Exploring Generative AI in Teaching & Learning at BU

AI INFO SERIES

FALL 2023

BU Digital Learning & Innovation

BU Center for Teaching & Learning

THE IMPLICATIONS OF

Generative AI

ON TEACHING & LEARNING

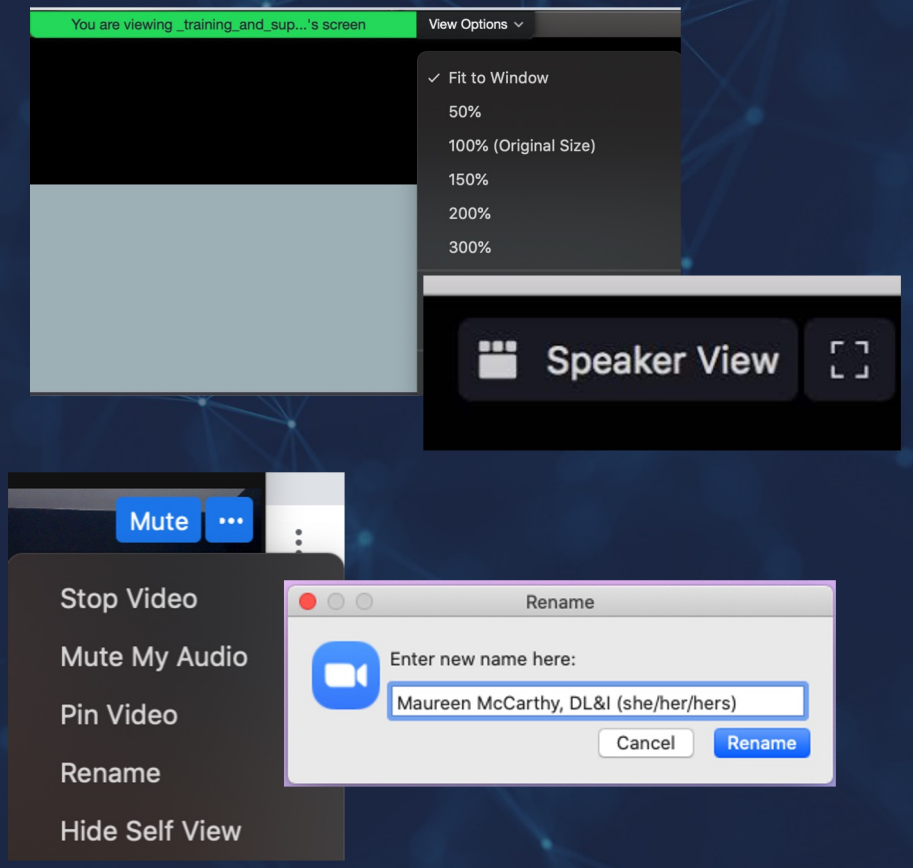
WEDNESDAY, AUGUST 23, 2023

11:00 AM - 12:00 PM

Quick Reminder

For optimal viewing experience, you can change your view options. We recommend **Speaker View** over Gallery View.

Optional: Add your department, program or school to your Zoom name.



Recording

Today’s Info Session is being recorded and will be available for viewing via bu.edu/digital later this month.

Q&A

Please share your questions in the Q&A feature
and the moderator will address questions
at the end of the session.

The speaker

Chris Dellarocas is associate provost for Digital Learning & Innovation and the Shipley Professor of Management at the BU Questrom School of Business.

He leads the advancement of activities and strategies that enhance academic innovation through the use of technology at Boston University.

Why are we here today?

- What is generative AI?
- What challenges and opportunities it presents for teaching and learning
- What should we be doing now, this year, next year?
- How are our offices going to support you?
- Q&A

