THE UNIVERSITY OF TEXAS AT DALLAS

Geoscience Educational Research

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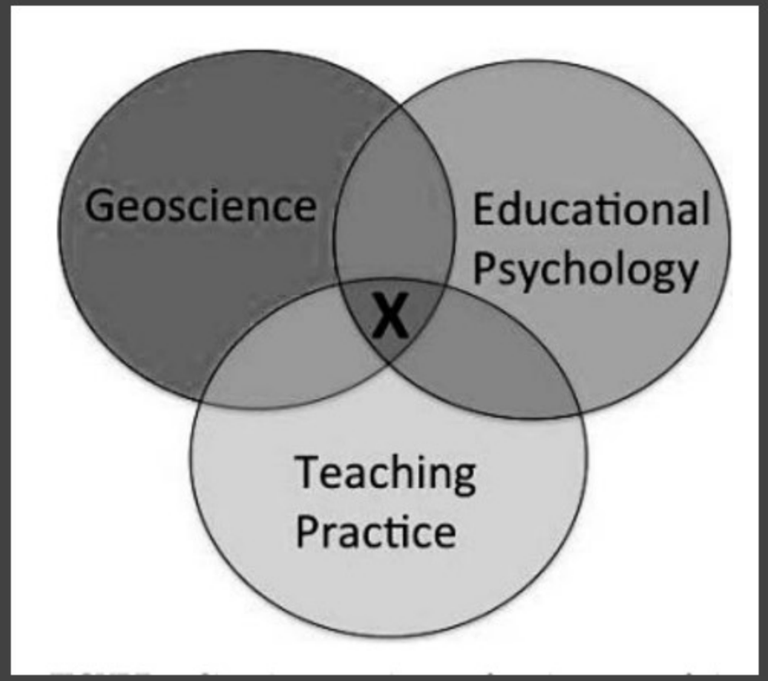
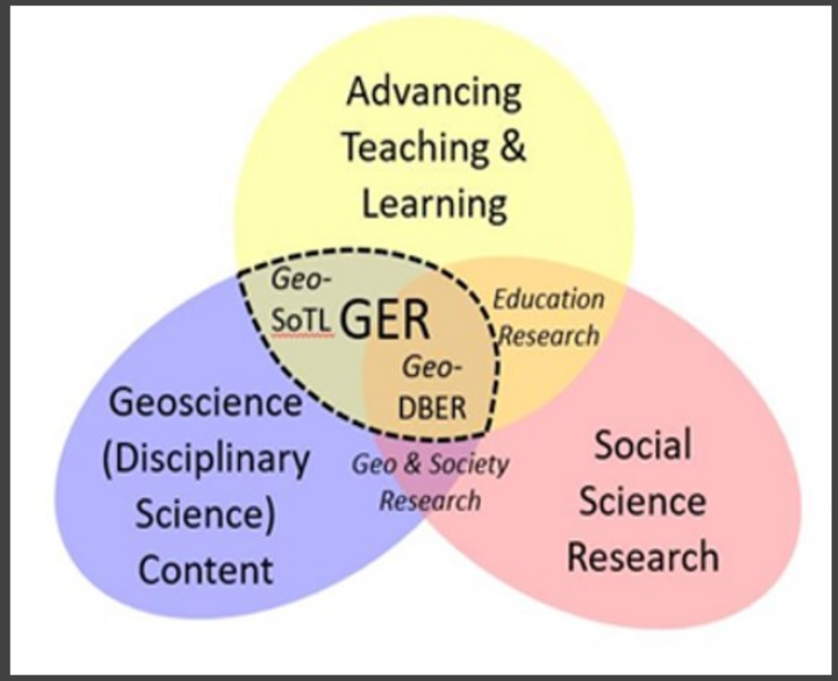
Geoscience Education Research?



(from Lukes et al., 2015)

