Achieving the Dream™

ADAPTIVE COURSEWARE: New Models to Support Student Learning

LESSONS LEARNED FROM ATD NETWORK COLLEGES IN THE EVERY LEARNER EVERYWHERE INITIATIVE

everylearner everywhere

EXECUTIVE SUMMARY

APRIL 2022

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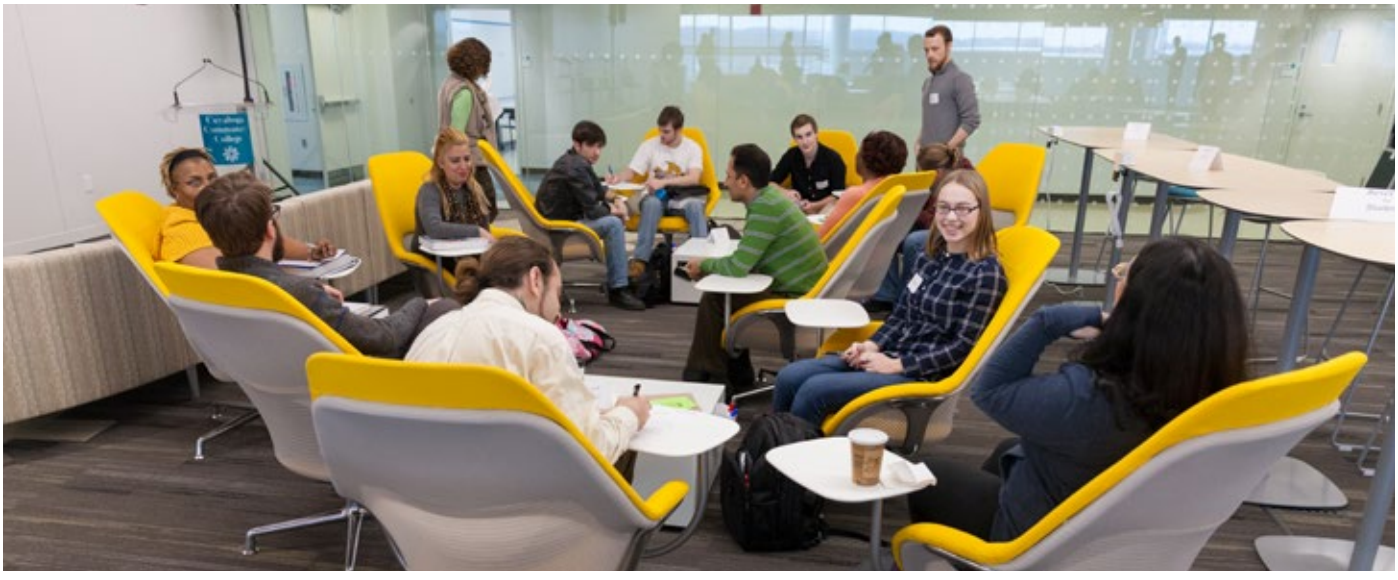
As part of ongoing efforts to improve teaching and learning and increase student success, seven ATD Network institutions — Amarillo College and Houston Community College (HCC) in Texas, Lorain County Community College (LCCC) and Cuyahoga Community College (Tri-C) in Ohio, and Broward College, Miami Dade College (MDC), and Indian River State College (IRSC) in Florida — participated in an Every Learner Everywhere (Every Learner) Network pilot project using advances in digital learning to address high failure rates in foundational courses, particularly among economically marginalized and racially minoritized student populations. Participating faculty and staff at these institutions implemented adaptive courseware — digital learning tools which provide personalized guided practice tailored to each student's progress — in 25 different courses across nine disciplines, serving more than 7,500 students throughout the initiative.

Faculty, staff, and college leaders involved in the pilot cited significant evidence of the learning technology's potential, including greater numbers of students completing targeted gateway courses and higher grades within specific courses. "We have already seen evidence of improved student success rates in some courses that use adaptive platforms, and it appears that these improvements are shared across demographic categories, including low-income students and students of color," says Tri-C President Dr. Alex Johnson. Students gave credit to the courseware for giving them the opportunity to engage with course material at their own pace while also giving them feedback on their progress in the adaptive assignments. Even though some students found the repetitive nature of adaptive work frustrating, many others acknowledged it helped them master key concepts.