We've been here before …

Newsweek 90 U.S. World Tech & Science Culture Autos

NEWS

Ditch The Calculators

BY NEWSWEEK STAFF ON 11/2/97 AT 7:00 PM EST

The New York Times

Opinion

The Calculator Crutch

By Richard J. Klutch

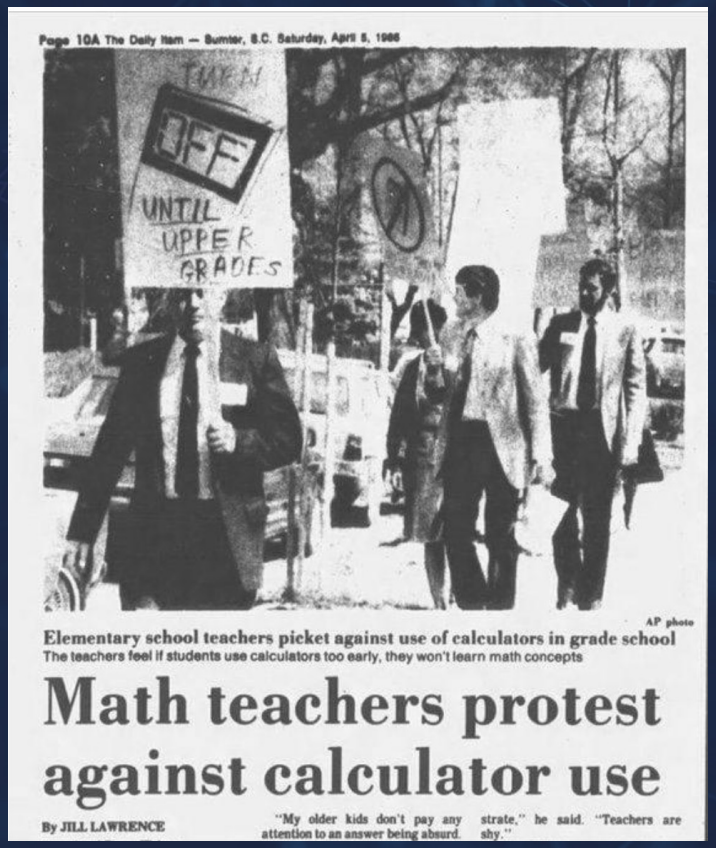
Sept. 29, 1991

Reader's Digest

Kick calculators out of class

Article Abstract:

Calculators should be banned from elementary schools because they grossly undermine the entire mathematics curriculum. Children do not have the opportunity to learn basic arithmetic, dependent as they are on calculators that automatically give answers.



Journal for Research in Mathematics Education
2003, Vol. 34, No. 5, 433–463

A Meta-Analysis of the Effects of Calculators on Students' Achievement and Attitude Levels in Precollege Mathematics Classes

Aimee J. Ellington, *Virginia Commonwealth University*

result of calculator use.

When calculators were included in testing and instruction, students in grades K–12 experienced improvement in operational skills as well as in paper-and-pencil skills and the skills necessary for understanding mathematical concepts. With regard to operational skills and conceptual skills, the results of calculator use were

Differences between Calculators and Generative AI

Calculators

- Deterministic
- One skill affected
- Output always correct

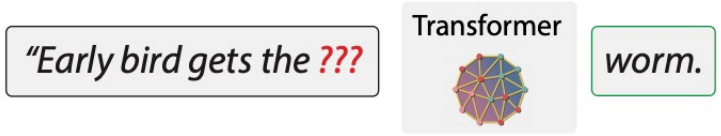
Generative AI

- Stochastic
- Many skills affected
- Output may be incorrect or biased

How does ChatGPT work?

How does Chat GPT work?

Ask Chat GPT to predict (generate) the next word.



Reward the model if it predicts worm...

...and we repeat for every sentence we can find!

Generative

We are asking Chat GPT to generate the next word!

Pretrained

Trained on a simple task, but can be applied to many others!

Transformer

The ML model that guesses the word.

Source: hazyresearch.stanford.edu

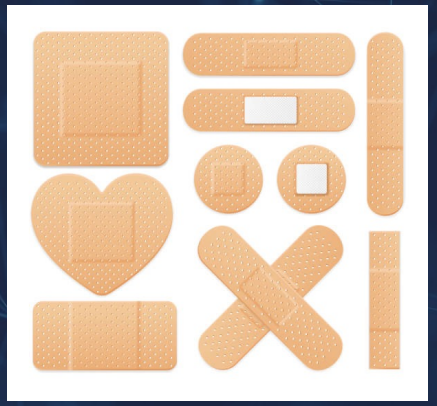
Generative AI challenges for education

- Impact on Student Learning
- Assessment and Evaluation
- Information Accuracy and Bias
- Equity of Access
- Data Privacy and Security

Some quick fixes for assignment challenges

Ideas for avoiding/limiting the use of AI

- Flip the classroom
- Conduct oral examinations
- Multimedia assignments
- *Base assignments on recent events*
- *Base assignments on personal experiences*



Ideas that integrate AI into the assignment

- Ask students to document on and reflect on the evolution of their work (works with or without AI)
- Base assignments on critiquing and augmenting AI's output
- Ask students to fact-check AI's output, assess bias, provide sources

The longer-term approach on assignments

Go back to the first principles

- What are the core student competencies that this assignment is meant to assess and/or develop?