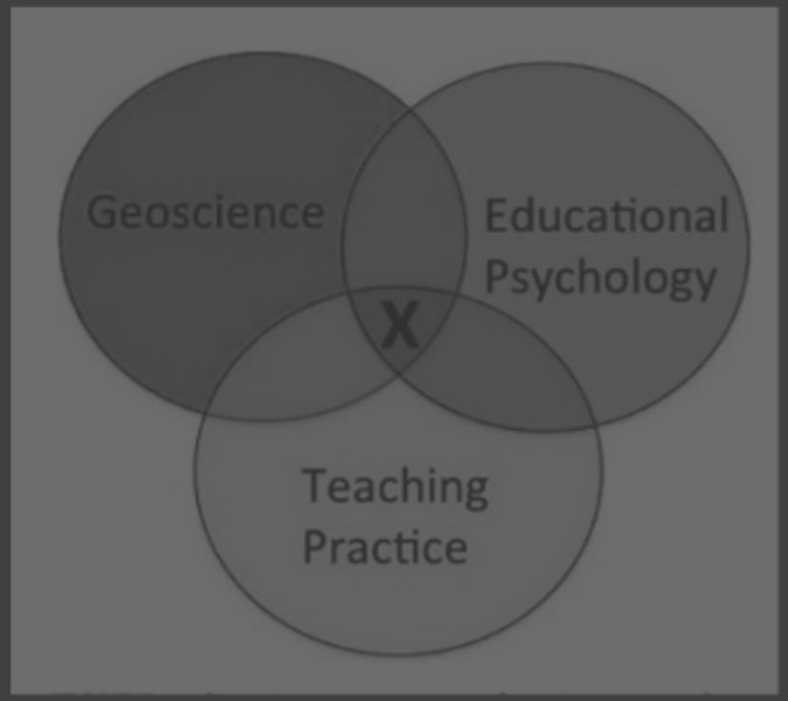


DBER = Discipline Based Education Research

(from St. John 2018, modified from Lukes et al., 2015)

Geoscience Education Research?

The Problem is that so many people know little about Earth Systems.



(from Lukes et al., 2015)

DBER = Discipline Based Education Research

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Video! Why?

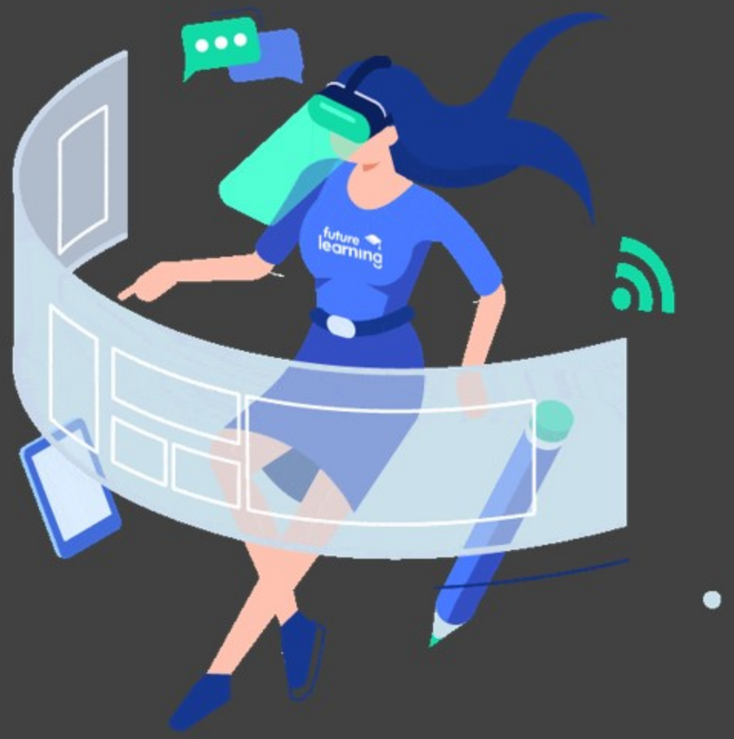
Video is powerful and accessible.

Video! Why?

Video is the basic unit of multimedia learning.

Video! Why?

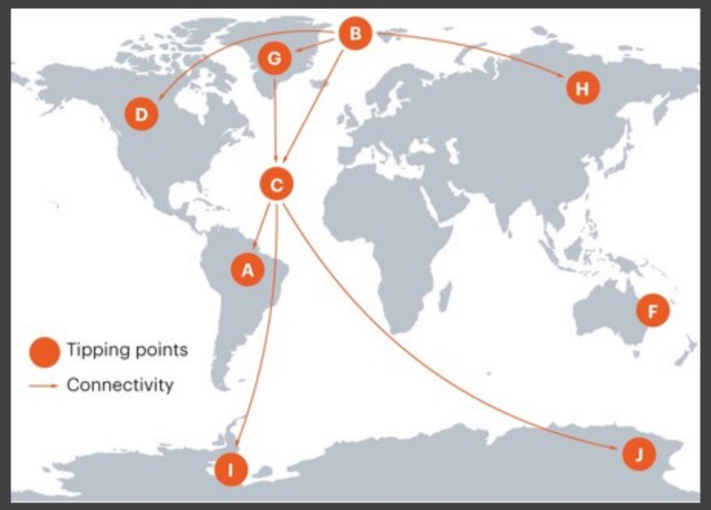
Video is a good tool to study how human interacts with digital environment.



