How AI and Analytics are Shaping the Future of Virtual Classrooms

Presented by Frederick Dixon
Co-founder, BigBlueButton Inc.
CEO Blindside Networks, Inc.

June 11, 2024

Hi, I’m Fred

I am the Product Manager of BigBlueButton.

In January 26, 2023 I wrote a medium article on ChatGPT needs at Tutor Mode.

ChatGPT Needs a Tutor Mode

Fred Dixon
23 min read · Jan 26

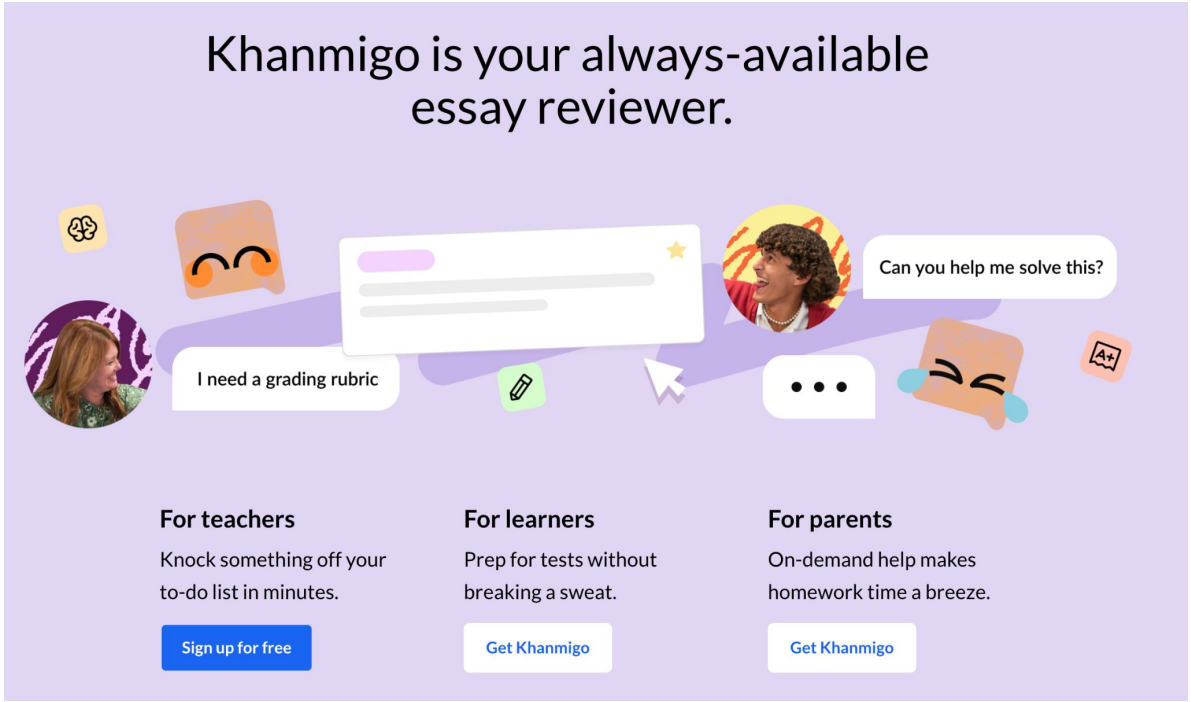
482 14

ChatGPT is going to be hugely disruptive to education. Given the ease with which it grants students answers to almost any question, I believe, in the near-term, it will be more harmful than helpful. Why struggle with a homework assignment when ChatGPT can give you the answer? *

I wrote this essay to understand what ChatGPT is actually doing, what it means to actually learn something, and the incredible benefit I believe it can deliver to students, educators, our educational institutions — and our planet as a whole — when ChatGPT has a “tutor mode” that never, ever gives you the answer.

https://medium.com/@ffdixon/chatgpt-needs-a-tutor-mode-2e4fd1e8f423

Khamigo



https://www.khanmigo.ai/

What is BigBlueButton?

(Hint: It's not a video conferencing system).

BigBlueButton is a **virtual classroom**

designed

to **increase learning outcomes for every student.**

What is BigBlueButton?

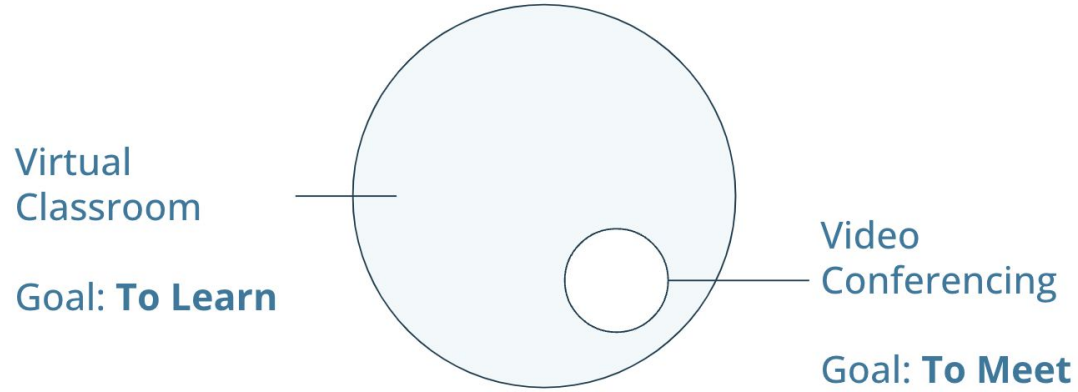
(Hint: It's not a video conferencing system).

BigBlueButton is a **virtual classroom**

that provides **built-in tools** for **active learning** and **live analytics**

to **increase learning outcomes for every student.**

The Virtual Classroom is not a Boardroom



Do we expect the use of AI in the virtual classroom to be the same as in the boardroom (true/false)?

Our Promise

Role	Promise
Educator	Teach more effectively
Support (LMS Admin, Instructional Technologist, Support Staff)	Make your job easier
Decision Maker	Increase overall quality of education (measured in brand, profitability, ratings, etc.)
Student	Efficient Learning

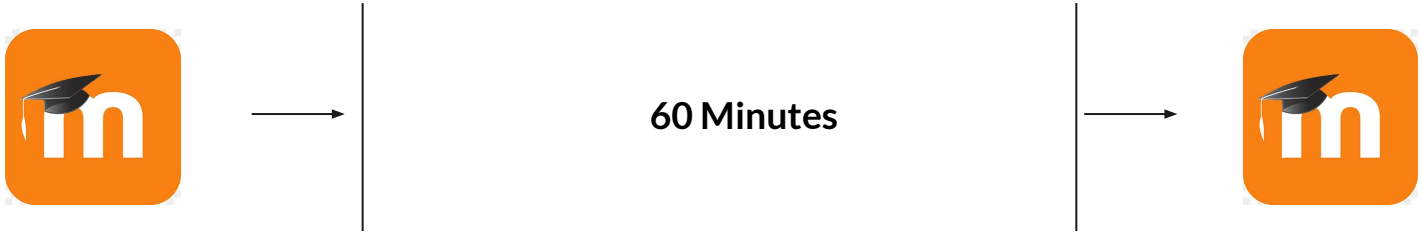
Our Promise

Role	Promise
Educator	Teach more effectively
Support (LMS Admin, Instructional Technologist, Support Staff)	Make your job easier
Decision Maker	Increase overall quality of education (measured in brand, profitability, ratings, etc.)
Student	Efficient Learning

How might we achieve this quote (both educator and student) ?

“That was the best virtual classroom I ever had!”

What would be examples of using AI in a virtual classroom?

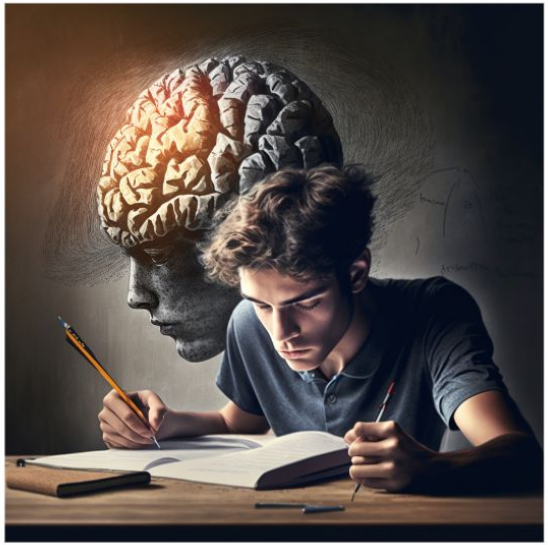


Framework → BigBlueButton → AI

Framework → BigBlueButton → AI

What are good uses of AI in the classroom?

