USM SUMMIT: ADAPTIVE TOOLS FOR HIGH-ENROLLMENT ONLINE COURSES: IMPROVING THE COVID-19 LEARNING EXPERIENCE FOR STUDENTS AND FACULTY

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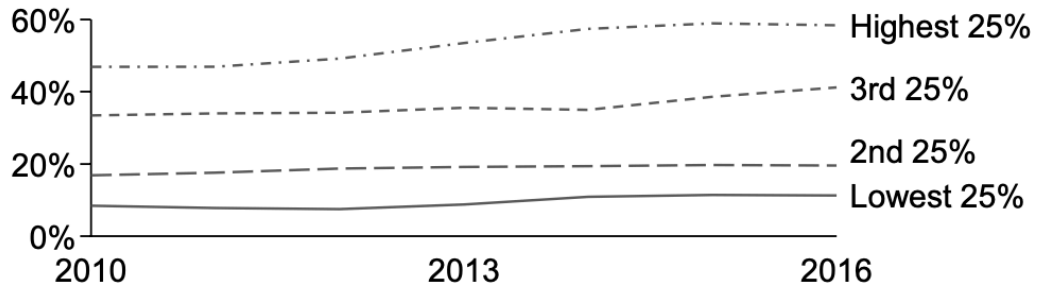
ASSOCIATION OF PUBLIC & LAND-GRANT UNIVERSITIES

Persistent equity gaps for low-income students and students of color are exacerbated by gateway courses acting as filters, not pumps

