Toward Flexible MOOCs: Student-Sourcing of Learning Content at Scale

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A mong the most exciting opportunities heralded by massive open online courses (MOOCs) is their ability to leverage the power of big data. MOOCs allow us to log, at a relatively fine-grain level, the data of thousands of learners taking the same course.

Many promises have been made in the media and research literature about how this data might be used to optimize learning. One such promise is data-driven personalized sequencing of learning content—the ability to suggest the most beneficial learning activity for every student at every moment of learning. Traditional sequencing approaches are expensive because they require expert knowledge about learning content and processes. MOOCs, on the other hand, could learn personalized sequencing rules directly from data.

The problem is, modern online learning systems have a very thin layer of content; basically, there's just one path that every learner must take. Fulfilling the data-driven personalization promise, however, will require a large variety of learning content. But where will this content come from?

In "Adaptive Social Learning Based on Crowdsourcing" *(IEEE Trans. Learning Technologies*, vol. 10, no. 2, 2017, pp. 128–139)," Evgeny Karataev and Vladimir Zadorozhny suggest leveraging the strongest component of online learning systems: the learners. The authors unite the ideas of learner-sourcing and personalization by introducing crowdsourcing at the level of self-contained lesslets—mini-lessons created by the learners themselves. Their novel framework supports both the organization of lesslets and the learning of efficient pathways through the lesslet universe from student data.

Karataev and Zadorozhny detail this social learning framework and report the results of its first evaluation, which explored the emergence of "personal pathways" and the performance of content-recommendation algorithms.

T his early attempt to connect learner-sourcing and data-driven personalization marks an important direction for future research. I hope that more such work will follow to break the "content diversity" obstacle of modern learning environments. ⊏

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