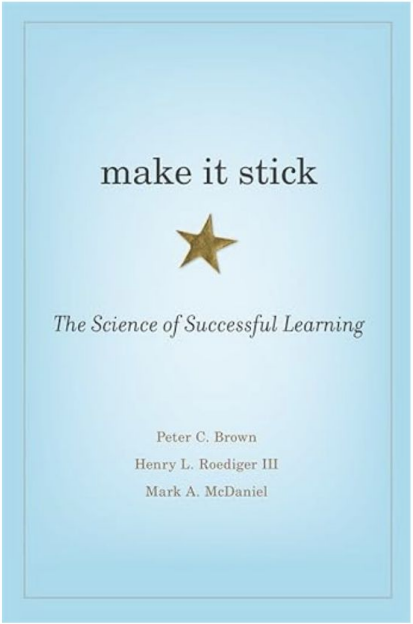
60 years of pedagogy



Effective Learning

According to the authors of “Make it Stick”, which approach to learning is most effective?

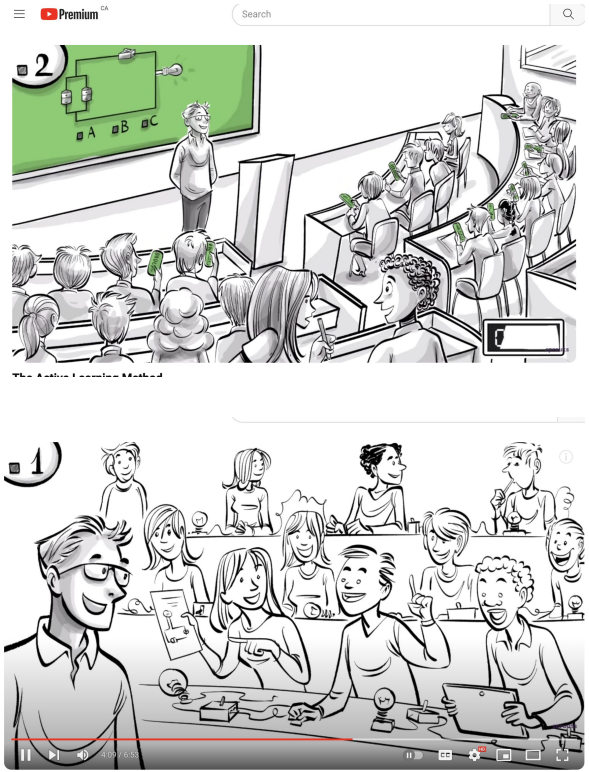
A. Re-reading material
B. Underlying
C. Highlighting
D. None of the above



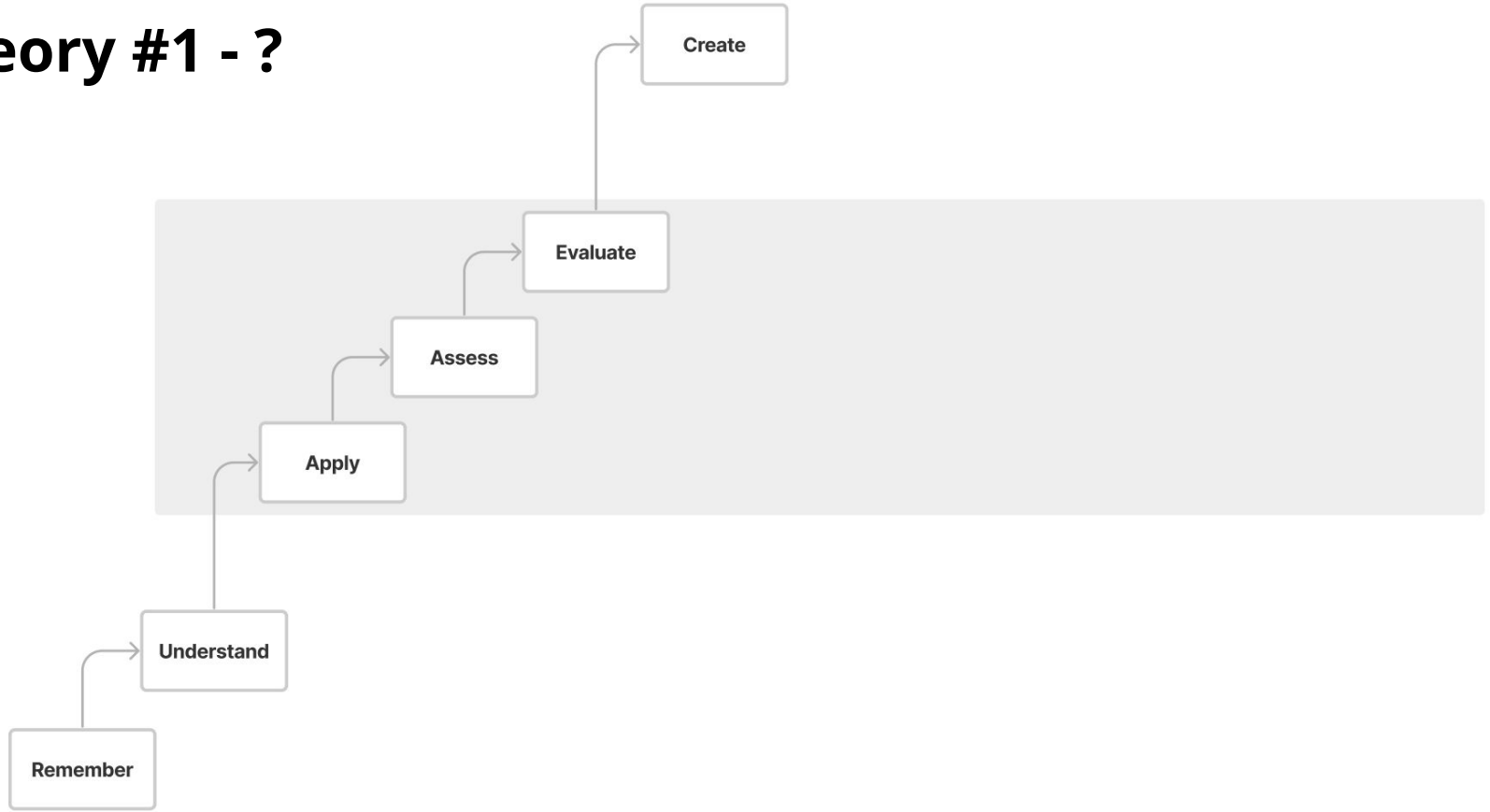
A 2nd year Harvard physics class into two groups on week 11 and 12.

When asked whether they felt they learned more, which group scored higher?

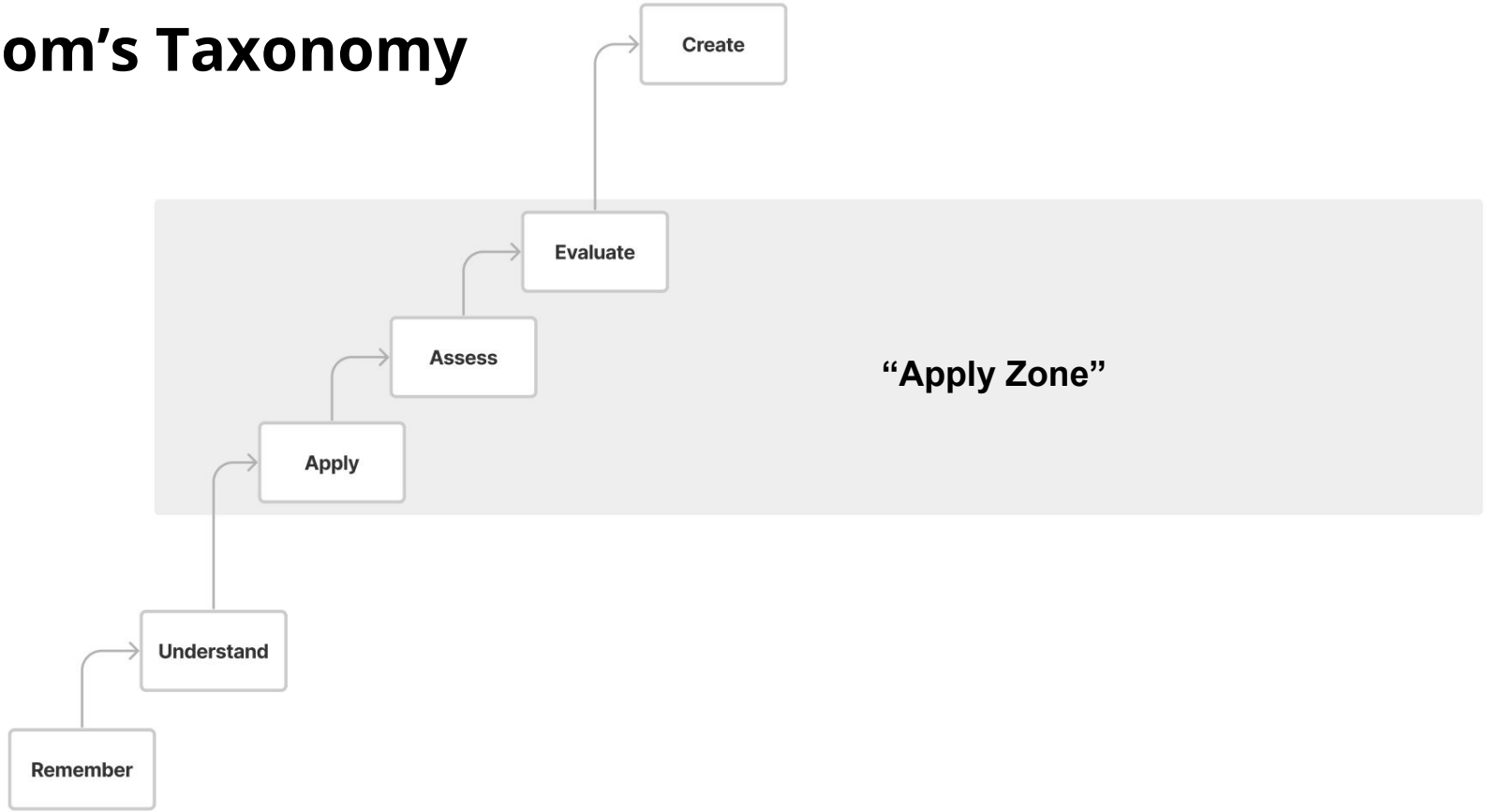
A) Lecture group
B) Problem solving group