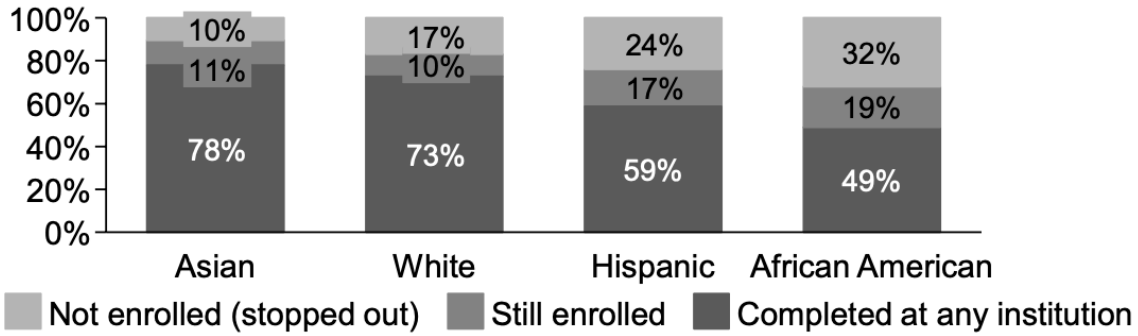
/ DRAFT

Equity gaps in degree completion

BA degree attainment by 24, by family income bracket

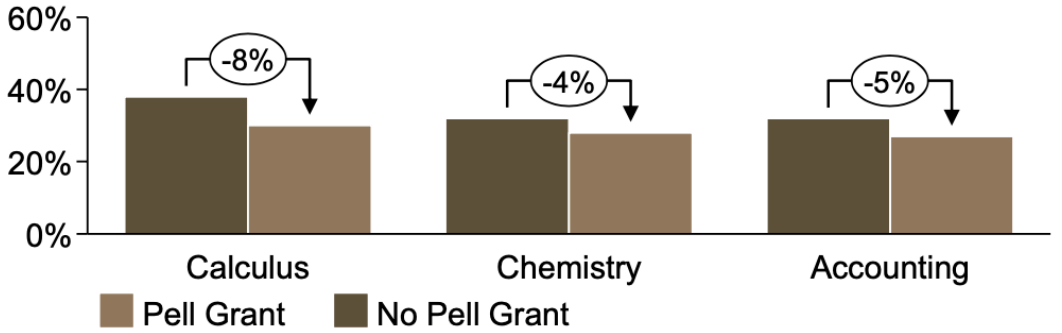


4-year public BA completion rates, by race / ethnicity*

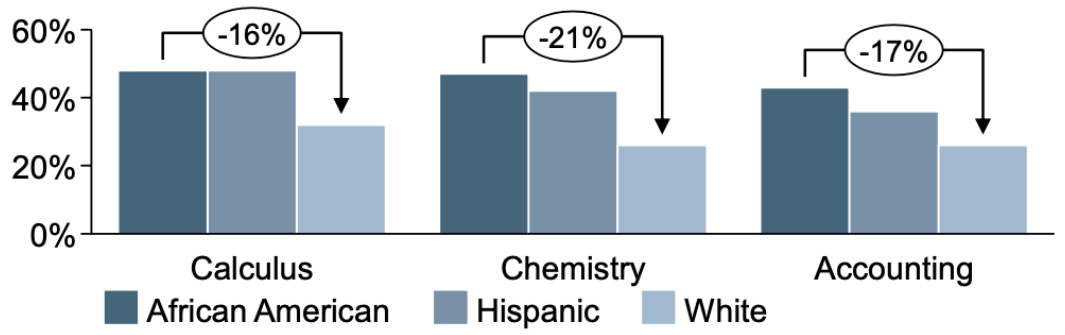


Gateways courses as filters

First-year gateway course DFWI rates, by Pell Grant status



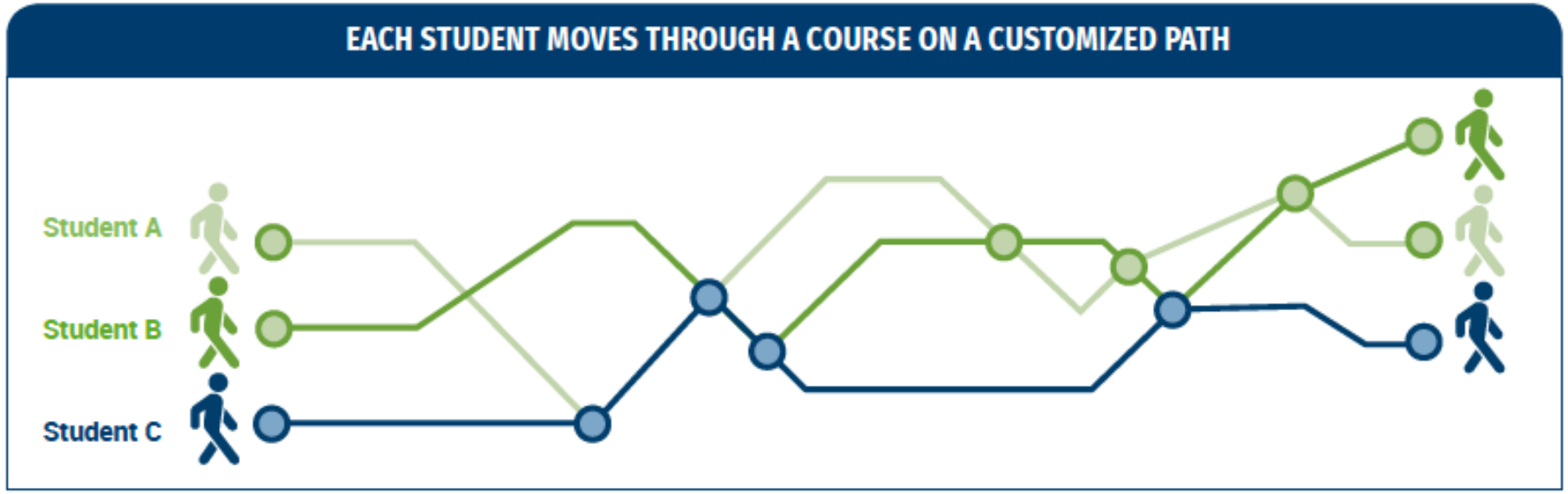
First-year gateway course DFWI rates, by race/ ethnicity**



*Notes: *Shows percent completed, stopped out, and still enrolled six years after enrolling (2013 student cohort), ** DFWI (Drop, Fail, Withdraw, Incomplete) rates completed from a mix of 36 different types of post-secondary institutions (2018 data)*
Sources: National Student Clearinghouse Research Center, Pell Institute, Gardner Institute, Tyton Partners analysis

What is adaptive courseware?

- A digital teaching tool with instruction and assessments **scoped and sequenced to support an entire course**
- Provides **personalized and nonlinear instruction** by analyzing students' responses and pointing them to activities based on their needs
- **Provides instructors with data about each student's progress and learning** so they can modify instruction in response



Association of Public & Land-grant Universities

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Adaptive courseware: Benefits for Instructors

- Automated assessments and analytics give instructors real-time data on students' progress and areas of need
- Instructors can see how students are interacting with the course material (time spent on activities, study habits)
- Frees up instructors to spend more class time on interactive activities that build on student engagement with content outside of class

What does it take for Faculty to add these tools?

Increase course prep work includes:

Selection or Customized tools choice

Integration into course or redesign of course

Modify assessments to include practice from adaptive tools

Redesigned course approach includes:

Constant review of student progress in system

More feedback for those students underperforming

Incorporating tool practice into other course activities

Acceleration Adoption of Adaptive Courseware Grant (APLU)

- Grant goals:
  - To cumulatively have adaptive courses in at least 15% of general education credits
  - To scale adaptive courses across all sections of a course
  - Improve student success
- Scaling impact to date: 63% above target

204 adaptive courses

representing

25 course disciplines

utilizing

15 courseware vendors

University	Change in Pass Rates	Total Adaptive Enrollment	Change (Increase/ Decrease in Enrollments	3 Credit Cost (in-state)	Student Tuition Savings based on Change in pass rates
A	6.78%	29887	2027	$ 1,134	$ 2,298,401
B	10.59%	18107	1918	$ 1,206	$ 2,312,159
C	2.00%	31285	466	$ 929	$ 433,043
D	4.60%	52801	2429	$ 1,487	$ 3,611,694
E	5.60%	22560	1263	$ 781	$ 986,684
F	-0.58%	6004	-35	$ 538	$ (18,676)
G	2.47%	26655	658	$ 1,491	$ 981,642
H	3.52%	46825	1648	$ 1,102	$ 1,816,773
Totals		234124	10535		**$12,569,703**

Student Tuition Savings

Indicators of Success

Cumulative Data: Millions saved by students not repeating courses

Year over year course pass rates improved faster in course sections that included adaptive

Of 66 courses that were scaled over at least three years, 81% report higher ABC rate

- One institution self-reported equity gaps closed
- Additional institutions self-reporting equity gaps narrowing

Success within disciplines:

- Three universities reported a double digit increase in pass rates in College Math/Algebra
- Biology, business, math, and modern languages showed consistent increases in pass rates

IT TAKES TIME…almost no course achieved improved student success in one year!

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Goal was to promote effective implementation of adaptive courseware in order to:

- Increase success rates in gateway courses in 2- and 4-year colleges and universities
- Reduce achievement gaps for low-income students, students of color, and first-generation college goers

Continuous improvement research component was integrated into technical assistance.

First Term Activity (Fall 2019)

Metric	Number
Institutions	9
Courses	32
Disciplines	7
Instructors	81
Students	5,000+

DFWI Rates for Courses Undergoing Redesign Supported by Every Learner Everywhere

	All Students	Under-represented Minority Students
Comparison Course Sections without Adaptive Learning (usually Fall 2018)	**35%** (n=6,622)	**44%** (n=3,514)
Adaptive Course Sections Fall 2019	**32%** (n=5,037)	**40%** (n=2,280)

Note: These are averages of course DFWI rates, not adjusted for differences in prior achievement or other student characteristics.