The experiences of faculty, staff, and students at participating institutions indicate that adaptive courseware:

- **Encouraged student self-efficacy** by promoting progressive skill building through guided practice
- **Helped faculty members identify students who needed support and intervene appropriately** by using courseware data analytics to identify specific students and/or topics that large numbers of students found difficult
- **Supported flipped classroom models** in which students were introduced to key concepts before coming to class for further discussion or support, ensuring they were more engaged and prepared for classroom work
- **Addressed discipline-specific needs,** including reinforcing prerequisite skills in mathematics, walking students through multiple-step procedures in science courses, presenting complex and nuanced concepts in smaller, actionable chunks in social sciences and business, and building discrete skills in areas such as grammar and structure in English courses
- **Reduced course costs for students,** supporting ongoing institutional efforts to keep textbook and material costs low

Lessons Learned from Participating Institutions

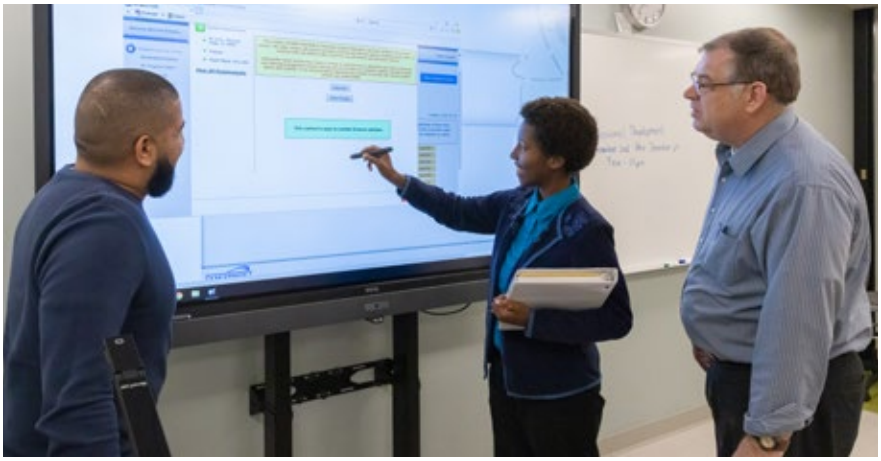
The Every Learner initiative also surfaced key strategies across participating institutions that can guide the implementation of adaptive courseware and other digital learning strategies to support student learning and success in several fundamental areas of implementation and ongoing use, including:

Institutional Approaches to Digital Learning Implementation

- **Recognizing the importance of faculty-led efforts.** Administrators intentionally sought out willing faculty members, engaged them in leading pilots, and built structures that allowed for intentional collaboration and peer support.
- **Considering how implementation fits in with other institutional initiatives.** Institutions sought to integrate the adaptive courseware pilot initiative with ongoing course redesign efforts, particularly in high-impact gateway courses. They also intentionally found connections between the Every Learner initiative and ongoing work with other digital learning initiatives focused on reducing costs and supporting student success, including Open Educational Resources (OER) or Z-degree programs. At the same time, participating institutions relied on faculty judgment to determine whether adaptive pilots would support or hamper ongoing redesign efforts and initiatives.
- **Responding to institutional capacity limitations.** In the face of opportunities to significantly accelerate digital teaching and learning capacity and adoption, institutions recognized internal limitations, conflicting redesign efforts, and initiative fatigue.

Targeting Appropriate Courses for Implementation

- **Identifying high-impact courses.** Participating institutions intentionally focused adaptive efforts on gateway courses and courses with the largest enrollment numbers of students, particularly where efforts had been made to restructure or eliminate developmental education.



- **Focusing on courses undergoing redesign efforts.** Adaptive courseware integration was most effective when implementation was part of broader redesign efforts, including gateway courses, efforts to flip classroom instruction, and new corequisite models.
- **Encouraging intentional integration into course activities.** Across participating institutions, faculty recognized clear differences in how students used and perceived courseware when adaptive courseware was fully and intentionally integrated into their classes instead of being used as a supplemental resource.

Selecting Adaptive Products

- **Supporting broader learning objectives for each course.** Faculty selected adaptive materials aligned with existing learning objectives and textbooks or that included the functionality to modify objectives or sequencing to meet course needs.
- **Assessing the ability to evaluate and adapt adaptive work to ensure it meets learning objectives and student needs.** Participating faculty reviewed questions to ensure they were appropriate for each course and reflected students' ability, as well as mapped assignments to specific course activities or sections.
- **Ensuring integration with college platforms.** Faculty found that integration between adaptive platforms and existing learning management systems (LMS) was easier for students and facilitated data exchange for purposes such as grading.
- **Collecting student feedback on usability.** Participating institutions and faculty sought to understand whether students found the material more engaging than traditional textbooks and whether faculty needed to adapt the difficulty and length of adaptive assignments to prevent students from unnecessarily repeating work without progressing.
- **Prioritizing cost and access.** Participating institutions used adaptive courseware as replacements for more costly textbooks or as part of OER, Z-course, and first-day textbook initiatives in which course materials are automatically made available to all students.

