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Adaptive Technology & AI in the Classroom

Daphne Stanford · Wednesday, January 11th, 2017

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Adaptive learning technology is slowly making an appearance in classrooms, especially math classes, but are you familiar with best pedagogical practices involved with incorporating adaptive software into the classroom? Also, are you aware that there is potential for artificial intelligence (AI) to become more integrated into common teacher tasks and feedback? There are a number of limits and caveats to this kind of technology, however, so I'll explore those, as well.

In order to effectively incorporate adaptive learning software into your classroom, you must see yourself as integral to the learning process, rather than suddenly kicked out and rendered irrelevant. This is because adaptive software alerts teachers to which students are falling farther behind, so instructors should take that as a cue to pay more attention to those students who are struggling, giving them more feedback and support. In theory, the software is designed to accelerate the students who are on or ahead of schedule, so those students should have plenty to do, relatively speaking, keeping them busy and engaged in the learning process.

In a recent article for [eLearn](#), Guy Boulet concludes that "Gamification may make learning content more engaging, at least for a while, but it doesn't make it more relevant or effective." Regardless of whether video games are actually used, elements from gaming culture could prove motivating, as Lee Sheldon found when he decided to [gamify his classroom](#). I would argue that this is all the more reason why technological supplements to education in the classroom, such as adaptive learning software, need to be coupled with effective classroom instruction and individual goal setting. In this way, the technology may be seen as an important tool in a student's learning process, as opposed to an end-objective or sole motivating component.

According to an article on [Educause](#), adaptive technology frees teachers from the task of lecturing and provides an opportunity for them to roam the room and give extra attention to the students who need it. It also allows for more time for teachers to schedule one-on-one meetings with students to discuss goals and individual progress. In terms of goal setting, the software can act as a record keeper; in the lab, on the other hand, the software acts as a tutor of sorts, prompting students to spend additional time practicing the sets with which they are less successful.

Tara Smith documents the use of [ALEKS](#), an online tutoring and assessment math program, noting how it evaluates individual student data, gathers curriculum for each student's needs, assesses, and repeats. Furthermore, if students are falling behind, they are given material that's more accessible

so that they have time to build confidence and try again. They're also given immediate feedback, which is highly reinforcing. However, [Melissa Koenig](#) warns, "To be successful, faculty interaction is still important."

Beyond K-12 teaching, [higher education teaching methodologies](#) are poised to incorporate more of this kind of technology at an increasing pace, from adaptive learning software to learning management systems to MOOCs. Instructors integrate learning management systems like Blackboard with weekly teaching plans, and the online popularity of MOOCs seems to have predicted the spread of online degree programs such as those offered through Arizona State University. Their Global Freshman Academy partners with [ASU Preparatory Academy](#), a group of Phoenix-based charter schools that offers juniors and seniors the opportunity to take freshman-level courses online, with the eventual option of earning academic credit for their work. Again, with this online study model, advisors are right alongside students—at least virtually speaking.

That last point underscores the continuing importance of teachers and the unlikelihood they will be replaced by artificial intelligence—in the form of bots, say—anytime soon. However, AI can perform tasks that could increasingly help streamline everyday tasks, in the future. [TeachThought](#) recently explored this idea by listing a few ways AI-powered tools might influence the future of education. They included grading, course feedback, student tutoring support, and student performance feedback. AI bots may one day act as teacher aides or classroom assistants.

[TeacherCast](#) seconds the case for AI-powered interactive tutors—which, if you think about it, is already happening via adaptive technology software—by utilizing voice commands to help students with a variety of skills, including teamwork, educational autonomy, and self-evaluation of academic performance. However, [London's Global University](#) warns that although we definitely should take advantage of AI technology in the classroom, we need to ensure that it truly supports teachers, learners, and their parents—as opposed to merely functioning as a hot new commodity on the education market.

In general, educators should look for ways to incorporate new adaptive learning software and AI technology into their classroom as a teaching tool, rather than a replacement for instruction. The more we can learn about and utilize these programs, the more control we'll have over their design and ultimate role in our instructional approach. If we can master the technology, rather than be intimidated by it, we'll find more original ways of integrating it into our lesson plans.

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