My Research Question

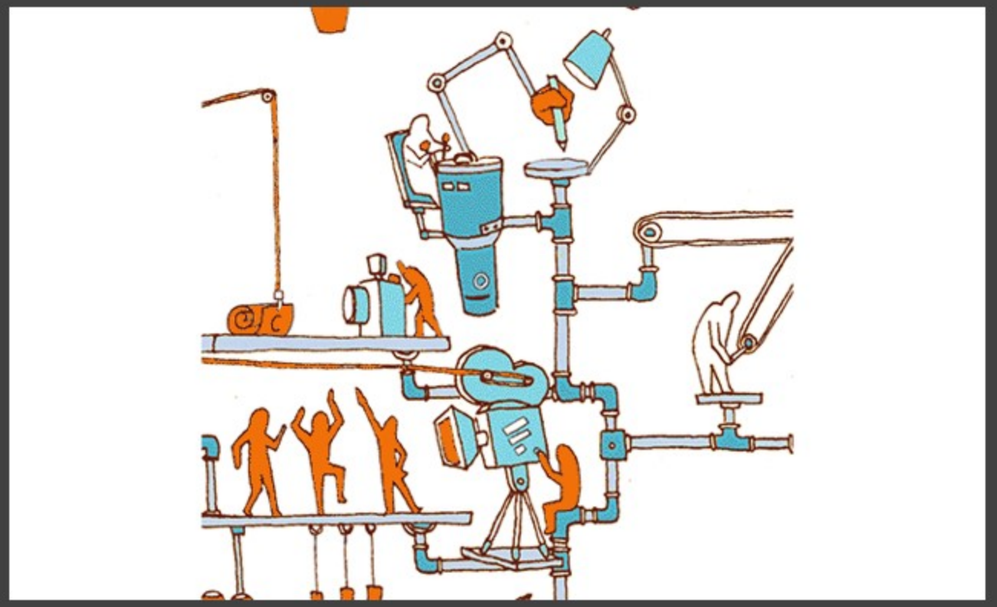
#1 What design works and How effective?

#2 How to better teach Earth System with videos?

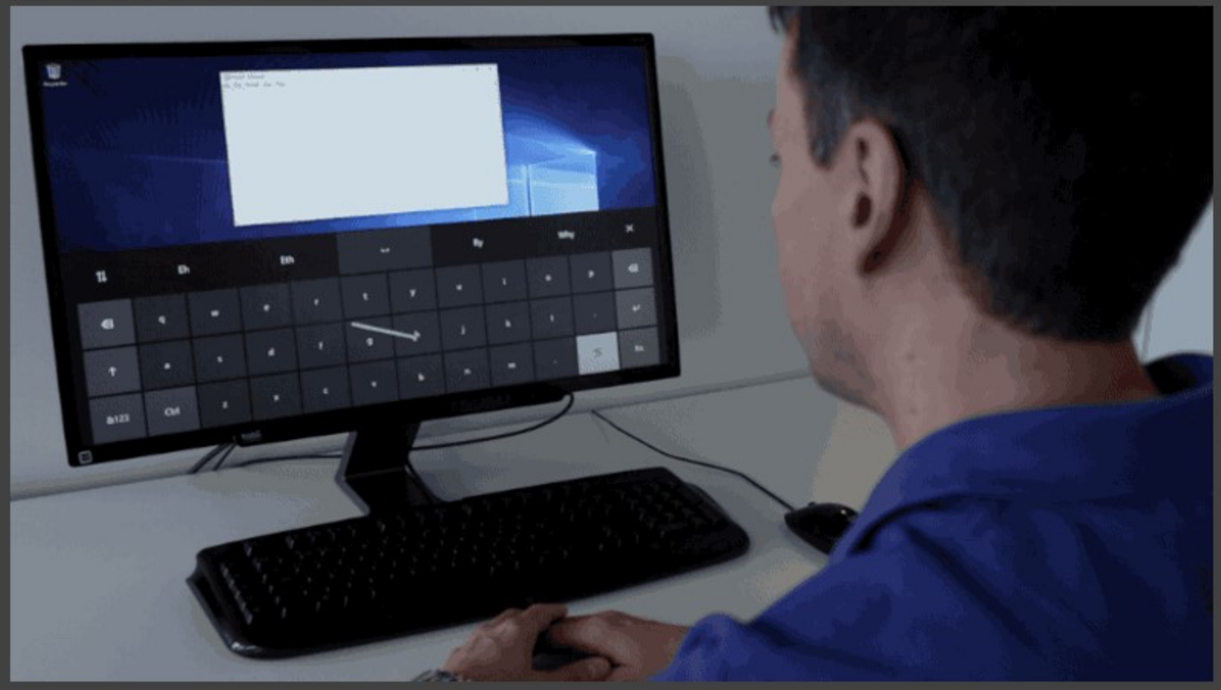


My Research Question

#3 What workflow creates effective videos efficiently?



