

ADAPTIVE MOOC LEARNER SUPPORT SYSTEMS

BRINGING PERSONALIZED LEARNING TO SCALE

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PROBLEM

- MOOC learners lack SRL skills
- Massive attrition
- Platform
- Catching up to ITS

Kizilcec, R.F., Perez-Sanagustin, M., Maldonado, J.J.: Recommending Self-Regulated Learning Strategies Does Not Improve Performance in a MOOC. In: L@S '16 (2016)



SOLUTION

- Apply empirically-backed theory from the learning sciences (theoretical)
- Translate traditional classroom approaches into an edX MOOC environment (technical + design)



RETRIEVAL PRACTICE



RETRIEVAL PRACTICE

actively recalling information from memory



RETRIEVAL PRACTICE

actively recalling information from memory

use it or lose it



EFFECTIVE IN THE TRADITIONAL CLASSROOM

actively recalling information from memory

use it or lose it



EFFECTIVE IN THE TRADITIONAL CLASSROOM

HOW DOES THIS TRANSLATE TO MOOCS?



EXPERIMENT #1

- Retrieval prompts after each lecture



EXPERIMENT #1

- Retrieval prompts after each lecture
- Randomized Controlled Trial

Davis, D., Chen, G., van der Zee, T., Hauff, C., Houben, G.J. (2016) Retrieval Practice and Study Planning in MOOCs: Exploring Classroom-Based Self-Regulated Learning Strategies at Scale. In *Proceedings of the 11th European Conference on Technology-Enhanced Learning, EC-TEL '16*. ***Best Student Paper Award**



EXPERIMENT #1

- Retrieval prompts after each lecture
- Randomized Controlled Trial
- High Noncompliance

Davis, D., Chen, G., van der Zee, T., Hauff, C., Houben, G.J. (2016) Retrieval Practice and Study Planning in MOOCs: Exploring Classroom-Based Self-Regulated Learning Strategies at Scale. In *Proceedings of the 11th European Conference on Technology-Enhanced Learning, EC-TEL '16*. ***Best Student Paper Award**



EXPERIMENT #1

- Retrieval prompts after each lecture
- Randomized Controlled Trial
- High Noncompliance
- **No significant effect**

Davis, D., Chen, G., van der Zee, T., Hauff, C., Houben, G.J. (2016) Retrieval Practice and Study Planning in MOOCs: Exploring Classroom-Based Self-Regulated Learning Strategies at Scale. In *Proceedings of the 11th European Conference on Technology-Enhanced Learning, EC-TEL '16*. ***Best Student Paper Award**



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Jam Session

Homework

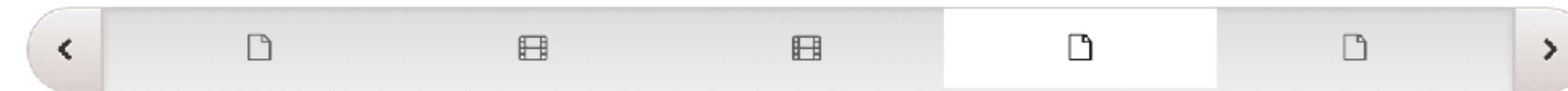
Homework due Nov 19, 2015 at 08:00 UTC

Lab

Lab due Nov 19, 2015 at 08:00 UTC

[4. List Comprehensions](#)[5. Recursive Functions](#)

3. Defining Functions > Lecture > Retrieval

[Bookmark](#)

Please respond in 3-5 sentences to the following question:
"In your opinion, what are the most important points from the previous video?"

>>

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- Randomized Controlled Trial
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EX

***22% OF ACTIVE
LEARNERS CLICKED
ON A RETRIEVAL CUE***

Davis, D., Chen, G., van der Zee, T., Hauff, C., Houben, G.J. (2016) Retrieval Practice and Study Planning in MOOCs: Exploring Classroom-Based Self-Regulated Learning Strategies at Scale. In *Proceedings of the 11th European Conference on Technology-Enhanced Learning, EC-TEL '16*. ***Best Student Paper Award**



EXPERIMENT #2

- Retrieval cues scattered throughout course



EXPERIMENT #2

- Retrieval cues scattered throughout course
- Adapt to progress in course and past quizzes



EXPERIMENT #2

- Retrieval cues scattered throughout course
- Adapt to progress in course and past quizzes
- Immediate feedback, chance for correction



EXPERIMENT #2

- Retrieval cues scattered throughout course
- Adapt to progress in course and past quizzes
- Immediate feedback, chance for correction
- Entire interaction = 1 click



EXPERIMENT #2

- Retrieval cues scattered throughout course
- Adapt to progress in course and past quizzes
- Immediate feedback, chance for correction
- Entire interaction = 1 click
- **Randomized Controlled trial in progress**



EXPERIMENT #2

LIVE DEMO

<https://www.edx.org/>



THANK YOU

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