UNDERSTANDING ADAPTIVE COURSEWARE

Adaptive courseware offers the potential for personalized learning at scale. Understanding the range of adaptive products available and the different degrees of customization are good first steps.

TIME FOR CLASS TOOLKIT

QUESTIONS ADDRESSED

How can adaptive courseware be used to benefit students?

To what extent is adaptive courseware being used today?

How important is adaptivity relative to other courseware features?

What factors should be considered when selecting an adaptive courseware product?

KEY INSIGHTS

Adaptive courseware has the potential to provide students with personalized learning experiences that increase student mastery of content and improve learning outcomes.

Faculty are primarily using adaptive courseware products, with an even split between platform-led and content-led products.

Although the majority of faculty do not seek adaptivity as a top feature during the product selection process, those who use adaptive courseware products are more likely to recommend them than those who use non-adaptive products.

Not all products adapt in the same way, so clearly setting goals for adaptive courseware adoption is critical. The *Courseware in Context* (CWiC) Framework can be used to assess courseware along different dimensions of adaptivity.

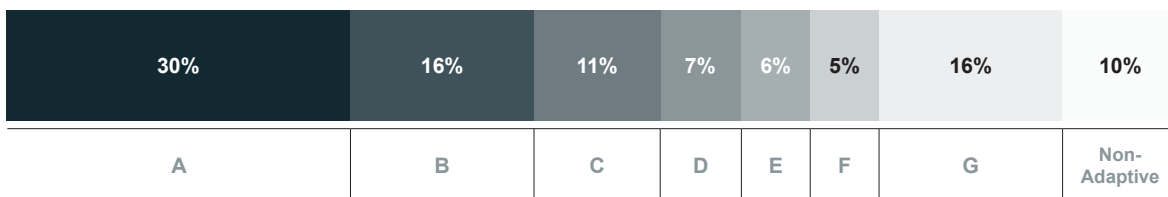Authored by   Tyton PARTNERS   &   BABSON Survey Research Group

Adaptive courseware can provide students with personalized learning experiences that increase mastery of content and improve student learning.

Adaptive courseware combines purpose-built software, content, and assessments. Adaptive courseware dynamically adjusts based on student interaction and performance levels, delivering content in an appropriate sequence for individual learners at specific points in time. With the right implementation, it can help provide personalized learning experiences for all students,[1] delivering new learning material to students who have achieved mastery and remediation to those who have not.[2] For more information about the potential benefits of courseware, refer to the *Making the Case for Courseware* brief in this series.

The majority of courseware being adopted today in highest-enrollment classes is adaptive.

Nearly thirty percent of faculty today are courseware users. Ninety percent of those report that the courseware they use in their highest-enrollment courses is adaptive (Figure 1). However, the extent to which faculty are using the full range of adaptive features and functionality within these products varies.

Figure 1: Faculty Courseware Product in Use in Courses with Highest Enrollment[3]

30%	16%	11%	7%	6%	5%	16%	10%
A	B	C	D	E	F	G	Non-Adaptive

A = Pearson MyLab
B = McGraw-Hill Connect
C = Cengage Mindtap
D = Wily PLUS

E = Cengage Learning Objects
F = Macmillan LaunchPad
G = Adaptive Other
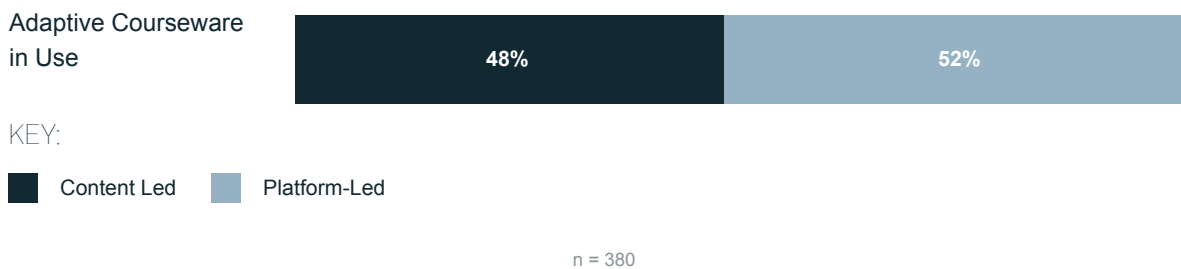
n =541

Adaptive courseware adoption is split across platform-led and content-led products.