#4 How to better assess videos?



Summary of My Approach

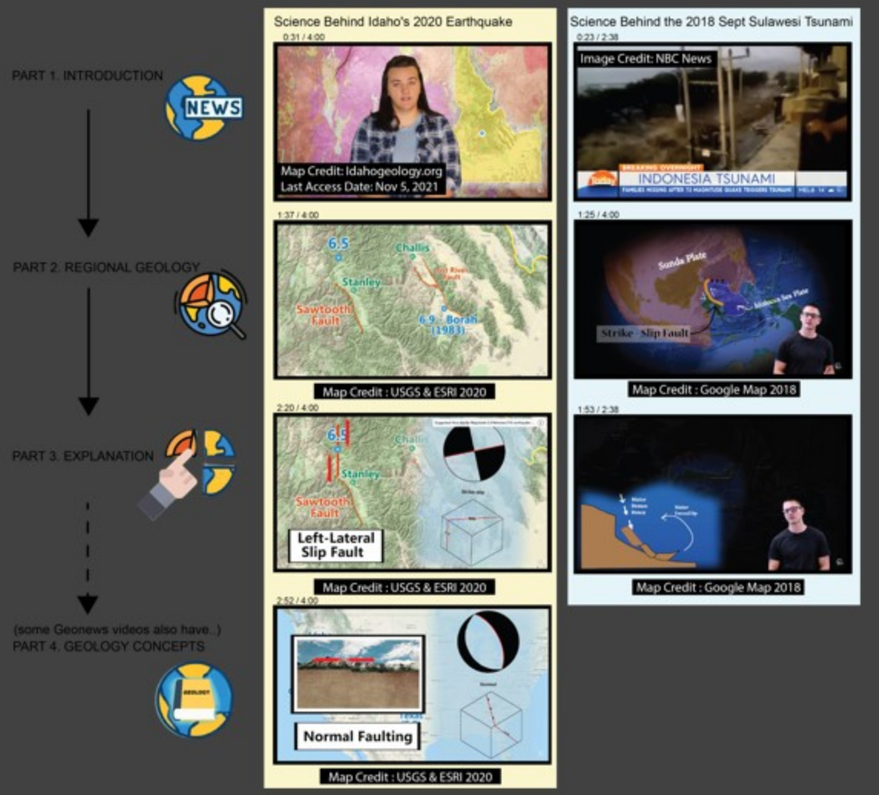
1. *What are the best solutions for teaching Geoscience topics with videos?*

   (a) Place-Based Educational Video Design Framework and Workflow .

Summary of My Approach

1. *What are the best solutions for teaching Geoscience topics with videos?*

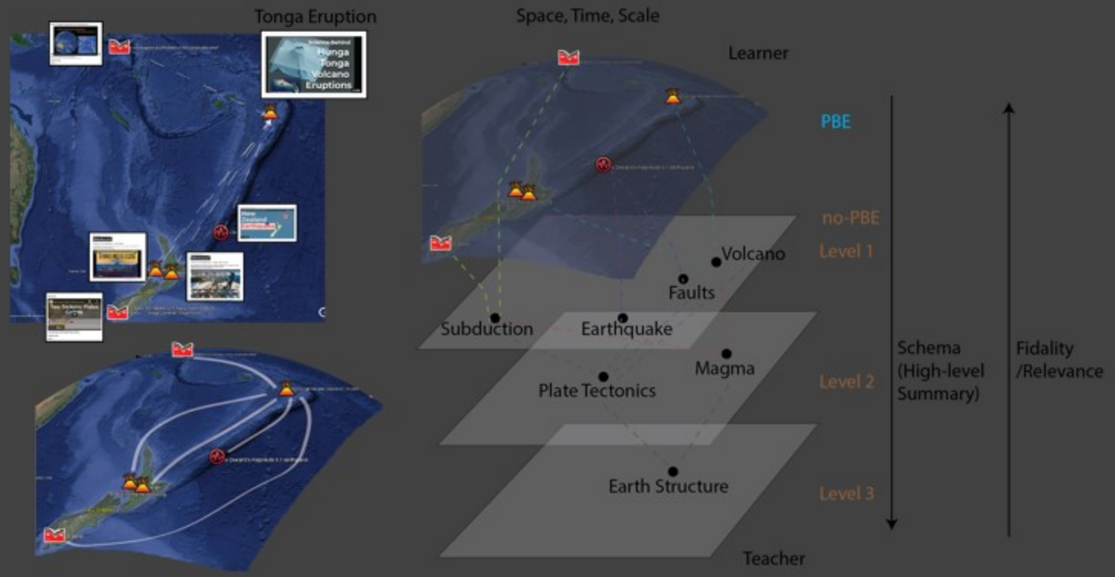
(b) Social Media Based and Event-Based Science Communication.



