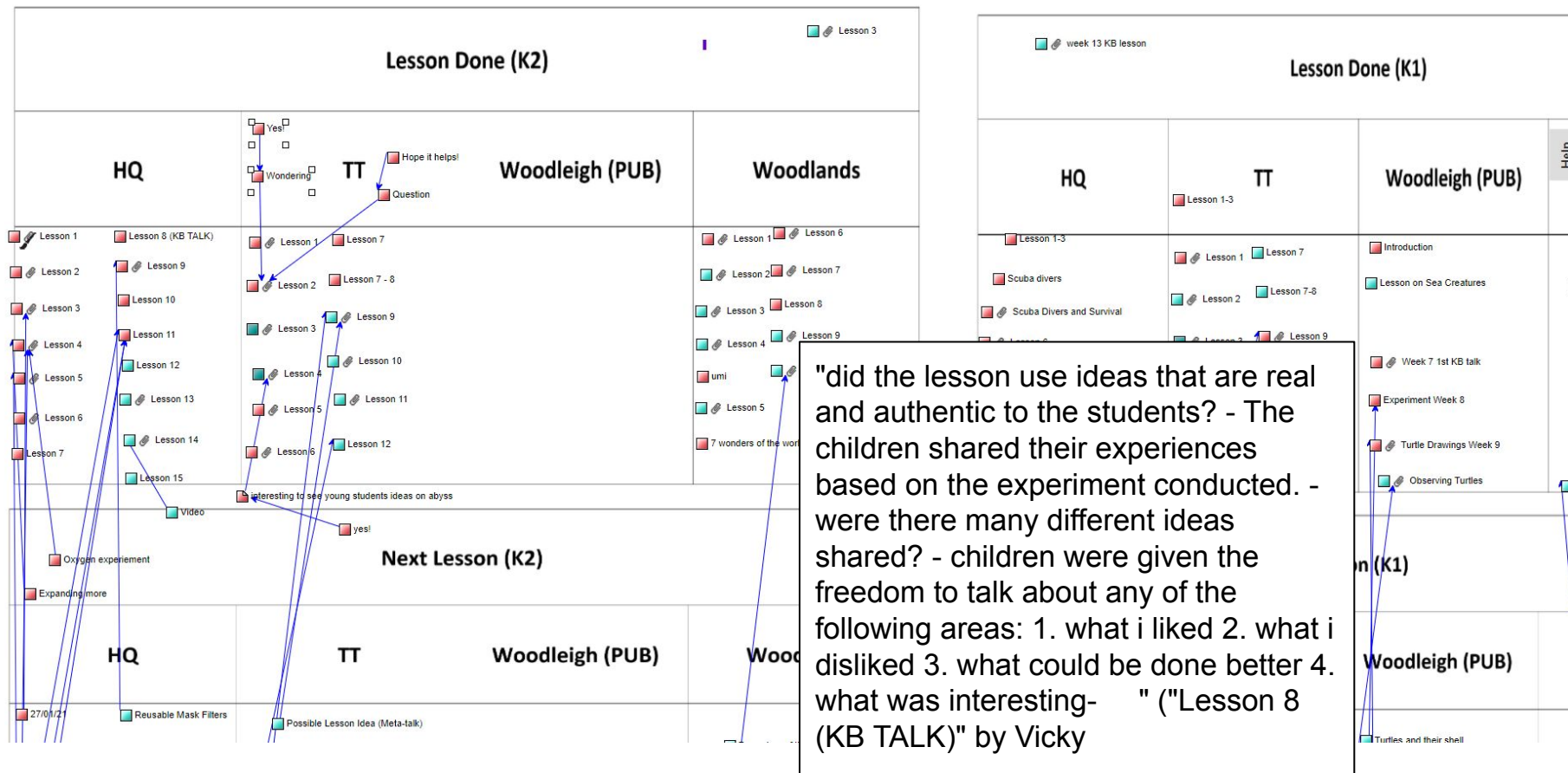
One successful attempt would be the creation of a mindmap... and other methods would be the use of the google docs where children and their parents had taken time to upload their project.