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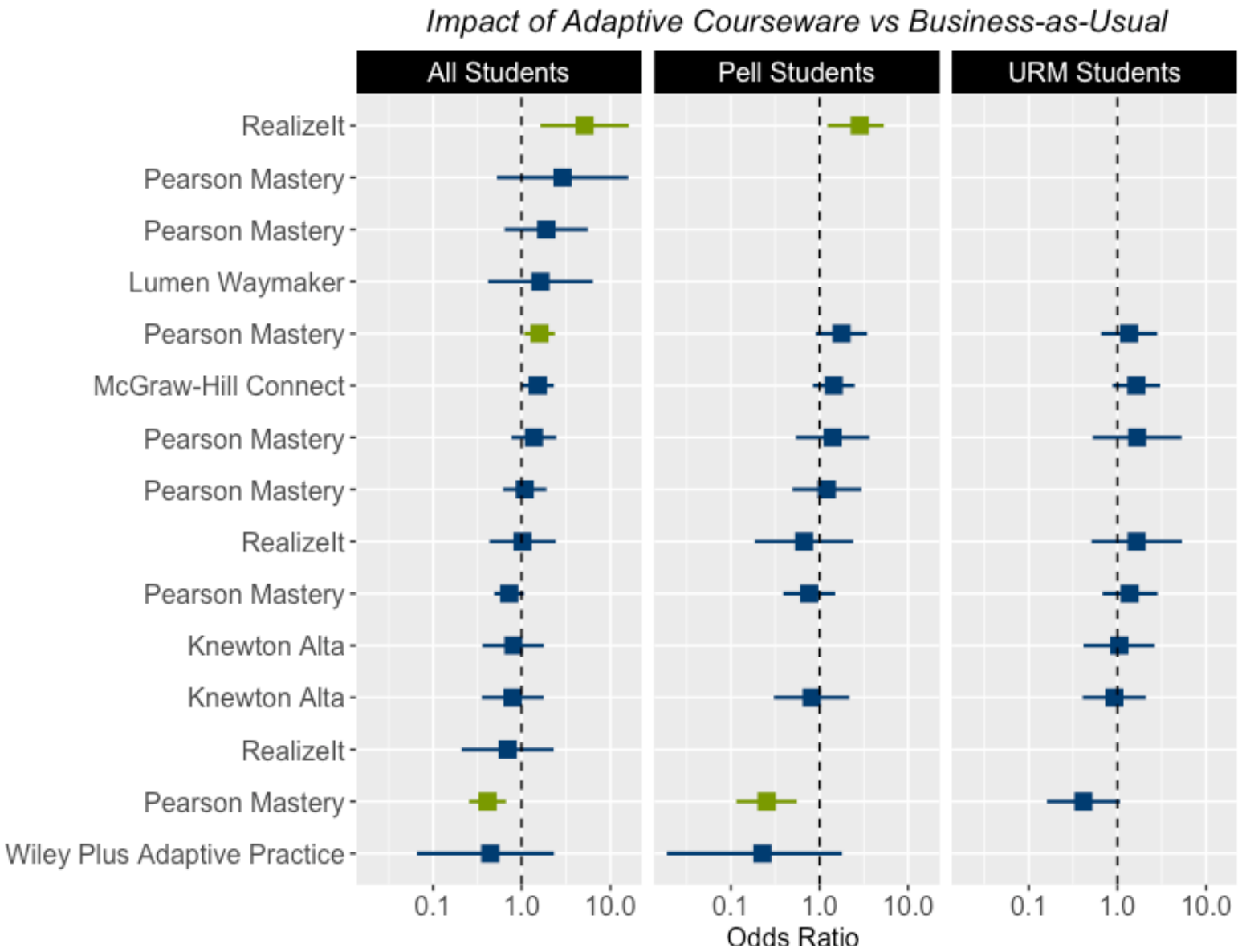
Model-adjusted Estimates of Impact on DFWI Rates



Note: For courses with adequate samples, Digital Promise computed odds ratios corrected for pre-existing differences between conditions.

Significant difference between conditions

- Not Significant
- Significant

Odds Ratio greater than 1.0 indicates lower DFWI rate in Adaptive condition.

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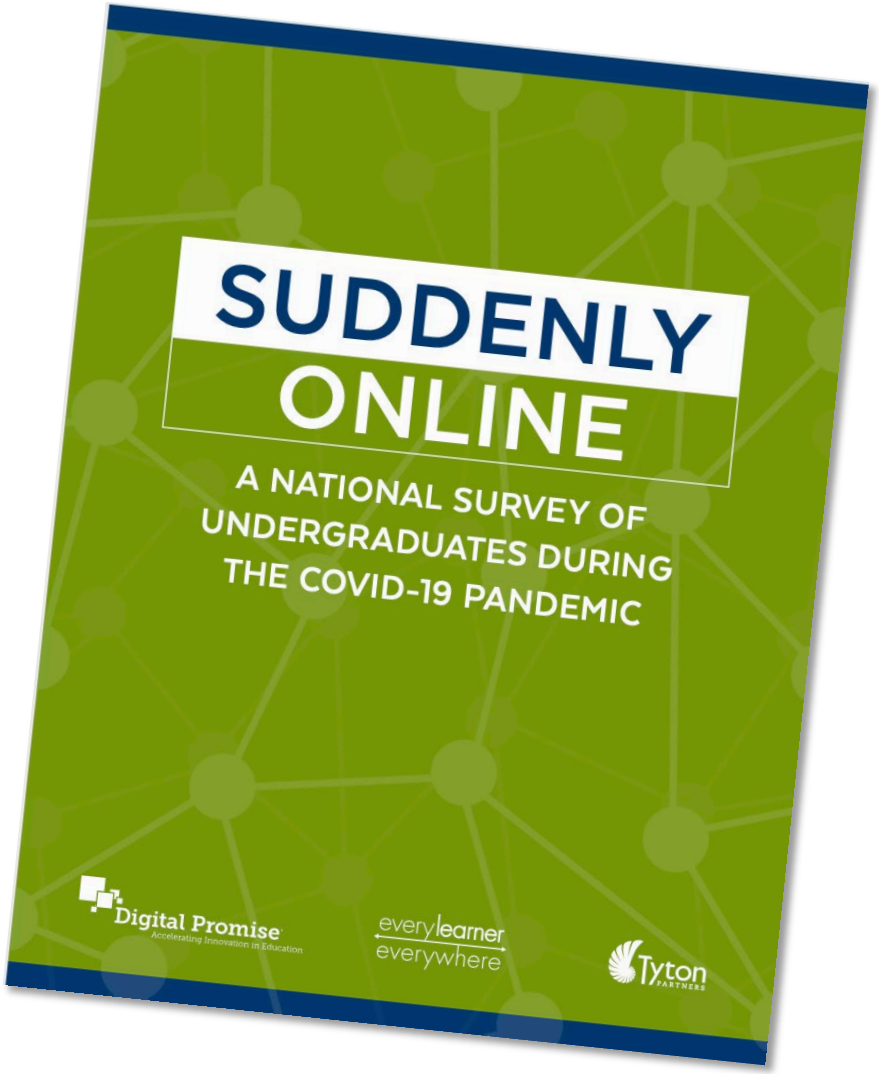
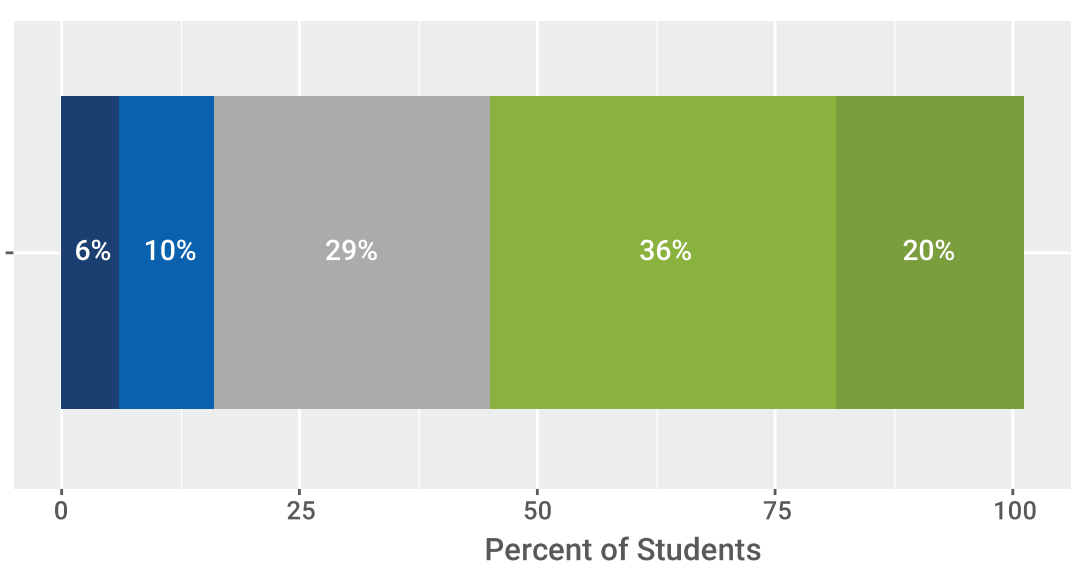
Digital Promise National Student Survey