Summary of My Approach

1. *What are the best solutions for teaching Geoscience topics with videos?*

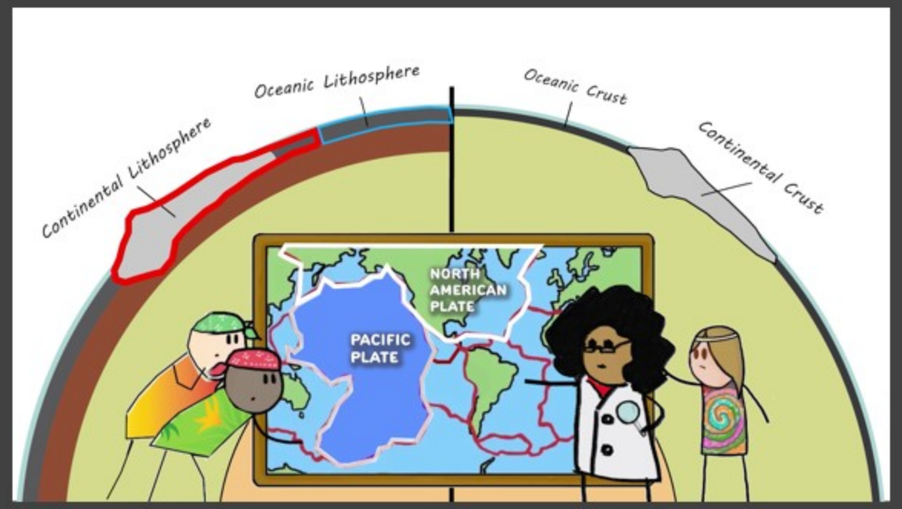
(c) Visualizing Relations of elements in Earth System with Structured Video Library.



Summary of My Approach

1. *What are the best solutions for teaching Geoscience topics with videos?*

(d) Design-based Implementing Research: Collaborative Video Making Workflow.



Summary of My Approach

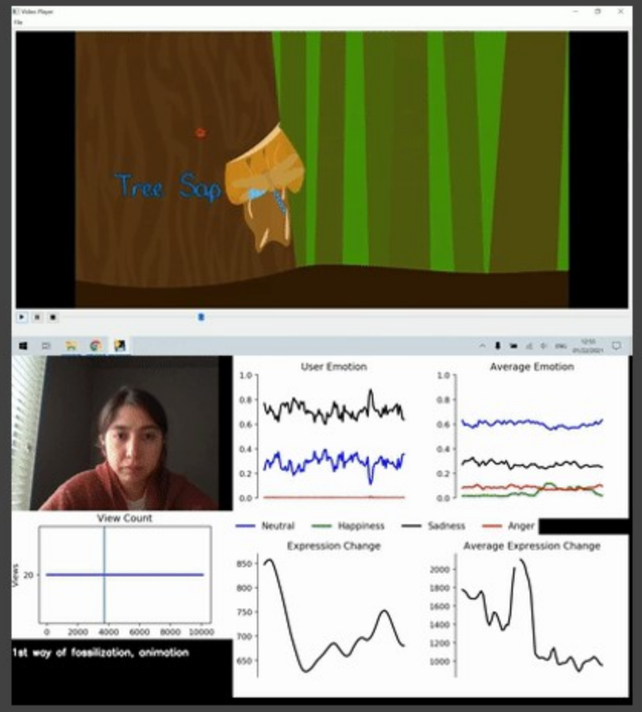
1. *What are the best solutions for teaching Geoscience topics with videos?*

2. *How do we know?*

   Mixed Method assessment.

How we assess?