What else can I do to facilitate sharing?

I believe I can try the KB circle. The role that I would take would be an observer where I throw questions and sit back and watch the children engage in conversations.

Teachers constantly reflect on their teaching and alignment with Knowledge Building principles.

Cross-school KB effort - KB stories



Layer 1: Metaspaces concept

Level 1: Meta-space consisting of highlights of knowledge building Stories from classrooms, will be open to network teachers and other communities.

Level 2: Meta-space also includes links to selected databases for analysis (Learning analytics)

Prototype Metaspace for Knowledge Building and Teacher Professional Development

What is this meta-space?

- A prototype design space that provides a meta-view of knowledge building design work across different databases and teacher communities in Singapore, Shenzhen and Hong Kong.

Why design this meta-space?

- To support teacher PD and cross-community interaction for knowledge building connecting researchers, practitioners, and other stakeholders in a community space for advances in research, design and practice.

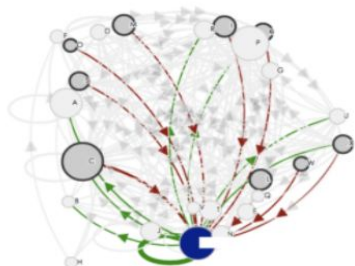
How this meta-space may work?

- Highlight design work using teacher stories, classroom artefacts and analytic tools to support teacher inquiry and knowledge building practice.
- Highlight researchers' analytic work in support of teacher designs and collective progress within and across communities.
- Enactment and interactive designs in cross-community teacher meetings.

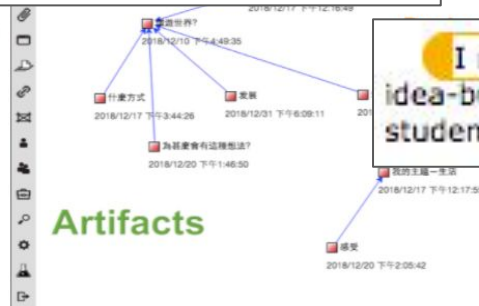
Initial Ideas: Students generated questions and inquired in Knowledge Forum

Low-Level Epistemic Agency and fragmented discussion in Knowledge Forum

Use KF6 "Ideas-Building Network" to reflect Knowledge Forum Collective Inquiry



Feature 1: Teacher stories that highlight key designs of KB lessons.



Feature 2: Workspace for practitioners seeking clarification on purpose of design

I need to understand - how to use this idea-building network tool to help your students reflect KF discourse?

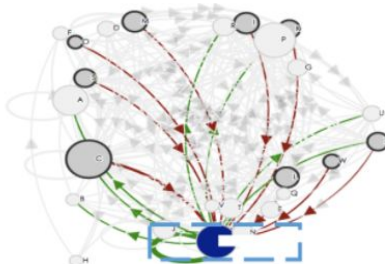
link to database

Feature 4 (level 2):

Tiered permission based on IRB application of this pilot project. There will be a link to access actual KF database; CSV files.

Collective Meta-Reflection

Knowledge Forum Engagement – Ideas Building Network

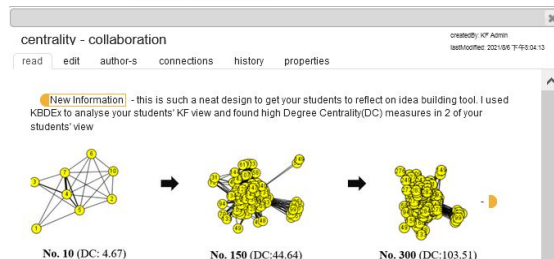
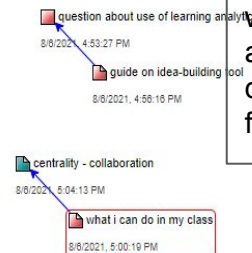


How can you reflect on your KF work based on the visualization of ideas-building network?