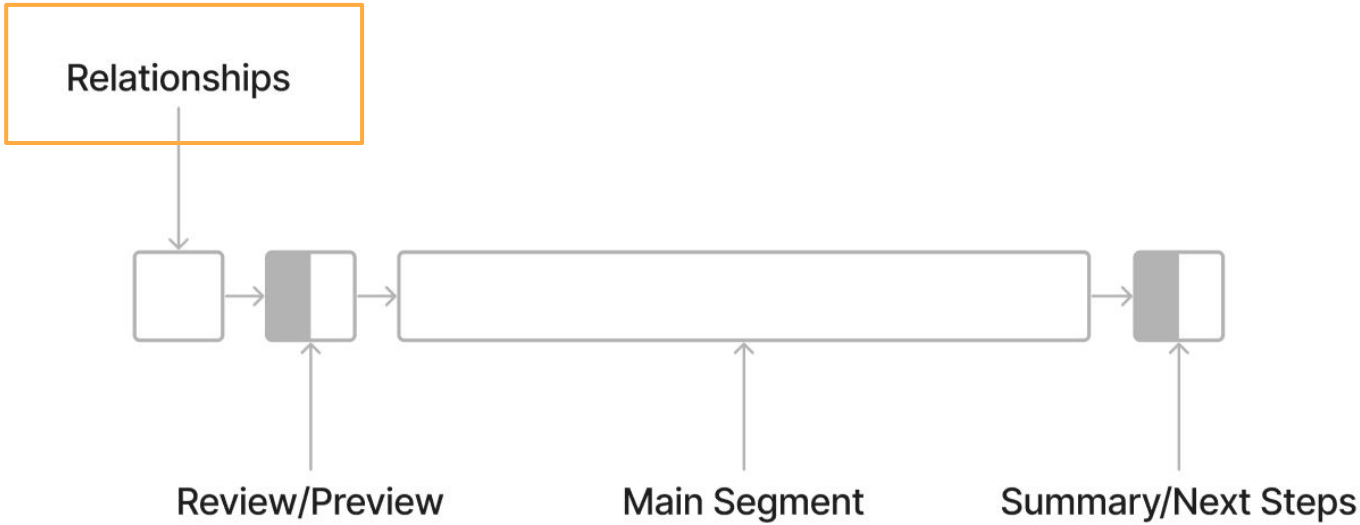
Theory #1 - ?