Some adaptive courseware products are content-led, offering either prepackaged courses or libraries of individual videos and assessments to give faculty a head start and ease implementation. Others are platform-led, dedicating resources towards advanced functionality and increased opportunities for customization. Given the customization that needs to occur, the time needed to build and implement courses using platform-led products is generally longer. Platform-led courseware vendors therefore typically offer more customer support and service options. Overall, faculty report use that is evenly distributed between platform-led and content-led products (Figure 2).

Figure 2: Content-Led vs. Platform-Led Adaptive Courseware Product Use[4]

Adaptive Courseware in Use

48%	52%

KEY:

■ Content Led   ■ Platform-Led

n = 380

Faculty teaching in quantitative academic disciplines use adaptive courseware at higher rates than those in other disciplines.
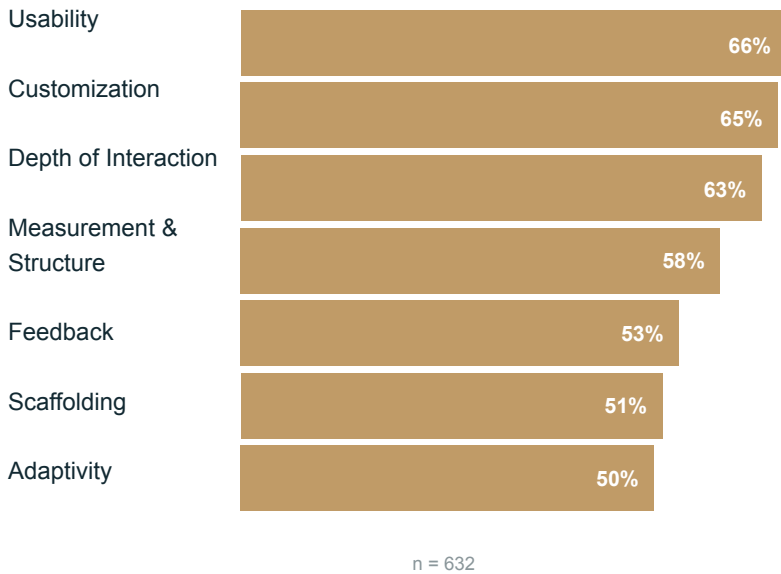
Whereas 91% of faculty teaching quantitative disciplines like mathematics and physical sciences report using adaptive courseware products, 79% of faculty teaching in the humanities report using adaptive courseware products.[5]

[4] Question: "From the following list, please select the product you are using in this highest-enrollment course." [5]Question: "What is your primary [academic] discipline?"
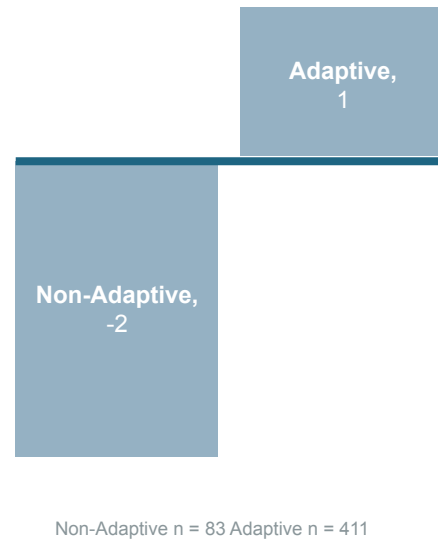
Although the majority of faculty do not seek adaptivity as a top feature during the product selection process, faculty who use adaptive courseware products are more likely to recommend them than faculty who use non-adaptive products.

As of 2019, usability (features of software and user-centered design that support sustained engagement), customization (the ability for educators or course designers to alter learning or assessment content), and depth of interaction (the presence of variety and higher-order learning skills in instruction) are faculty members' most desired courseware features (Figure 3). However, once adopted, adaptive courseware does receive a slightly higher Net Promoter Score (NPS)[6] from faculty (Figure 4).

Figure 3: Top ranked capabilities when selecting courseware[7]

Figure 4: Courseware NPS[8]

Usability — 66%
Customization — 65%
Depth of Interaction — 63%
Measurement & Structure — 58%
Feedback — 53%
Scaffolding — 51%
Adaptivity — 50%

n = 632

Adaptive, 1

Non-Adaptive, -2

Non-Adaptive n = 83   Adaptive n = 411

Faculty who are experts in their respective disciplines are not necessarily experts in digital learning tools and techniques. As shared by one Vice President of Online Learning from a 4-year institution, "Faculty come to us not necessarily looking for adaptive products at first, but they later come to appreciate the functionality."