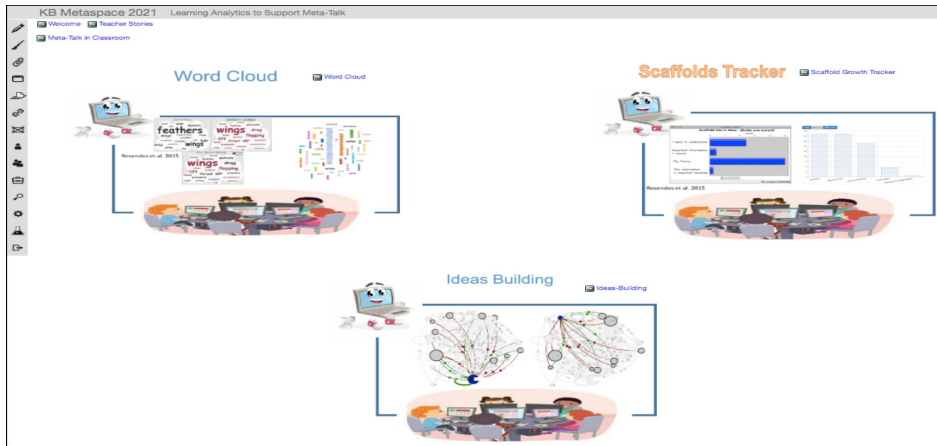
Ideas Development of Artifacts Design

Initial ideas about artifacts design...

Current ideas about artifacts design...

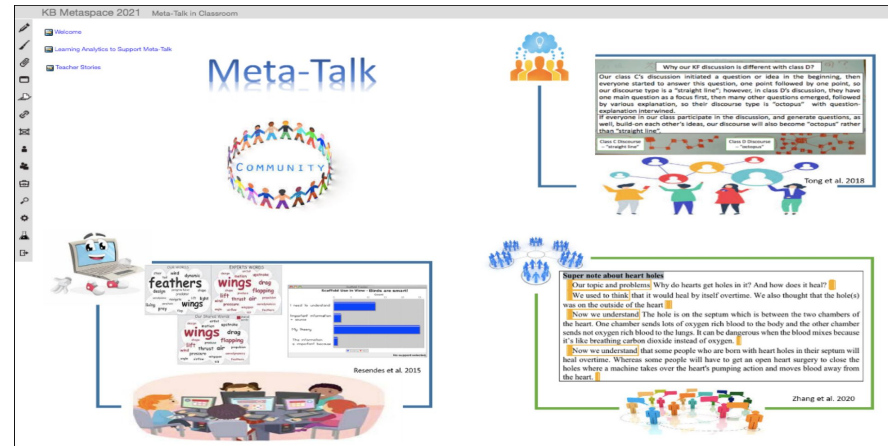


Feature 3: Workspace in which (Recognised) Researcher who has access to the full database can generate analysis and multiple perspective about the impact of the design.