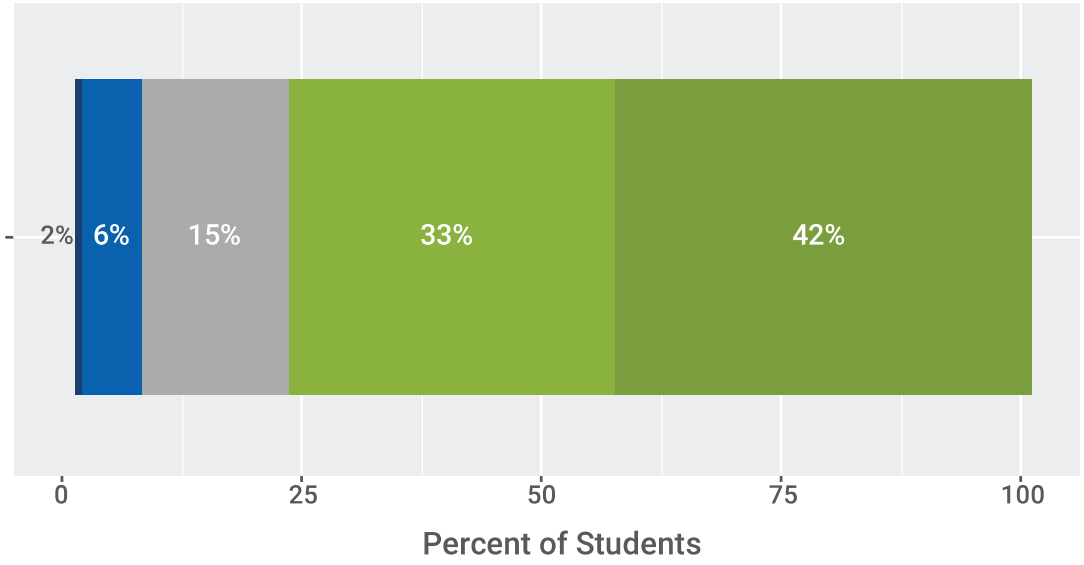
https://www.everylearnereverywhere.org/resources

Frequency of Serious Technology Issues

Internet Connectivity Issues



Hardware or Software Issues

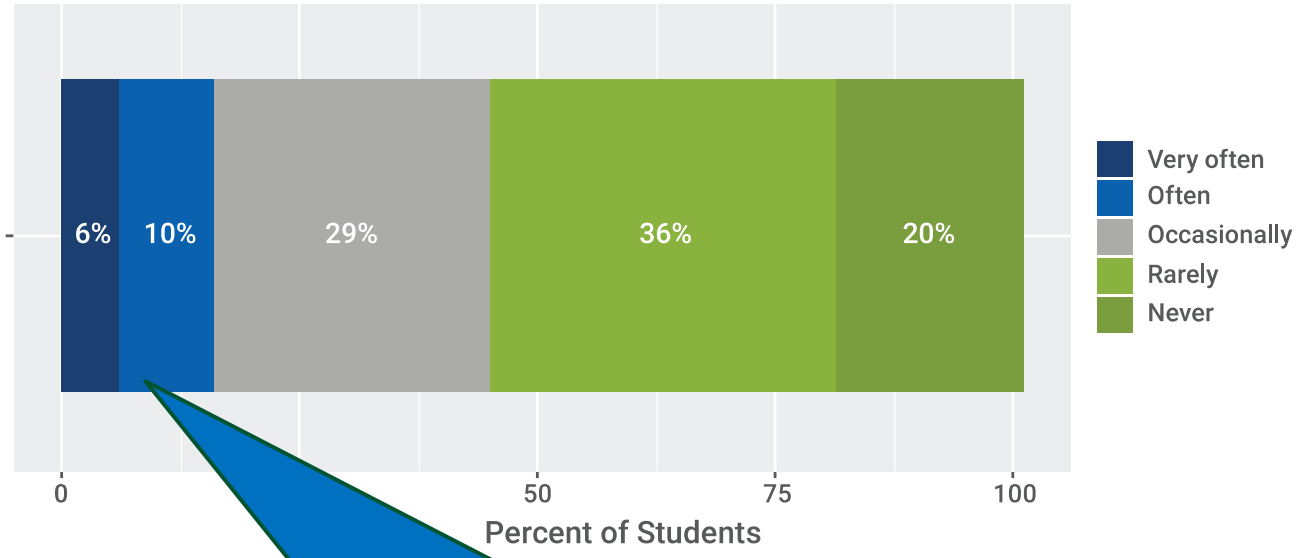


Survey Items: “In accessing this course after it moved online, how often, if at all, did you experience serious internet connectivity problems that interfered with your ability to attend or participate?”

“In accessing this course after it moved online, how often, if at all, did you experience serious hardware or software problems that interfered with your ability to attend or participate?”