Assessment



Quantitative (tests/big data)

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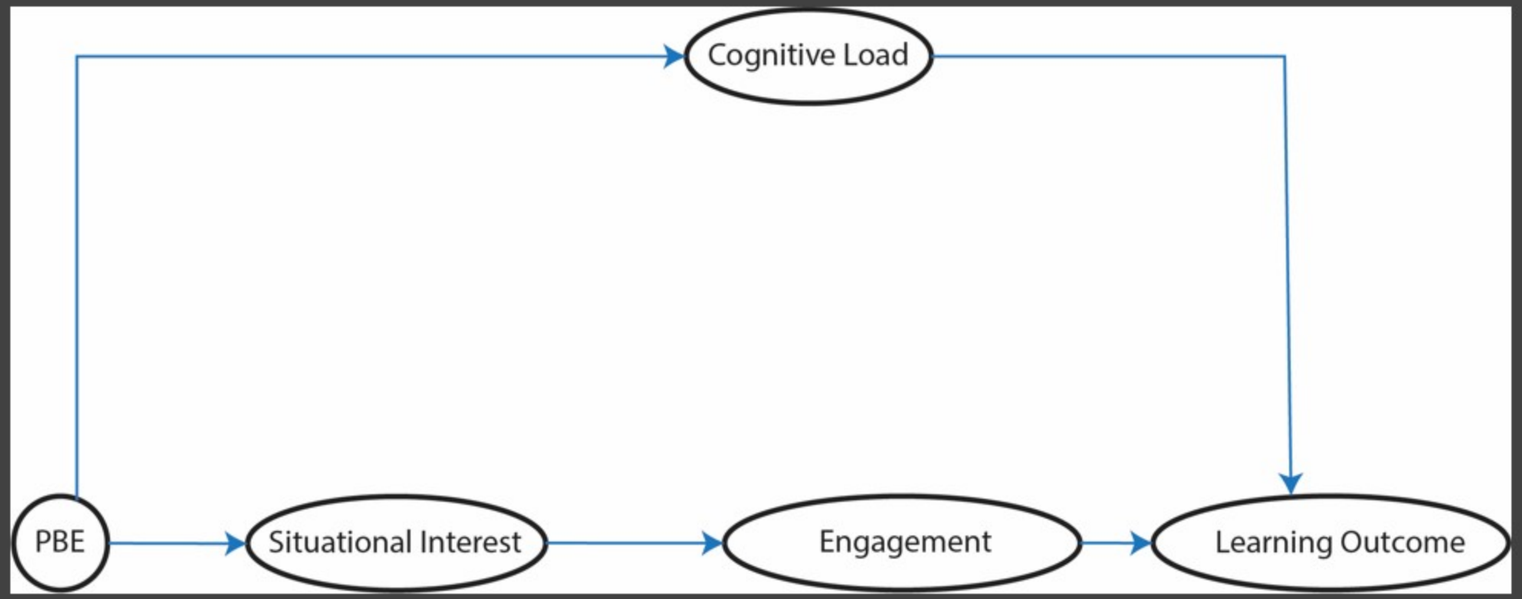
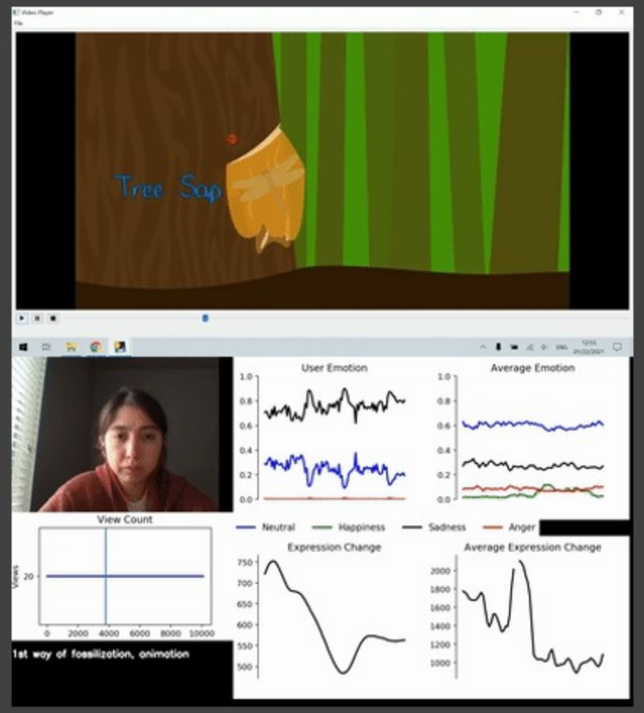
Qualitative (survey/interview content analysis)



How we assess?