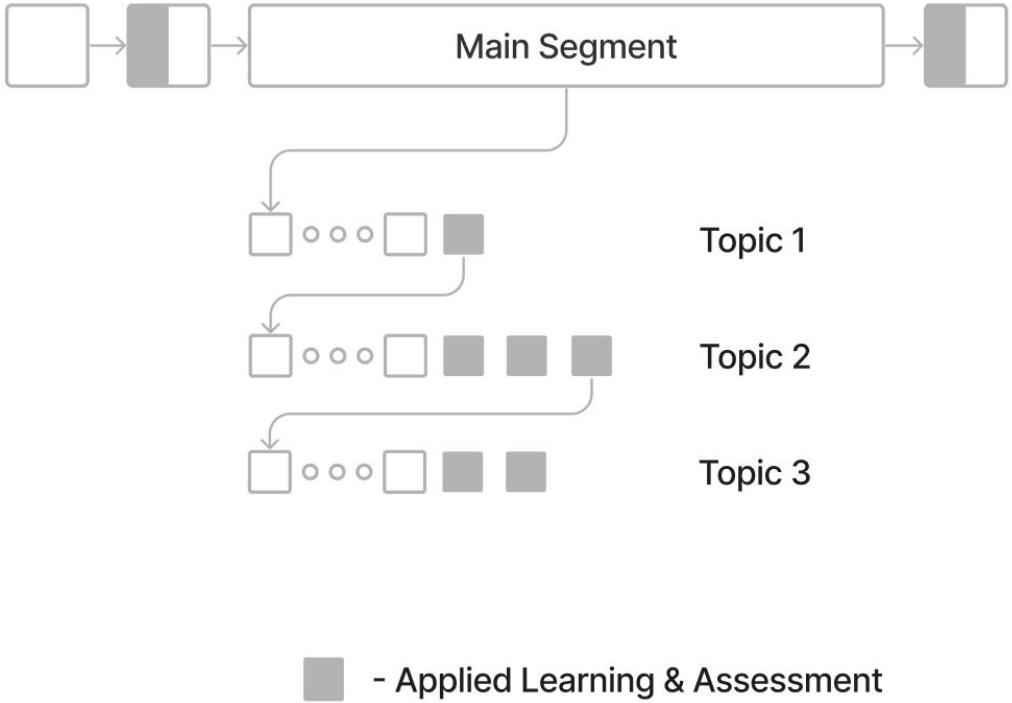


Bloom’s Taxonomy

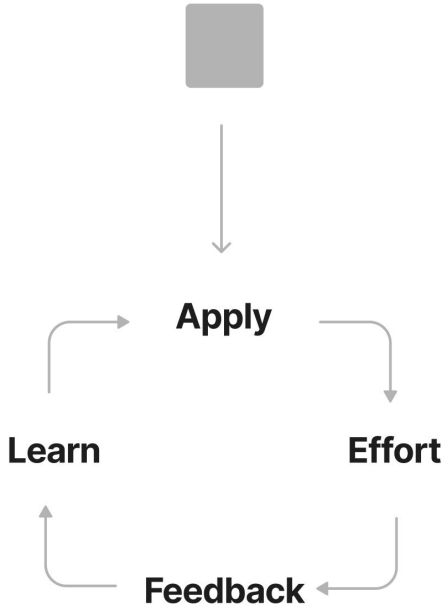


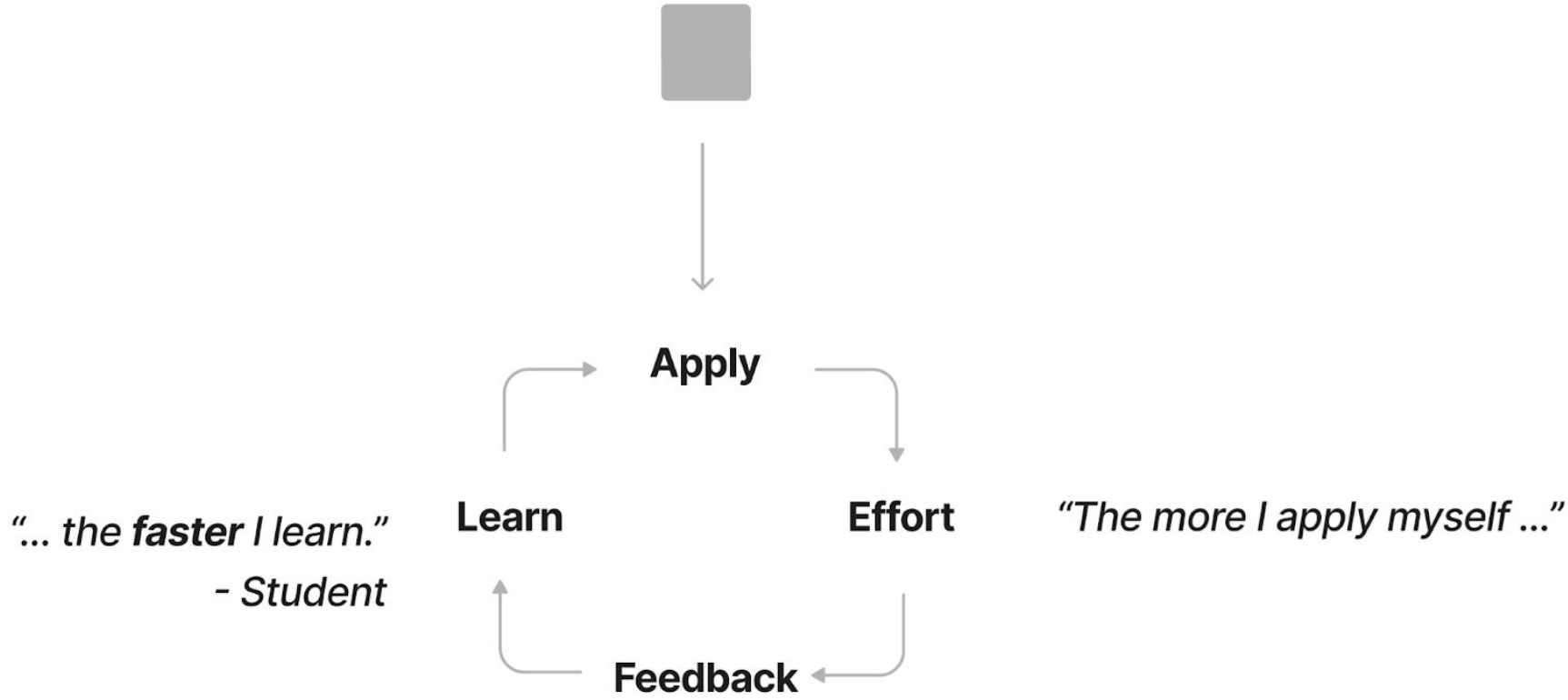
Structure of an effective virtual class



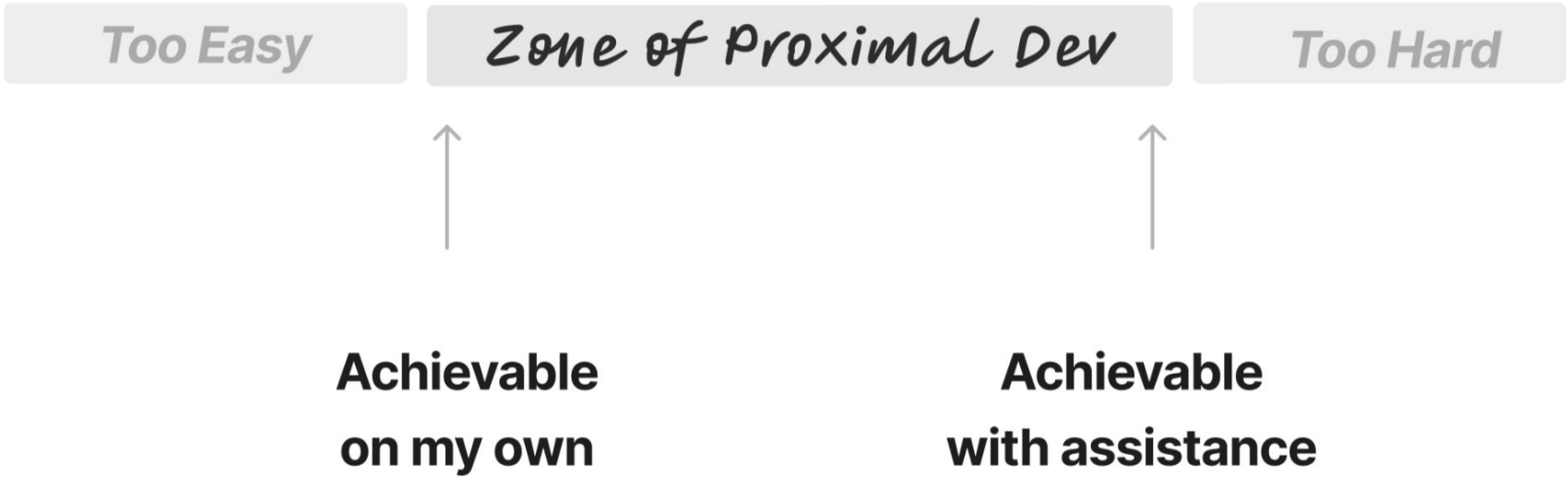

Main Segment
Topic 1
Topic 2
Topic 3
- Applied Learning & Assessment

The virtuous cycle of Applied Learning

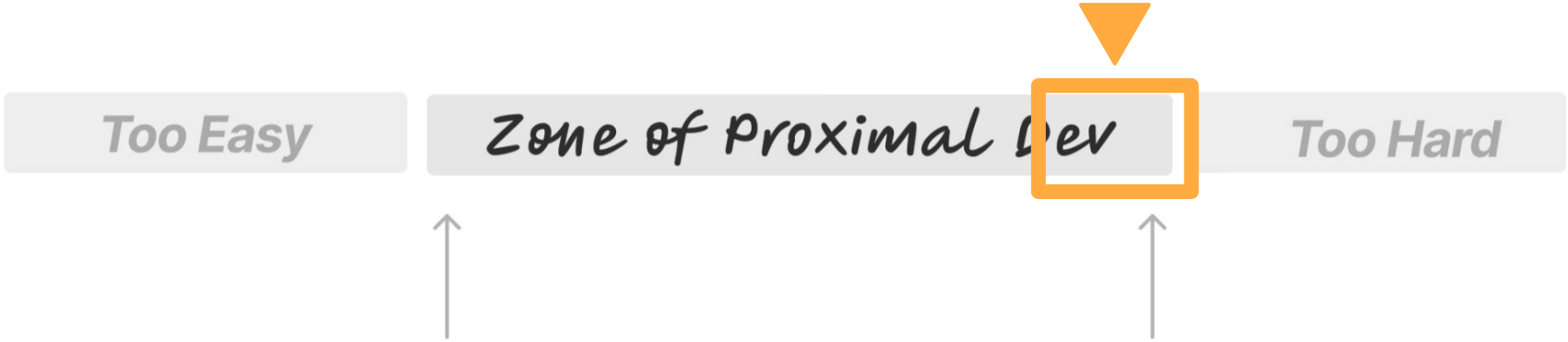



Apply
Effort
Feedback
Learn
"... the **faster** I learn."
- Student
"The more I apply myself ..."

Theory #2 - ?


Too Easy
Zone of Proximal Dev
Too Hard
Achievable
on my own
Achievable
with assistance

Theory #2 - Lev Vygotsky



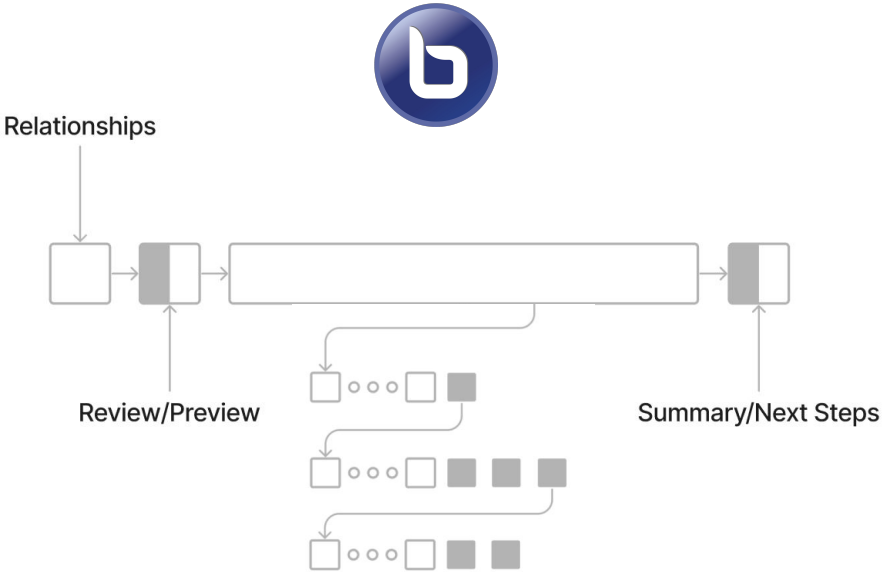
Our “North Star” for AI in the classroom