Frequency of Serious Technology Issues

Internet Connectivity Issues



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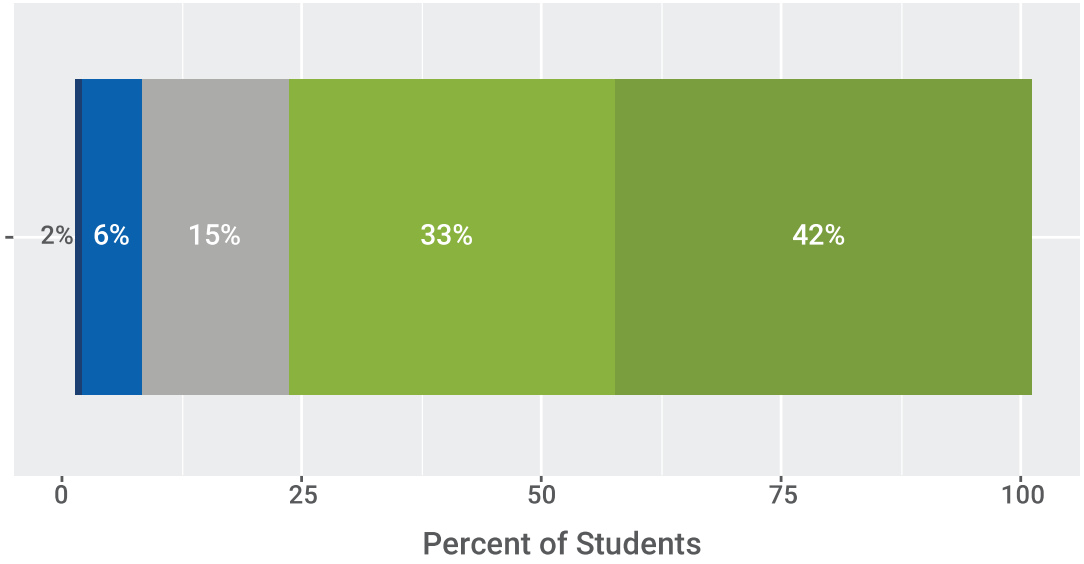
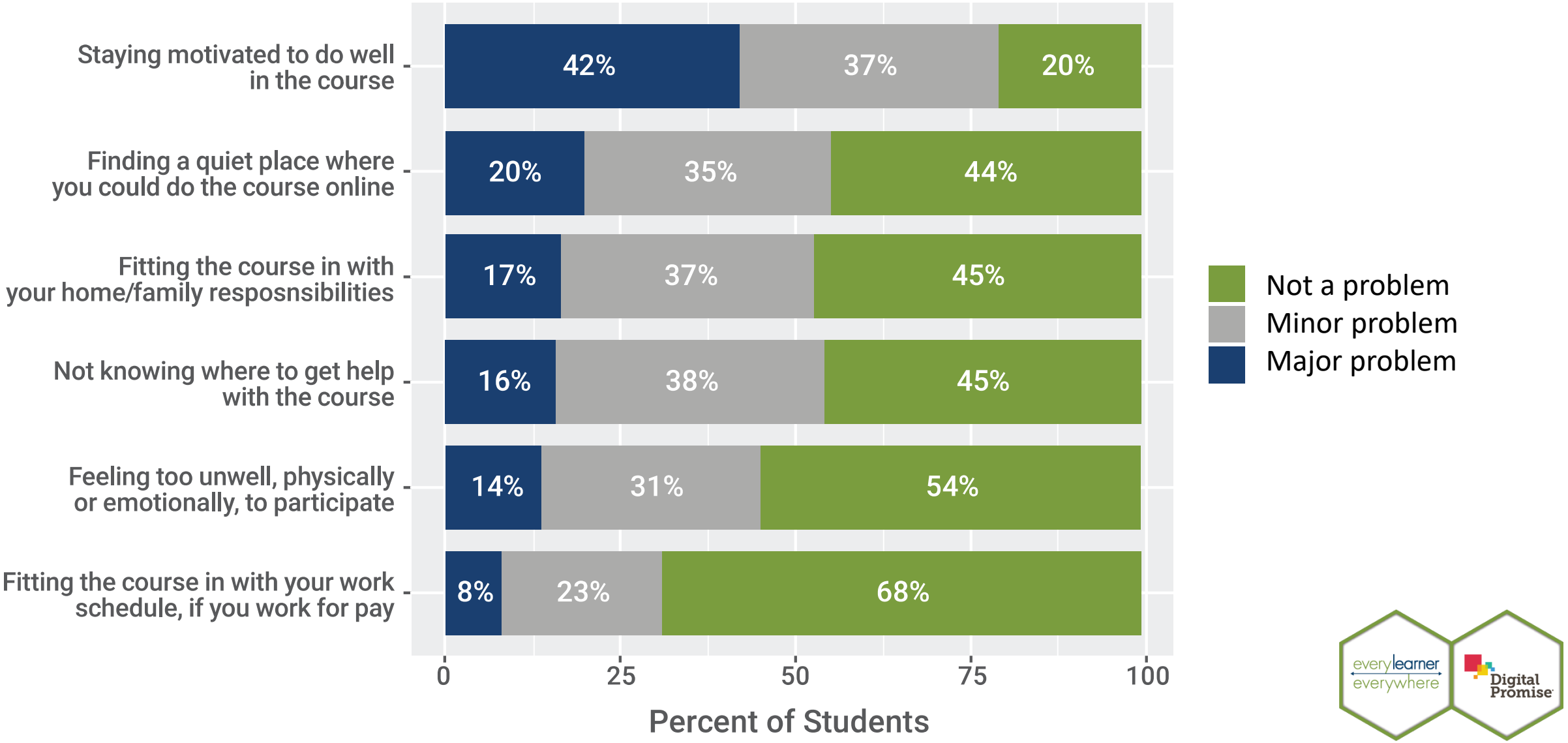


Internet connectivity issues were experienced Often or Very Often by a larger proportion of Hispanic students (23%) than of non-Hispanic White students (12%).