Assessment



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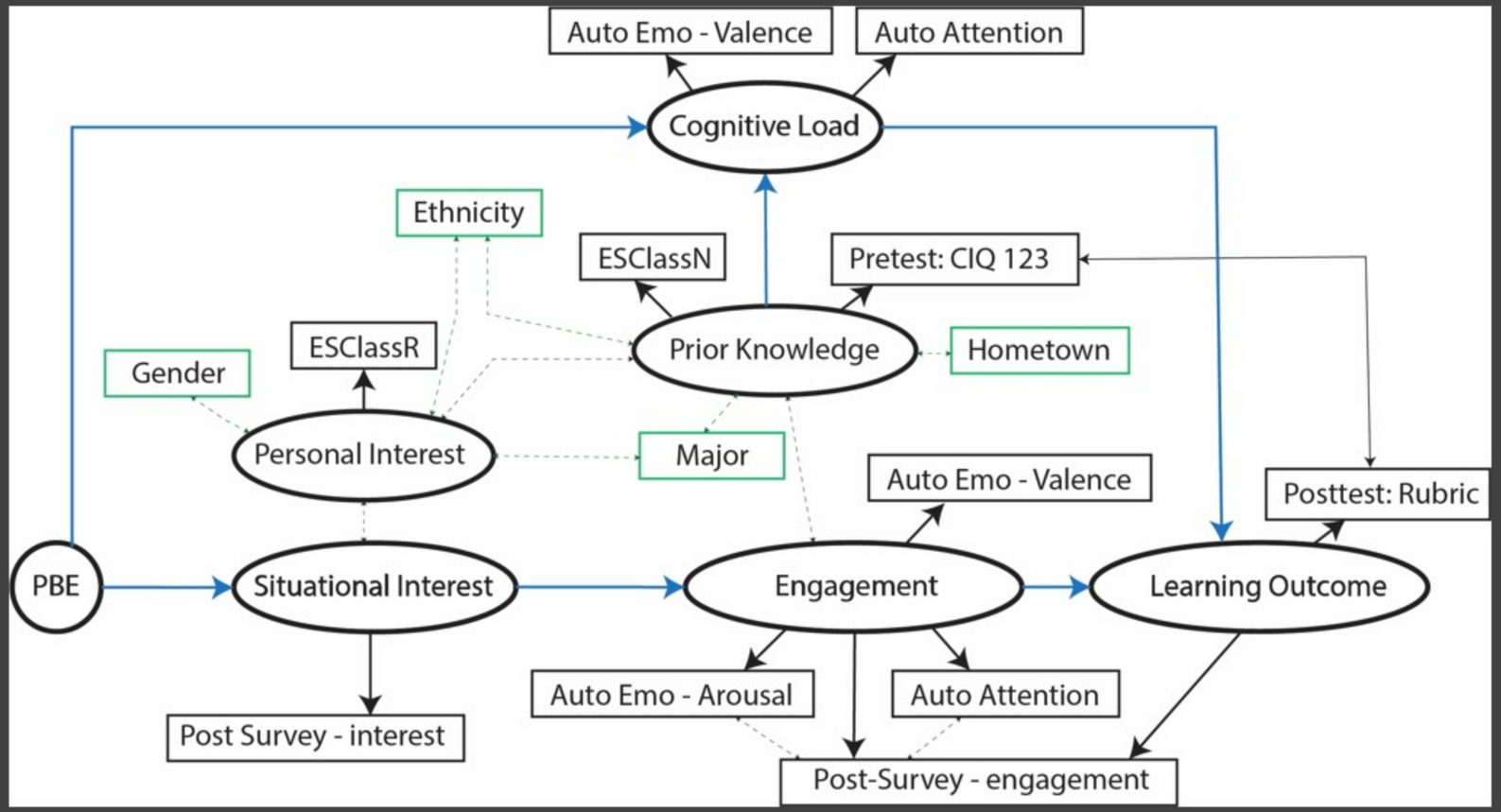
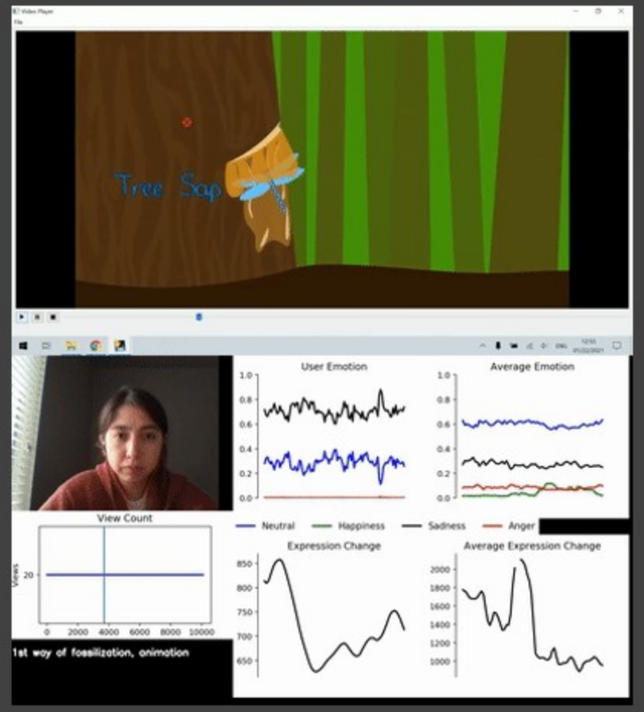