Assume that generative AI is here to stay

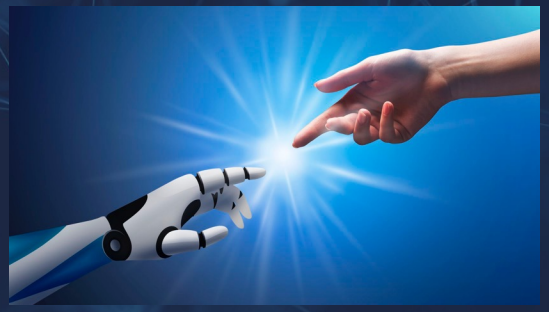
- How can these competencies be assessed/developed in the presence of (or even *with the help of*) generative AI tools?

Rethink the goals and objectives of your teaching

- Are the original competencies still relevant in a world of ubiquitous generative AI tools? Are revised or new competencies becoming important?

Generative AI opportunities for education

- Productivity Boost for Educators
- Productivity Boost for Students
- Individualized Learning
- Data-Driven Insights
- Scaling Education

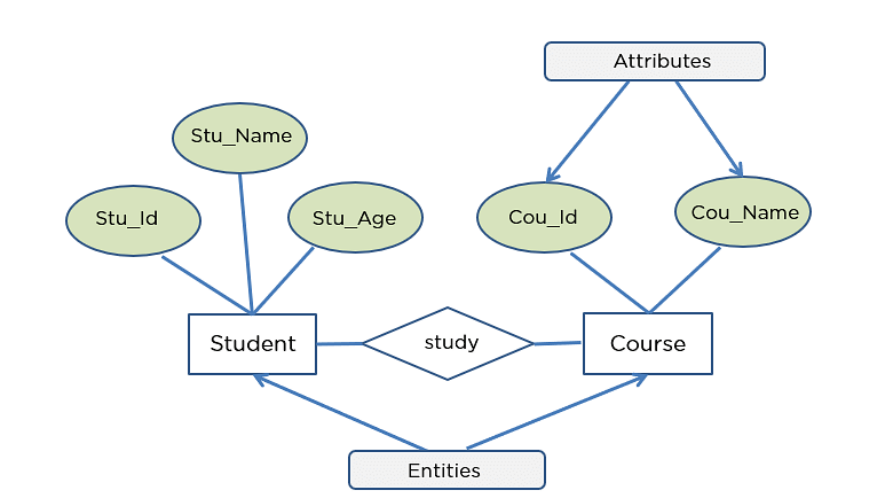


Example: Using ChatGPT to generate a negotiation case study and teaching note

- https://chat.openai.com/share/0744dc66-0574-4f8a-a046-9c4e9ae5560b

Example: Using ChatGPT to solve, grade and produce a new exam

- https://chat.openai.com/share/90326d48-70d4-438c-966c-747459e02371



Example: Using ChatGPT to extend a course syllabus for a longer course

- https://chat.openai.com/share/5a3e5d37-012c-4738-b17c-0b92d995e447

How will generative AI affect the role of the professor?

- Less ‘sage on stage’, more facilitator or coach
- Emphasis on Creativity and Critical Thinking
- New Skill Requirements
- Lifelong Learning
- Adoption of Ethical AI Practices

A generative AI roadmap for educators

NOW

- Update course policies to include considerations for using AI content
- Review assignments to see if quick changes can be made to address AI concerns

AY 2023-24

- Try AI generators and understand their capabilities
- Experiment with integrating AI in Classroom
- Attend trainings, collaborate and share best practices