Severity of Non-Tech Challenges Post-COVID



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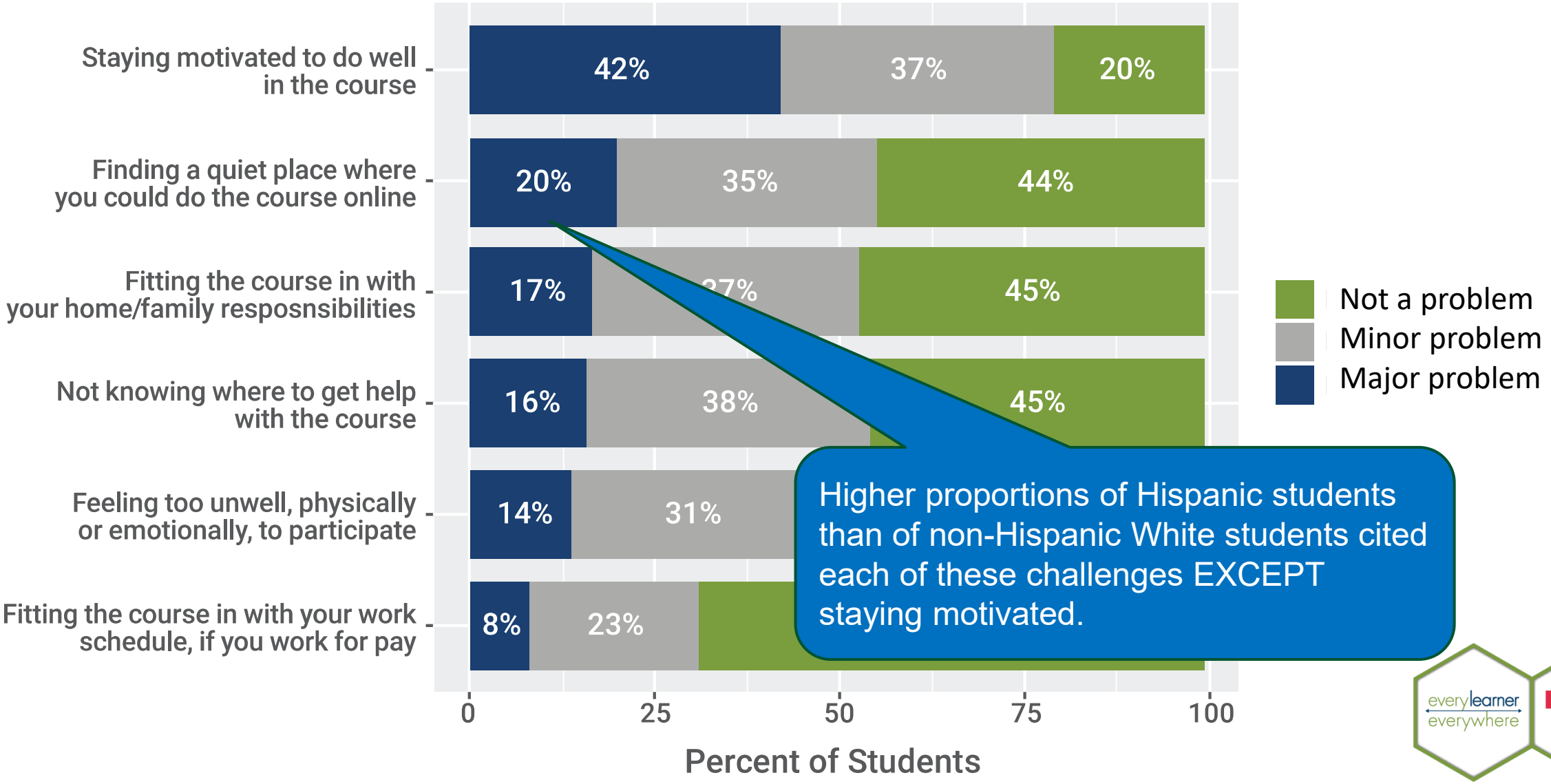

Online Instruction Practices

Interaction

Live sessions in which students can ask questions and participate in discussions

“Breakout groups” during a live class

Personal messages to individual students about how they are doing in the course or to make sure they can access course materials

Content & Activities

Breaking up class activities into shorter pieces than in an in-person course

Using examples from the real world to illustrate course content

Assignments to work on group projects separately from the course meeting

Assessment Practices

Frequent quizzes or other assessments

Assignments having students express what they have learned and what they still need to learn

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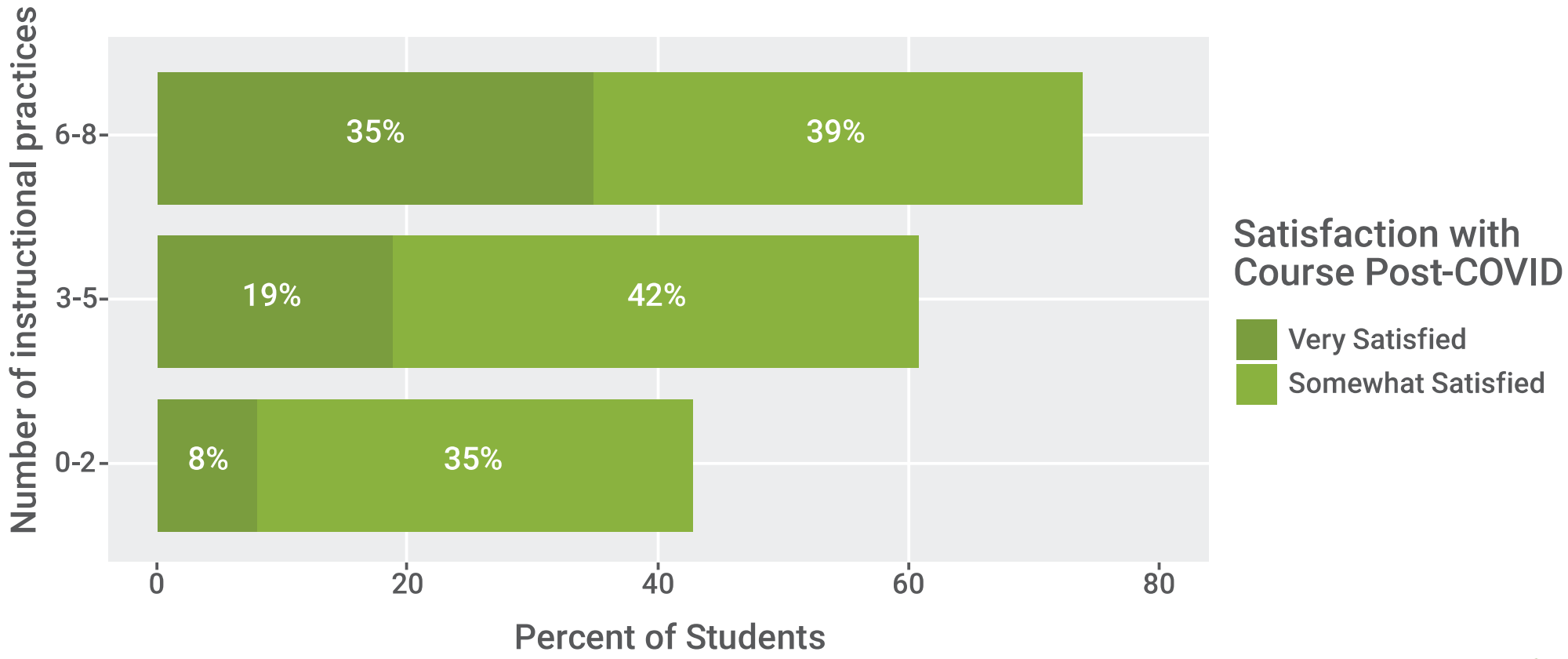
Use of Instructional Practices and Student Satisfaction