Assessment



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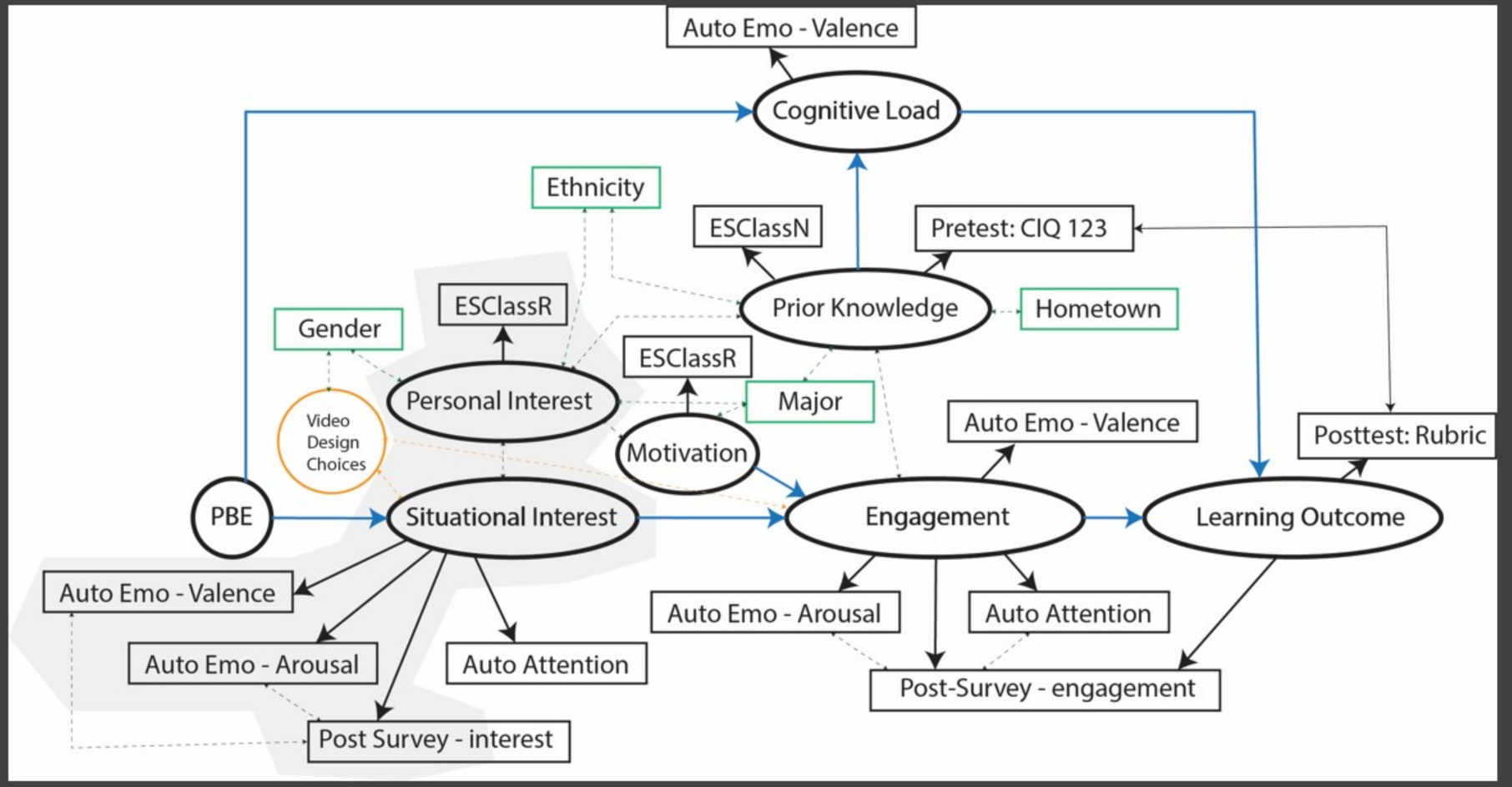

Contributions

1. *Evidence-based video design strategy and workflow for geoscience educators and experts to teach Earth Systems and Geoscience topics.*
2. *Effective Geoscience communication strategy for informal education on social media.*
3. *Novel mixed method assessment for real time video learning analysis.*

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