More time for **Active Learning** and **Feedback**

Before

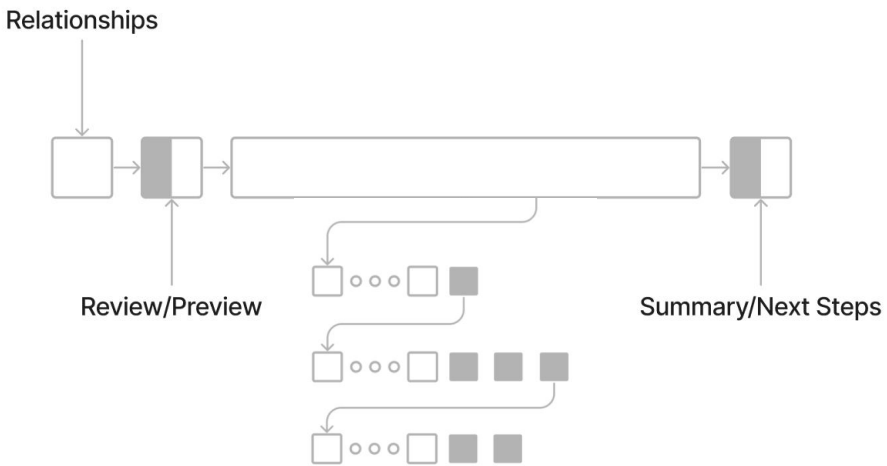
During

After

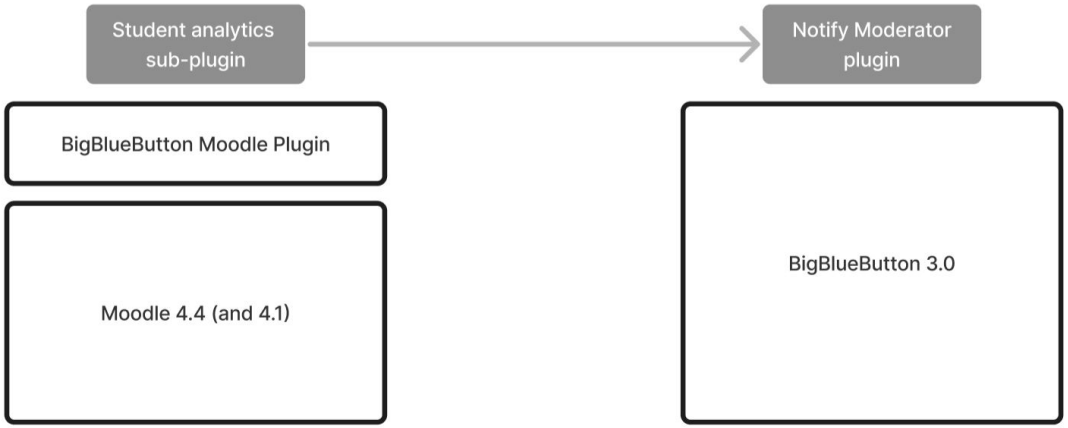


#1

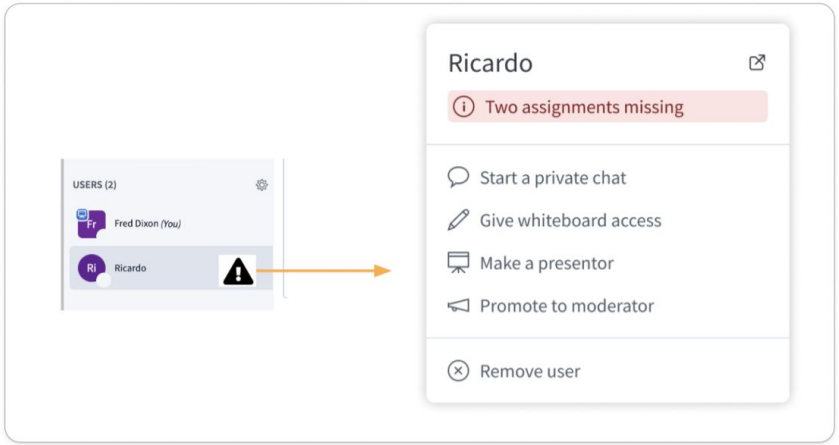
Pass in AI & Actionable Analytics

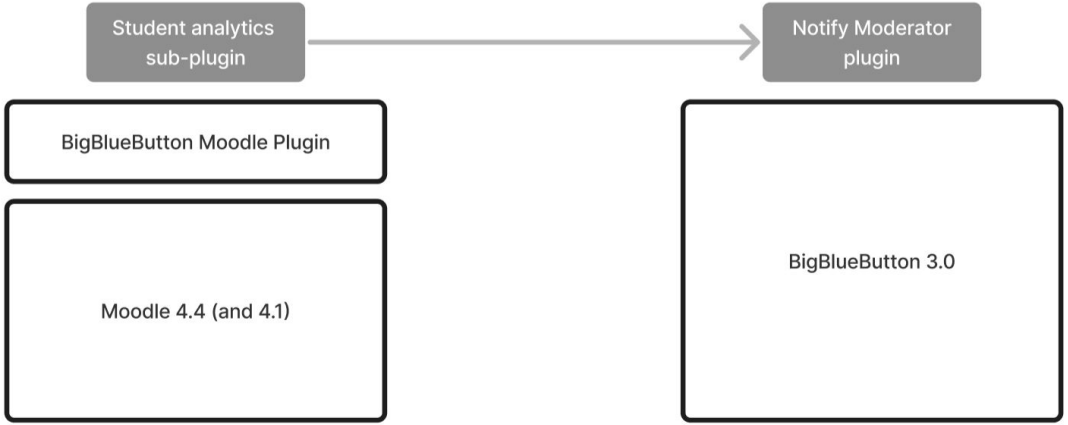


Pass insights from the LMS to BigBlueButton

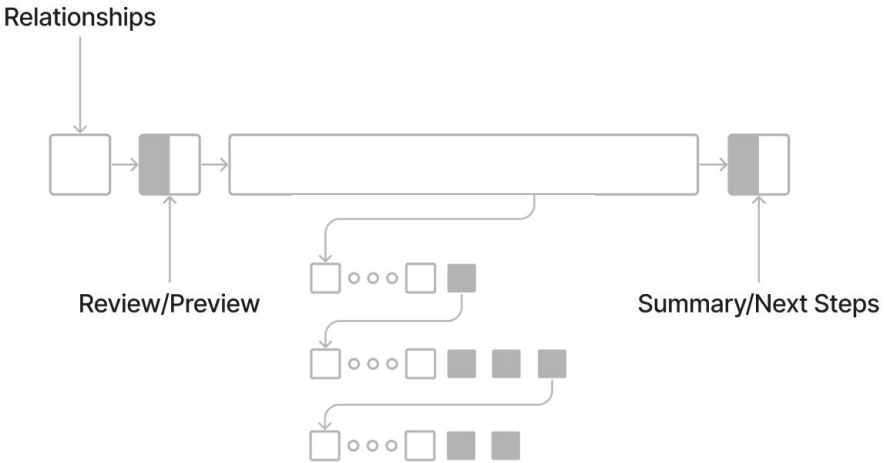


Pass insights from the LMS to BigBlueButton





#2



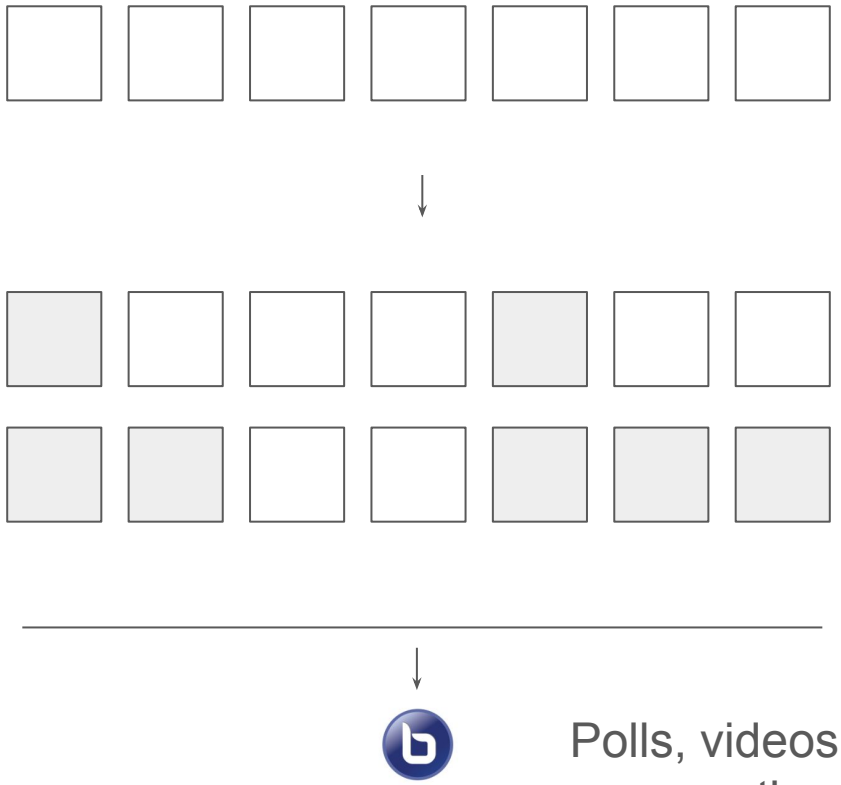
Create content ahead of time

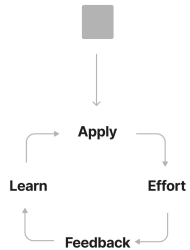
AI

“Give me 10 slides on volcanoes for a 30 minute class to grade 7.”