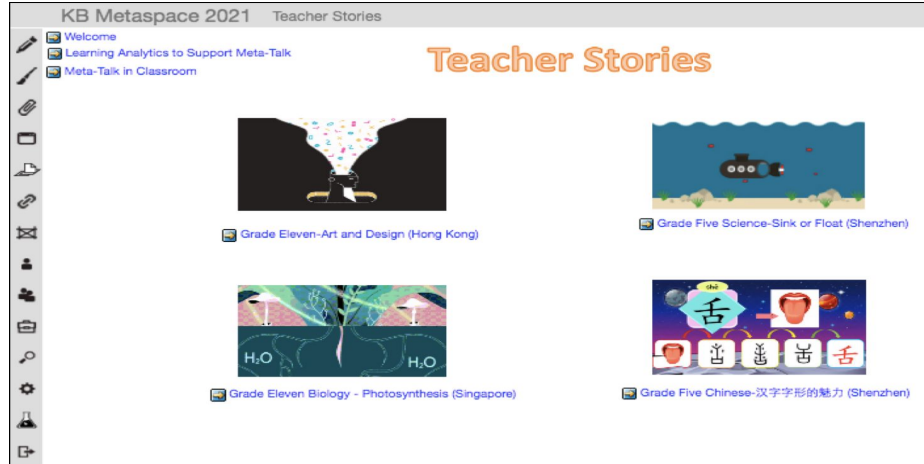


Learning Analytics to Support Meta-Talk

Word cloud, Scaffolds Tracker, and Ideas Building



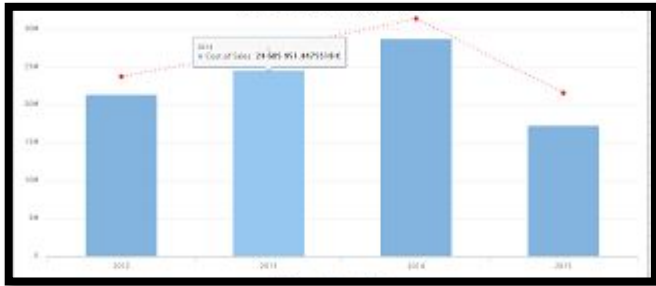
Meta-Talk in Classroom



Teacher stories:

- Grade Eleven-Art and Design (Hong Kong)
- Grade Eleven Biology-Photosynthesis (Singapore)
- Grade Five Science-Sink or Float (Shenzhen)
- Grade Five Chinese-汉字的魅力 (Shenzhen)

Layer 2: Dashboard using open-source libraries and one-time data from pre-school teachers' views



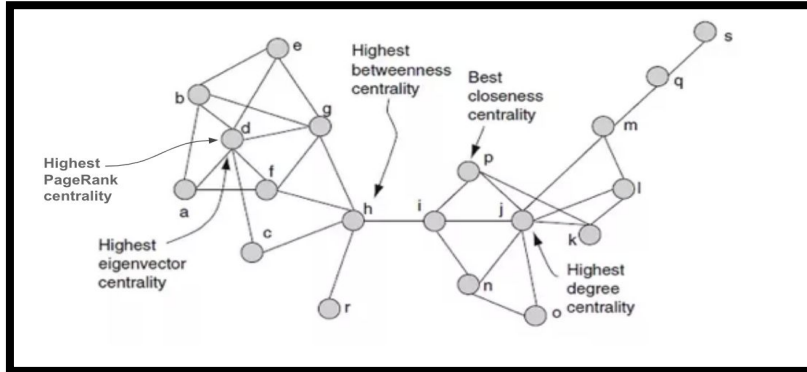
HighCharts of activities/ contributions (Intra and inter-communities)

Emerging needs

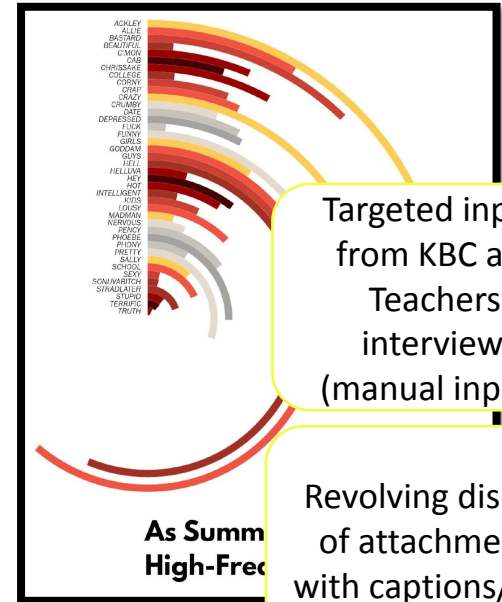
1. I need to understand
2. This theory cannot explain



Growing mind map of topics
(big idea curriculum map & teachers' ideas)



Social network of teacher's Interactions to aid practice
(*how their KB stories connect)



Example of
graphics for novel
word usage (*new
ideas in KB stories)

Targeted inputs
from KBC and
Teachers'
interviews
(manual inputs)

Revolving display
of attachments
with captions/tags

- +Author Profile
- +Teacher's role
- temporal trend
- +List of parental involvement

Scrolling banner of highly-used keywords within and across classrooms:
'keyword1', 'keyword2', 'keyword3'