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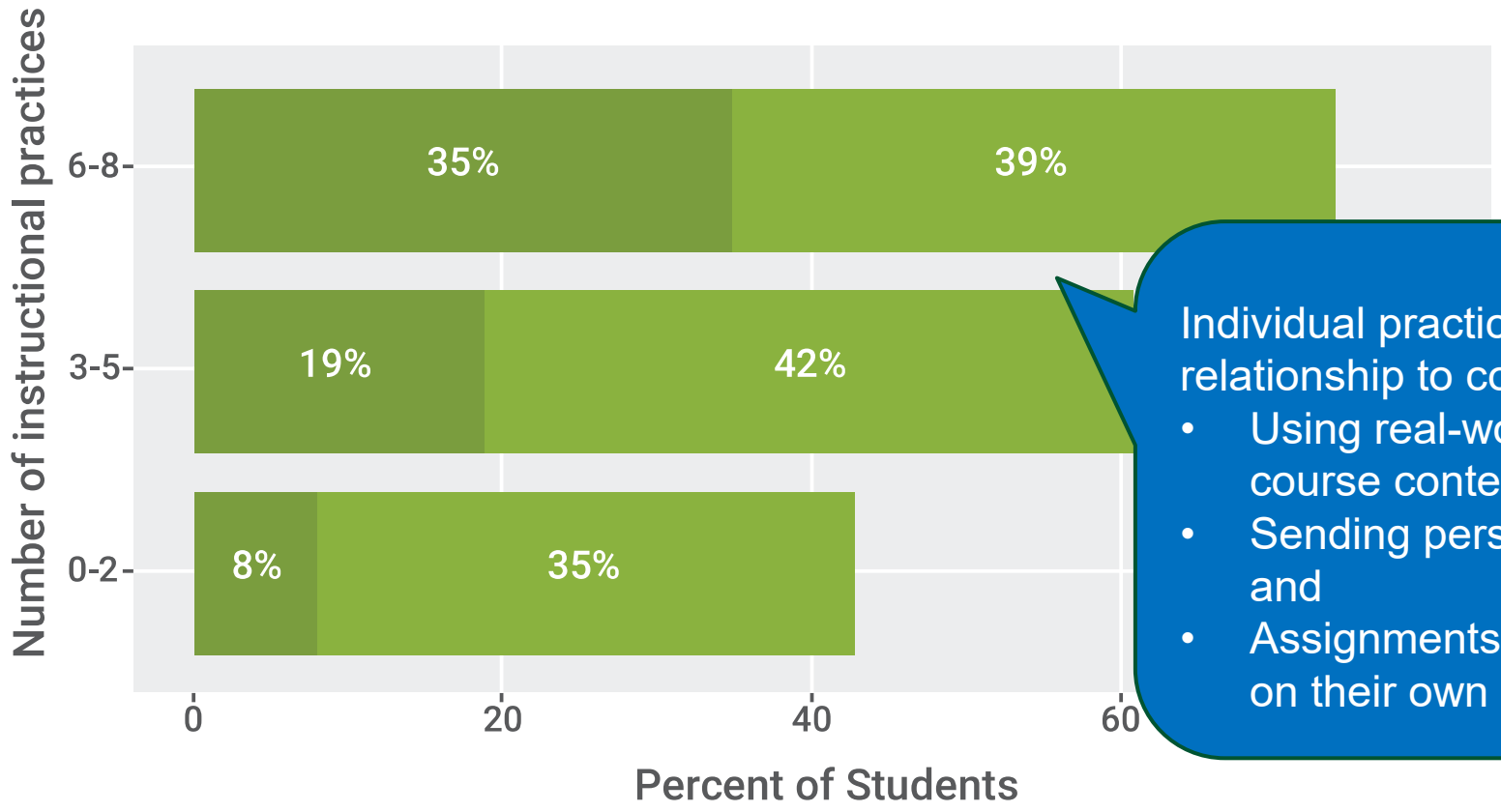
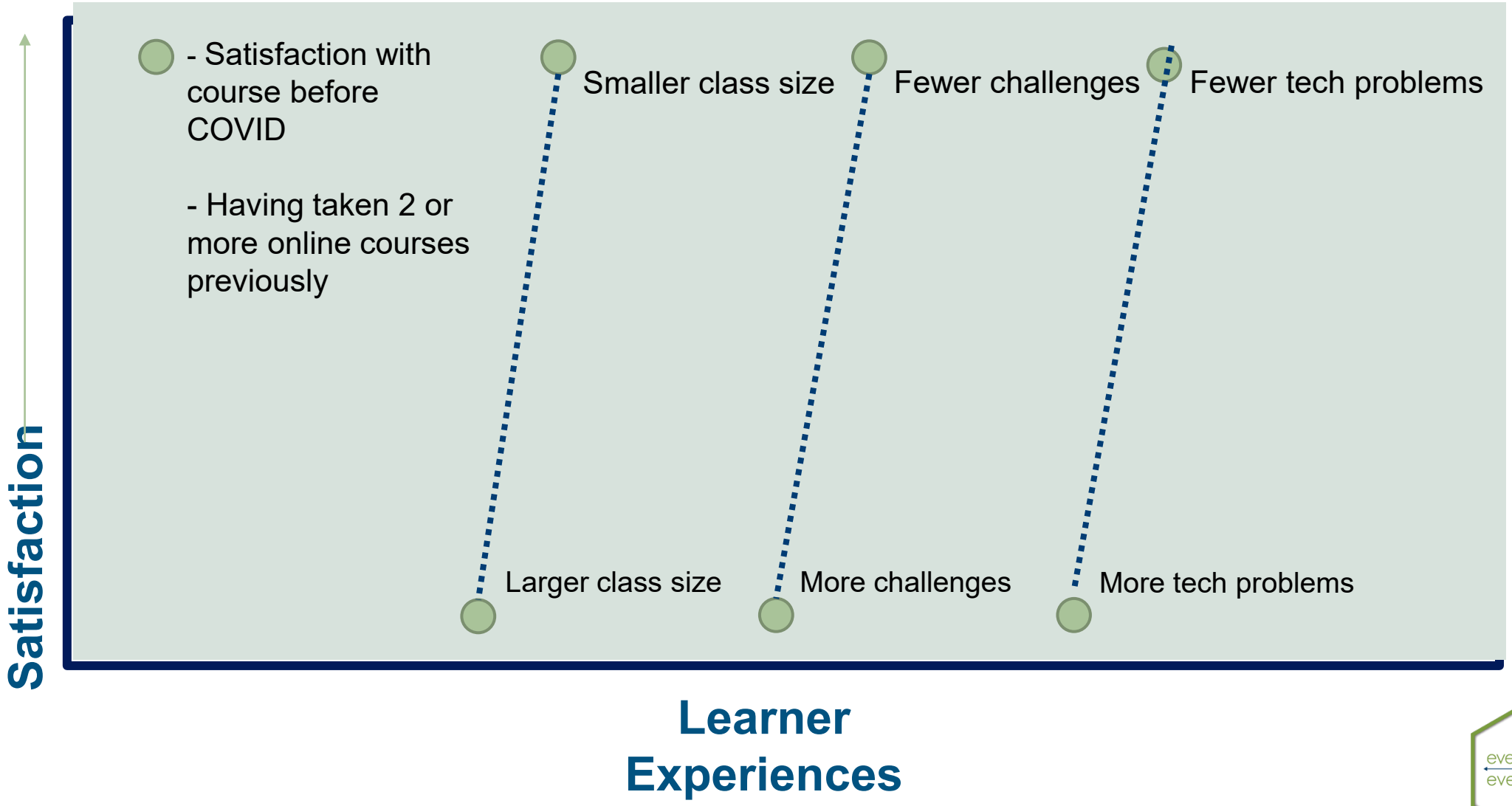