“Give me 10 slides on volcanoes for a 30 minute class to grade 7.”

“Add active learning activities to these slides.”

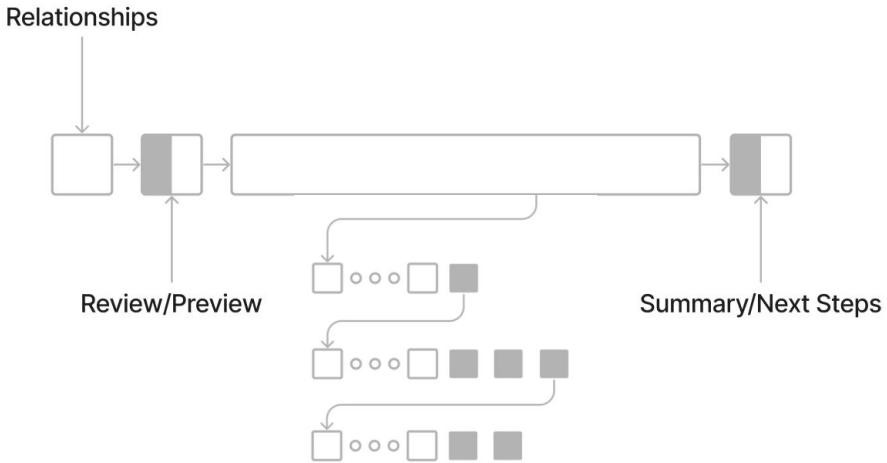




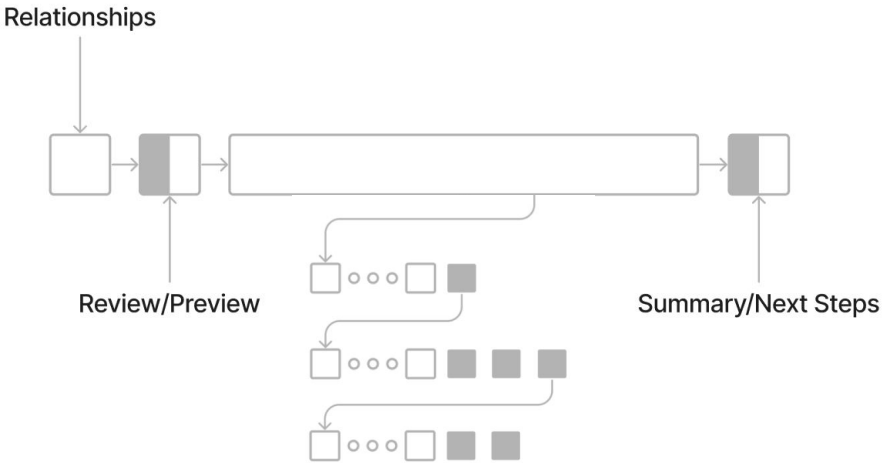
Polls, videos, breakout rooms, other (H5P)

#3

Summarize and index recordings



#4



Follow-up quiz questions spaced over time.

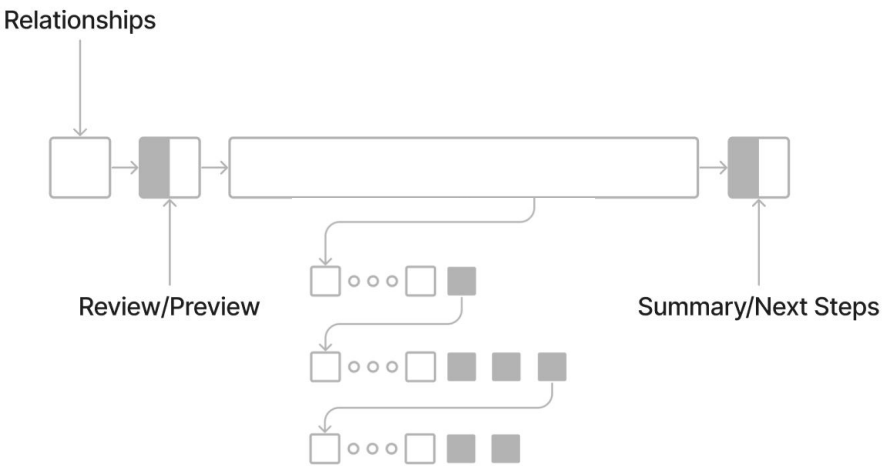
#5

Question

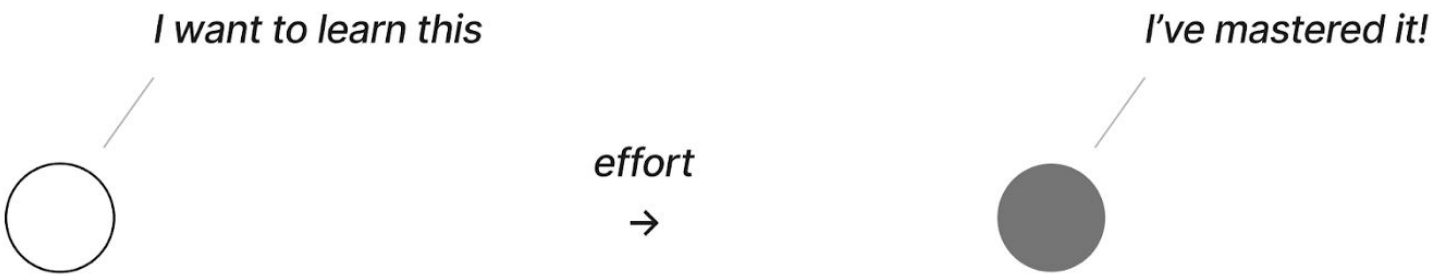
If BigBlueButton used AI to summarize the lecture for students 5 minutes before the end of the class, would that help learning?

#6

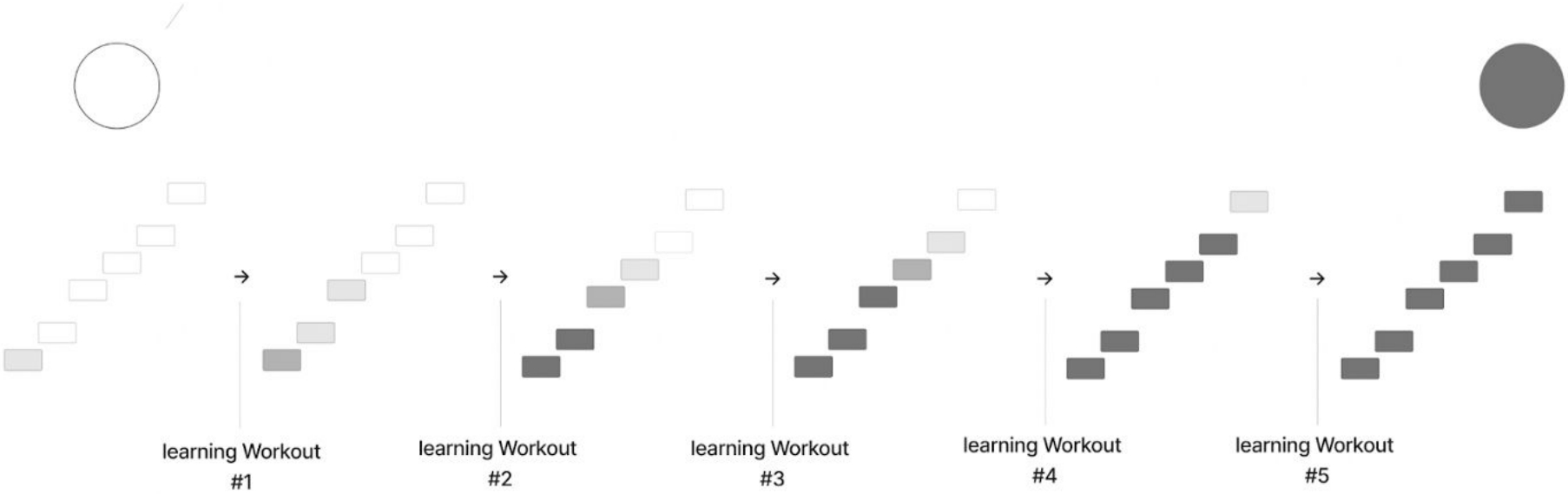
LMS and BigBlueButton – is there is missing piece?