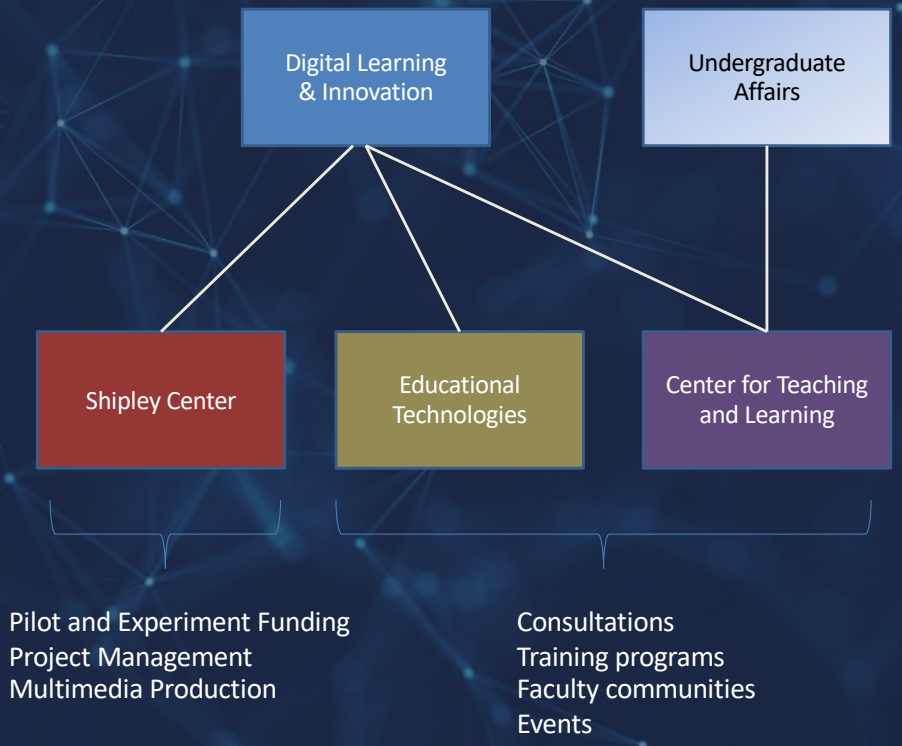
2+ YEARS

- Re-evaluate course goals and content for the new AI+ world
- Continual learning and adaptation

What is Digital Learning & Innovation?

- Part of the Provost Office
- Umbrella organization comprising
  - Shipley Center for Digital Learning & Innovation
  - Educational Technologies
  - Center for Teaching and Learning*
- Experts in pedagogy and the use of technologies in education
- Our joint mission is to support faculty teaching and accelerate educational innovation at BU
- We offer consultations, training, communities, events, grant funding, project management, and multimedia production for courses

*CTL reports jointly to DL&I and Undergraduate Affairs

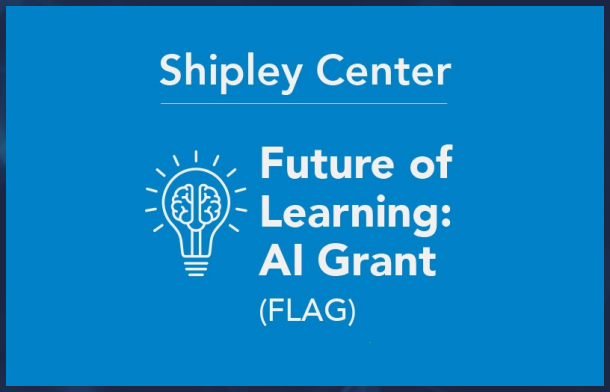


How DL&I and CTL are going to support you

- Teaching with AI guides and resources on our websites
  https://www.bu.edu/ctl/teaching-and-learning-in-an-ai-world
  https://www.bu.edu/dli/ai-strategies/

- Exploring generative AI Fall Info Series
- Self-paced online course and weekly Zoom reflection sessions
- 1-2 in-person symposia during AY2023-24
- FLAG technology grant program from Shipley Center for Digital Learning & Innovation

Detailed announcements and links will be in our September DL&I newsletter (sent out on September 5)



Parting thoughts

- AI will only keep getting better
- The pace of change will accelerate
- Most jobs (including ours) will be transformed
- If managed properly, AI will increase the effectiveness and reduce the cost of education

Our mission is to engage with the technology to help steer it in the right direction, for the benefit of our students and the world

Q and A
ASK AWAY!

Chris Dellarocas

Thank You for attending our Information Session.

Questions or Comments?

dell@bu.edu

www.bu.edu/digital

Fill our post-event survey

https://bit.ly/AIsession1