Individual practices with the strongest relationship to course satisfaction were

- Using real-world examples to illustrate course content
- Sending personal messages to students and
- Assignments requiring students to reflect on their own learning

Other Predictors of Course Satisfaction Post-COVID

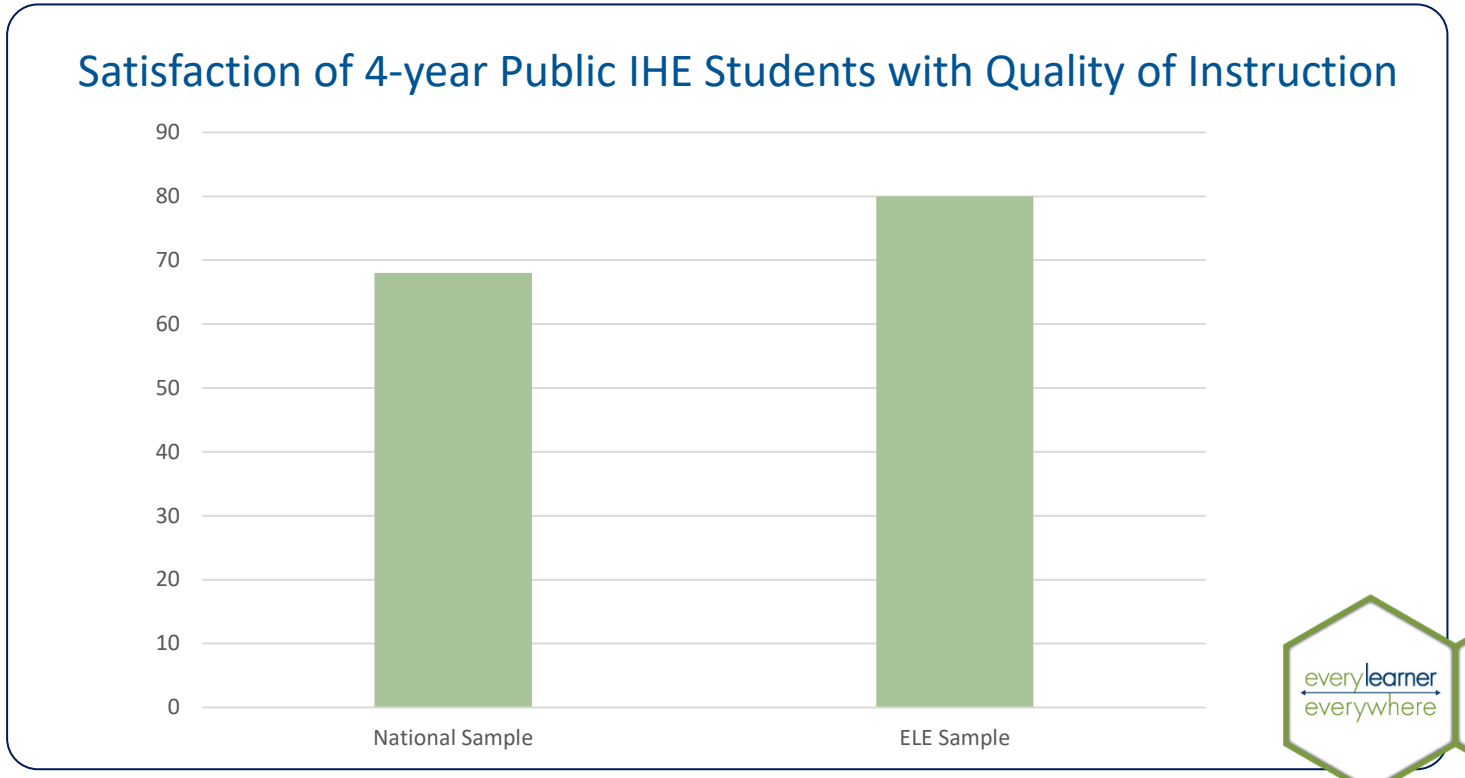


What We're Learning from Every Learner Partners

Previous Support & Experience

Support and experience using technology for learning BEFORE the pandemic made a big difference for students and instructors.

Separate Sample of Students from Courses Using Adaptive Courseware



Contact Info & Resources

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Barbara Means, bmeans@digitalpromise.org

Resources:

A Guide to Implementing Adaptive Courseware, https://www.everylearnereverywhere.org/resources/a-guide-for-implementing-adaptive-courseware-from-planning-through-scaling/