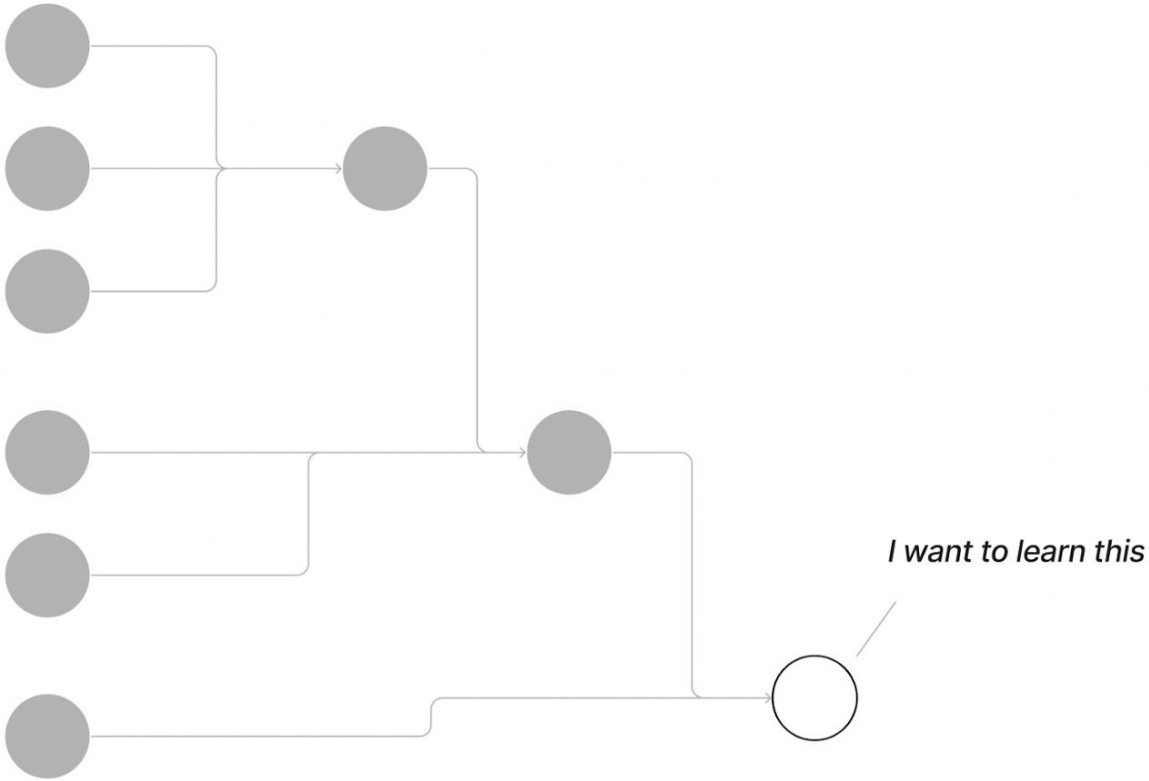


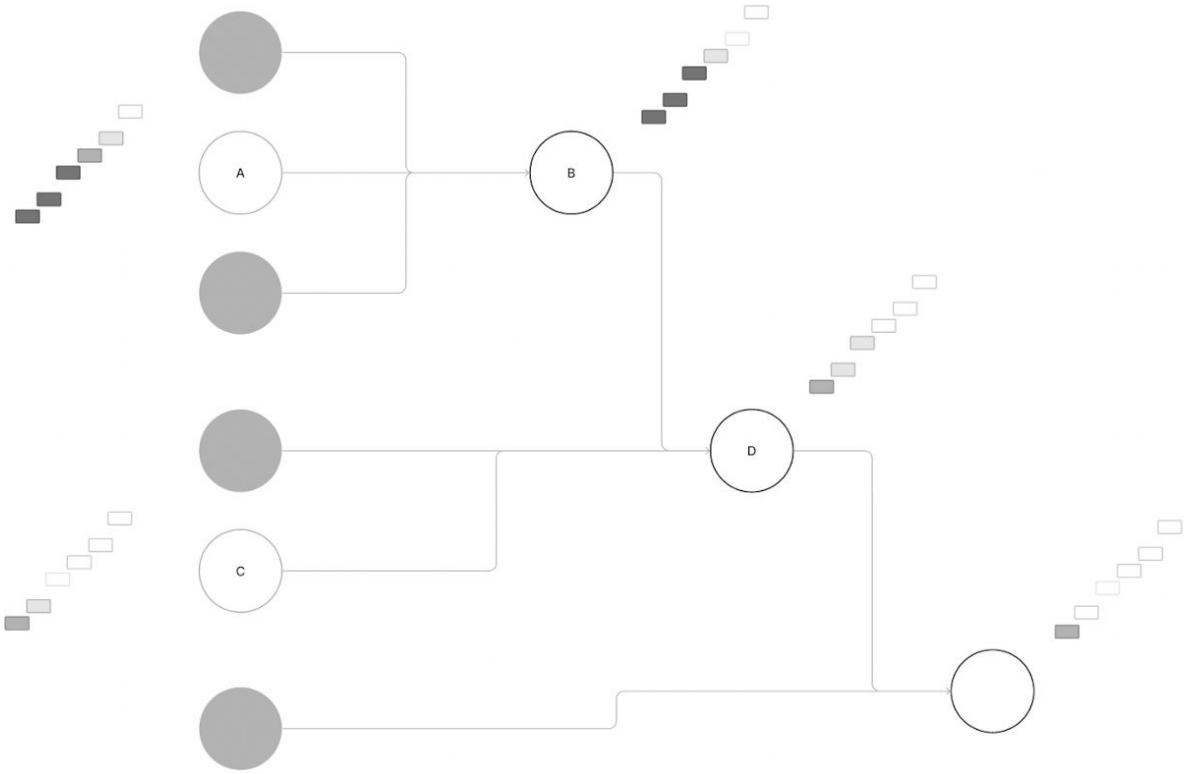
Let's revisit the challenges of learning



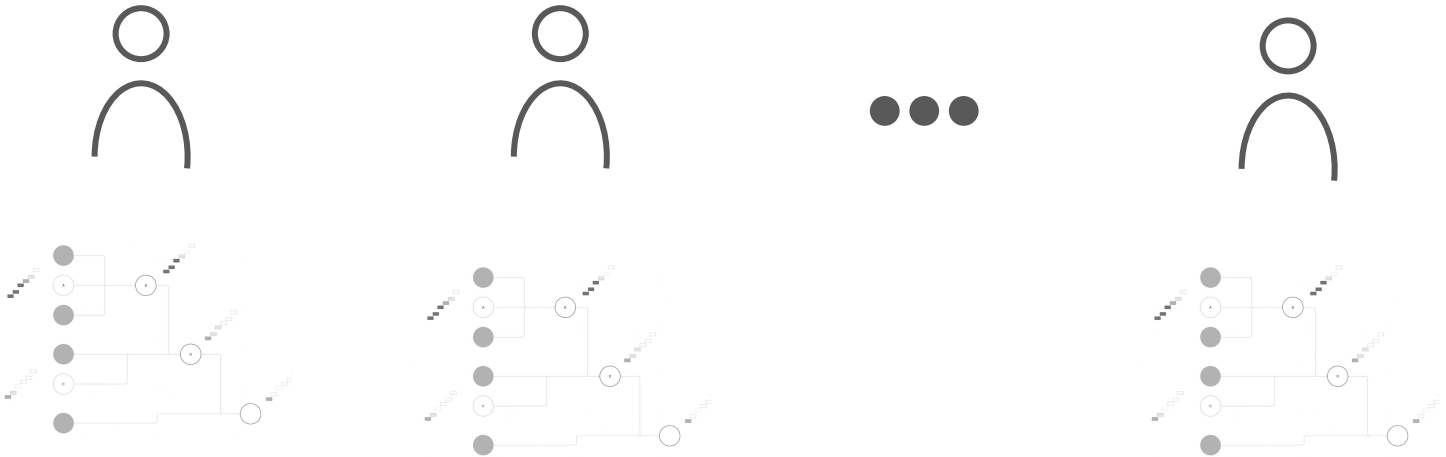
Learning occurs over time




I want to learn this


A
B
C
D

Imagine teaching a class of 30 students - each with different gaps!