[6] Question: "How likely are you to recommend [this courseware product] to a colleague?" % Promoters (scores of 9–10) – % Detractors (scores of 1–6). Net Promoter Score = Promoters – Detractors. The sample size for the non-adaptive product category here is small. Care should be taken to not overestimate the effect of adaptivity alone on the faculty experience. [7] Question: "Please indicate which of the following capabilities are important to you in selecting courseware. Please select all that apply." [8] Question: "How likely are you to recommend [this courseware product] to a colleague?" % Promoters (scores of 9–10) – % Detractors (scores of 1–6)

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Not all products adapt in the same way; courseware should be assessed along different dimensions of adaptivity that vary in importance depending on instructional goals.

EdSurge's *Higher Ed Courseware Product Index*,[9] inspired by the Courseware in Context (CWiC) Product Taxonomy,[10] is designed to inform faculty and administrators as they evaluate and select courseware products.

The following types of adaptivity, which differ in complexity, are highlighted:

1. Adapts the **complexity or presentation of content** based on a pretest
2. Adapts the **goals or standards** for learner completion based on more inputs than a single correct response to the previous item or activity
3. Adapts the presentation of content based on **learner-declared goals**
4. Adapts the **scope of instruction** (breadth and depth of content) based on more inputs than a single correct response to the previous item or activity

In thinking about what type of adaptivity will be best for your institution, department, or course, consider your students' needs and your own instructional goals.

[9] https://www.edsurge.com/product-reviews/higher-ed/courseware?search [10] https://coursewareincontext.org
[11] A Guide for Implementing Adaptive Courseware: From Planning Through Scaling, Association of Public and Land-grant Universities (APLU) and Every Learner Everywhere, October 2018. https://www.aplu.org/library/a-guide-for-implementing-adaptive-courseware-from-planning-through-scaling/file

TOOL FOR ACTION

Courseware in Context (CWiC) Framework (www.coursewareincontext.org)

The implementation of adaptive courseware holds promise, but also needs to be thoughtfully planned for and implemented based on learning goals and faculty and staff capacity.

√ Think about whether a content- or platform-led product makes the most sense for your needs. While platform-led tools enable significant customization, they also require significantly more up-front work.

√ Even the most advanced technical resources are more effective when partnered with best-practice pedagogy; consider investing not just in tools but in training on teaching and learning strategies.

√ To navigate the adaptive implementation process from initial plan through scaling initiatives, leverage APLU's established techniques in their *Guide for Implementing Adaptive Courseware*.[11]

Use Case	Suggested User	Product Primer	CWIC Framework Component				Access
		Product Primer	Product Taxonomy	Research Collection	Course-Level Quality Indicators	Program-Level Quality Indicators	
Explore courseware products	Educators, instructional designers, and administrators	X					Coursewareincontext.org, LearnPlatform
Select and evaluate a courseware product	Instructional designers and tech-savvy instructors		X	X			Coursewareincontext.org, LearnPlatform, EdSurge Product Index
Better understand the learning science behind courseware	Educators, instructional designers, and administrators			X			Coursewareincontext.org
Perform a course or program review	Administrators		X	X	X	X	Coursewareincontext.org, LearnPlatform

ADDITIONAL RESOURCES

For more information, visit Every Learner Everywhere Resources or the Tyton Partners Library.

ABOUT

Time for Class is a comprehensive longitudinal survey of 4,000+ higher education faculty and administrators, fielded since 2014 by Tyton Partners and the Babson Survey Research Group and underwritten by the Bill & Melinda Gates Foundation. Results inform a comprehensive fact base focused particularly on the postsecondary digital courseware landscape, in the service of making this diverse and complex market easier to navigate for institutions and education professionals.

Tyton Partners is the leading provider of investment banking and strategy consulting services to the education sector and leverages its deep transactional and advisory experience to support a range of clients, including companies, foundations, institutions, and investors.
For more information, visit www.tytonpartners.com.

The Babson Survey Research Group is a survey design, implementation, and analysis organization. Founded in 2005, the organization has worked on a number of large surveys including an annual survey of online education that includes all colleges and universities in the United States.
For more information, visit www.onlinelearningsurvey.com.

Every Learner Everywhere is a network of 12 partner organizations focused on providing a comprehensive, coordinated approach to help colleges and universities take advantage of the rapidly evolving digital learning landscape.
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