Supporting Faculty-Led Implementation

- **Empowering faculty champions.** Institutional leaders identified specific faculty members willing to be early adopters and to lead implementation efforts in their disciplines, as well as issued open calls for faculty interested in piloting the digital courseware.
- **Creating and supporting faculty learning communities or cohorts.** Doing so provided an intentional structure for faculty to collaborate on the selection and implementation of evidence-based teaching and learning practices that aligned with the adaptive courseware.
- **Providing support through cross-functional teams.** Leveraging Centers for Teaching and Learning and other existing professional learning structures provided faculty with learning technology and pedagogical expertise to support course redesign and implementation.
- **Recognizing and supporting the impact on faculty workload.** Some institutions offered release time and other supports to reflect the extra time involved in both initial implementation efforts as well as ongoing use of adaptive courseware to monitor student progress and give feedback.
- **Supporting adjunct faculty members.** Adaptive courseware provided valuable support for adjunct faculty members through the creation of common master course shells. However, it is vital to ensure they receive the same training and support as their full-time peers.
- **Allowing faculty to lead scaling efforts.** While some institutions intentionally sought out adaptive courseware to support greater consistency across sections and campuses, faculty members ultimately made decisions about the best opportunities to expand the technology's use.

Identifying What Worked Well and Ongoing Challenges

- **Onboarding students.** Students and faculty members alike reinforced the importance of designing intentional efforts to introduce students to digital courseware — how to access and use it as well as its purpose — so students understand the differences from other, more familiar assignments.
- **Ensuring pacing and workload meet student needs.** Faculty stressed the importance of monitoring the time students of differing skill levels spend in adaptive courseware to make sure it remains constructive practice and not an excessive time burden or impeding progress.
- **Supporting students outside of the courseware.** Faculty at some participating institutions used the product during class time and offered additional supports such as aligned tutoring or lab courses.
- **Addressing language issues, particularly for multilingual learners.** Faculty stressed the importance of doing so in courses where academic language requires an additional layer of support.
- **Monitoring student usage and feedback to address unintended consequences.** Some faculty observed that students chose less challenging work, while others stressed the need to pace assignments and address how courseware is used across paired corequisite courses.
- **Determining whether adaptive courseware is appropriate for all students.** Some faculty questioned whether adaptive courseware was the best support for every student in gateway and high-enrollment courses, particularly those with large numbers of learners who are uncomfortable with technology.

Guiding Principles for the Use of Digital Learning Tools

The seven participating institutions' experiences with adaptive courseware implementation reinforce key lessons learned by ATD Network colleges about broader institutional changes in teaching and learning. These experiences highlight guiding principles which college leaders and faculty must follow to ensure that any new learning technologies support a student-focused culture that promotes student success, including:

- **Ensuring equity** not only through connectivity and access to digital learning tools, but also by taking steps to keep lower-performing students from spending disproportionate amounts of time in adaptive assignments without targeted scaffolded supports.
- **Supporting faculty action research into evidence-based instructional practices** by connecting technology efforts with broader institutional efforts to revamp course design and pedagogy.
- **Creating collaborative, cross-functional teams to support students,** including supports from instructional designers and technologists, tutors, and other student services that provide a coordinated network of support for teaching and learning-based student success initiatives.
- **Encouraging building a culture of teaching and learning evidence** by framing digital learning implementation within existing structures such as Centers for Teaching and Learning and learning communities that provide opportunities for faculty and staff to examine their practice, test new evidence-based approaches, and support each other as learners as they explore new strategies to advance student success.

For more information about the Every Learner pilot and to read case studies of each participating institution and the key disciplines in which adaptive courseware was tested, visit ATD's Every Learner Everywhere resource page.

DATA SNAPSHOT

The following table shows the disciplines that each participating community college focused on as well as the number of students enrolled in those courses and the number of faculty who taught sections with the adaptive courseware. This data covers the Fall 2019 and Spring 2020 terms with the exception of English at Indian River State College, which was piloted in Summer 2020. For more detailed course-level information as well as information on courseware that was piloted, see Appendix A in the full report.

INSTITUTION	DISCIPLINES	STUDENTS	FACULTY
Amarillo College Amarillo, TX Enrollment: 9,739	Chemistry English Math	2,369	50
Broward College Fort Lauderdale, FL Enrollment: 38,976	English Math	199	5
Cuyahoga Community College Cleveland, OH Enrollment: 23,655	Business Biology Chemistry Economics Math Physics Psychology	2,288	44
Houston Community College Houston, TX Enrollment: 56,151	Math Economics	519	8
Indian River State College Fort Pierce, FL Enrollment: 16,686	English Math Biology Chemistry	535	15
Lorain County Community College Elyria, OH Enrollment: 10,206	Business Math	555	7
Miami Dade College Miami, FL Enrollment: 51,679	Math	1,085	23
Totals:		**7,550**	**152**

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