LMS

LMS

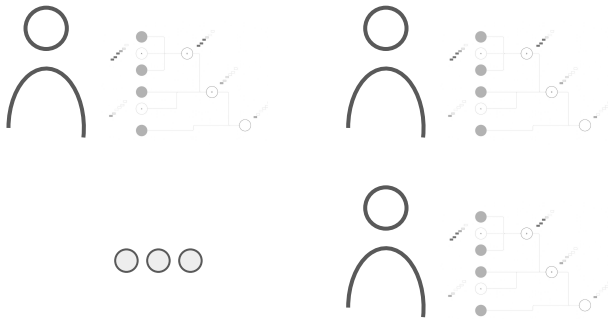
BigBlueButton

LMS

LMS

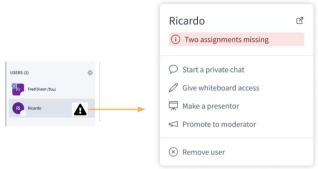
BigBlueButton

Personal tutor



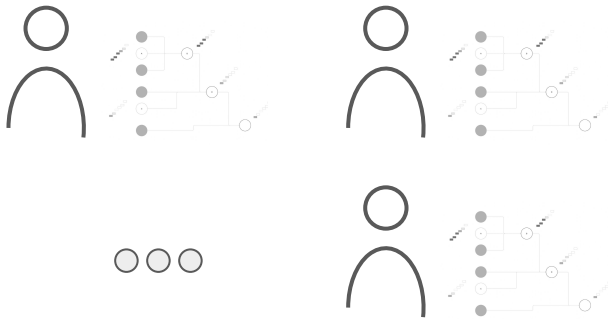
LMS

LMS

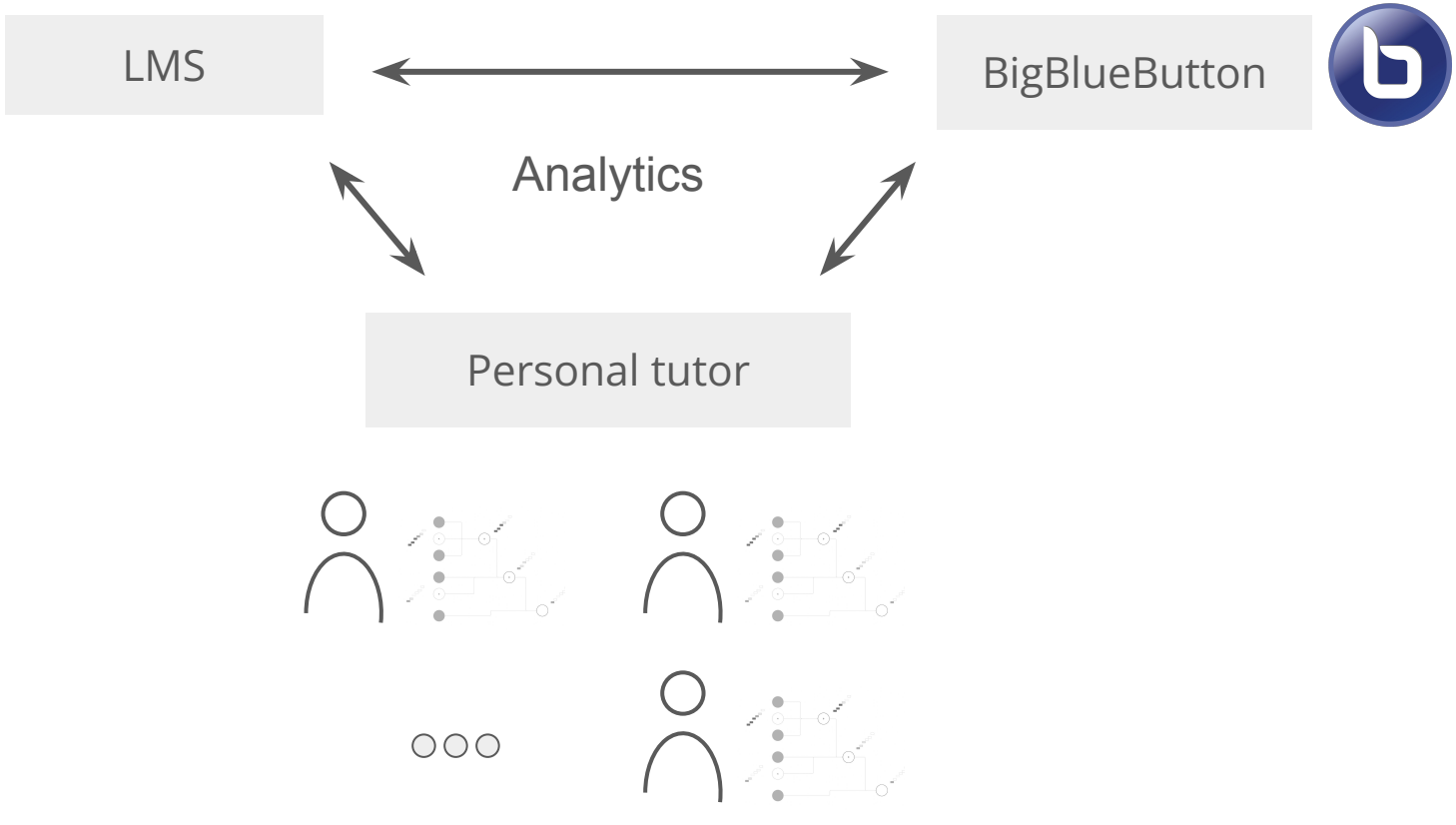


BigBlueButton

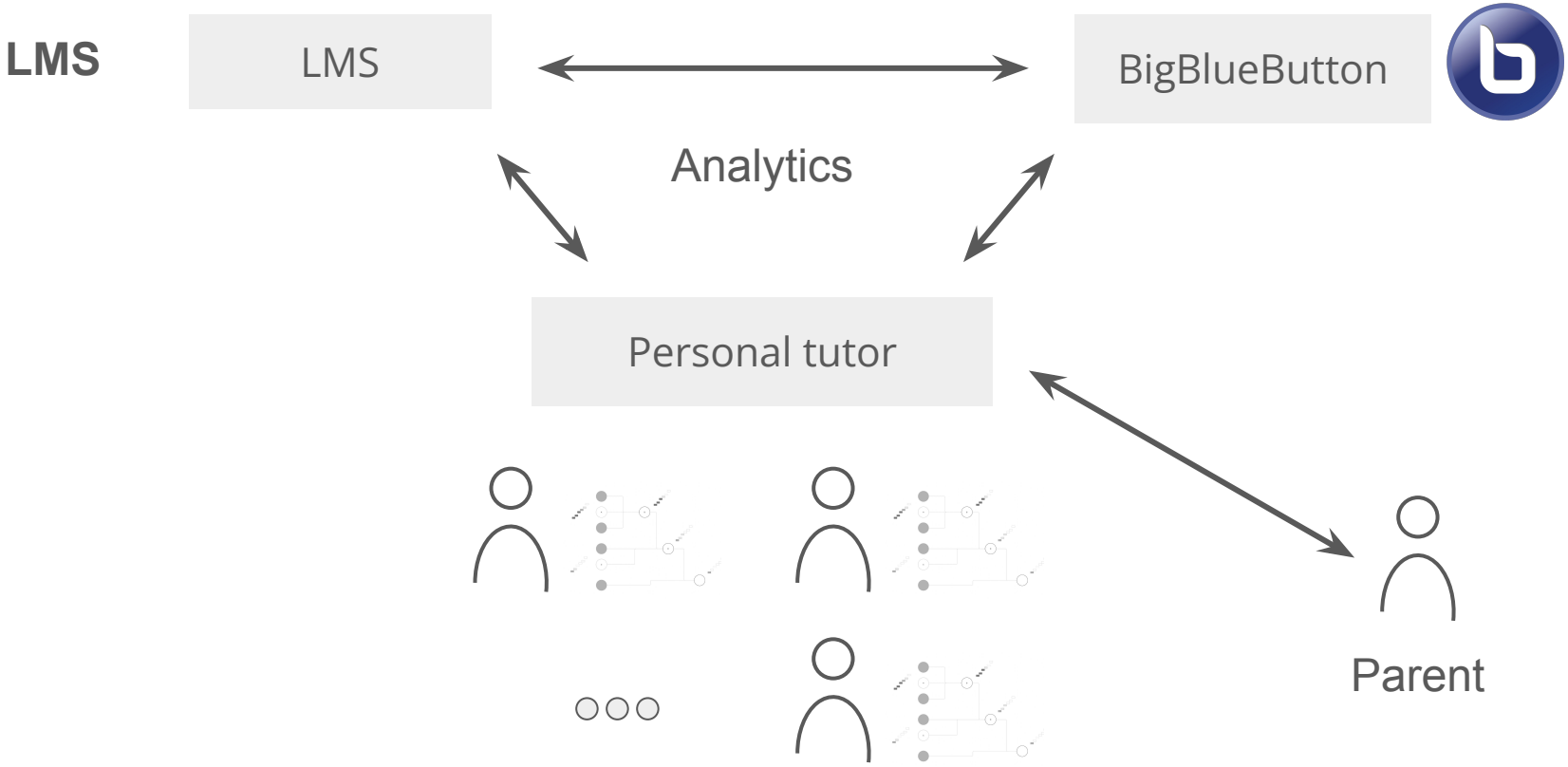
Personal tutor



LMS



LMS



The future for the educator

1. **Use AI to save time creating content and activities**

2. Role shifts towards **Coach/Mentor**

3. More opportunities for
    a. **Personalized teaching/learning**
    b. **Cultivate critical thinking skills (not rote learning)**
    c. **Emphasis on interpersonal/teamwork skills**

Summary

- Struggle is good!
- AI can make it more efficient (more time for **active learning** with **timely feedback**)
- The virtual classroom can greatly facilitate this environment
- **Humans learn best from Humans**

How AI and Analytics are Shaping the Future of Virtual Classrooms

Presented by Frederick Dixon
Co-founder, BigBlueButton Inc.
CEO Blindside Networks, Inc.

June 11, 2024