Silver Linings: Digital Learning as an Enabler for Evidence-Based Teaching Strategies

May 2021

INVESTMENT BANKING + STRATEGY CONSULTING

# Key questions addressed in these materials include…

(1) How have faculty perceptions of digital learning changed?

(2) What are the course level priorities faculty are focused on?

(3) How are faculty using digital tools to support evidence-based teaching practices?

(4) How can institutions and leaders support high-quality digital instruction moving forward?

Since the start of the pandemic, we have gathered input from over 11,000 faculty at 2,000 institutions to inform learnings

Longitudinal Focus of Analysis

### Introductory Faculty Panel (N=852)*

- Representative panel of faculty who are currently teaching courses at **introductory or developmental education levels** at 4-year and 2-year institutions and who shared their experiences in all three surveys

- **Same population** enables analysis of longitudinal impact on individual faculty and change over time via monitoring the experiences of the same faculty group over time
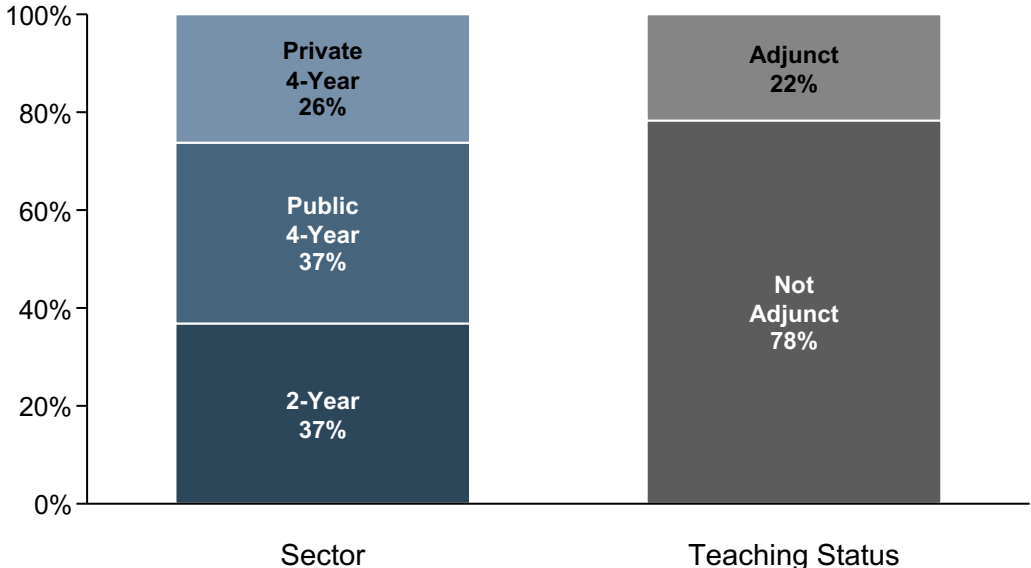
Part of a Broader Sampling Approach
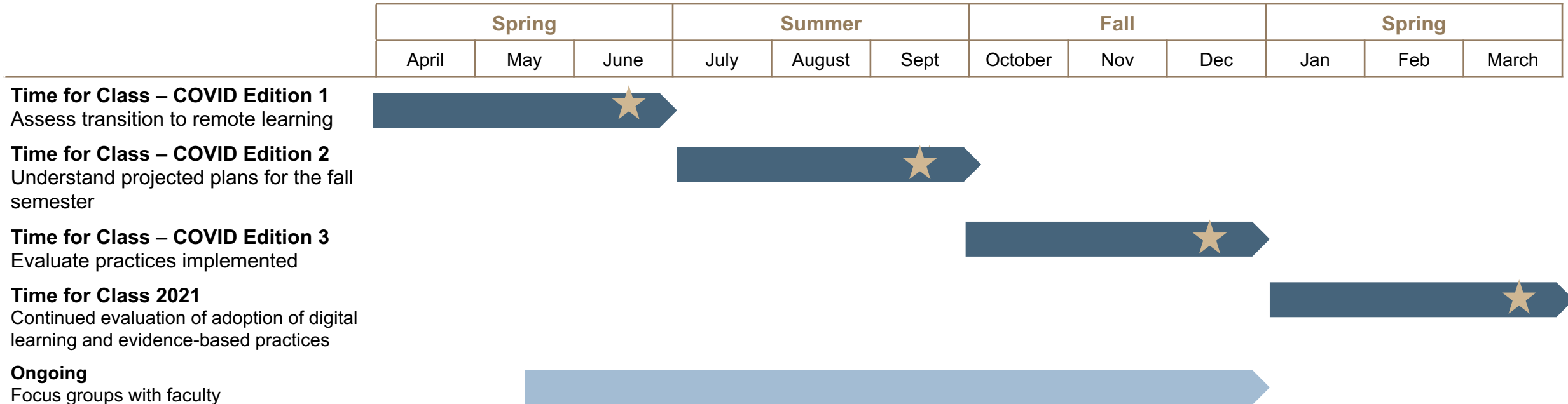
Overall Faculty Sample (N=2,832)

- Nationally representative sample of faculty who are teaching a course this fall at 4-year and 2-year institutions, across introductory and upper-level courses

- Representative groups enable general comparison across survey administration
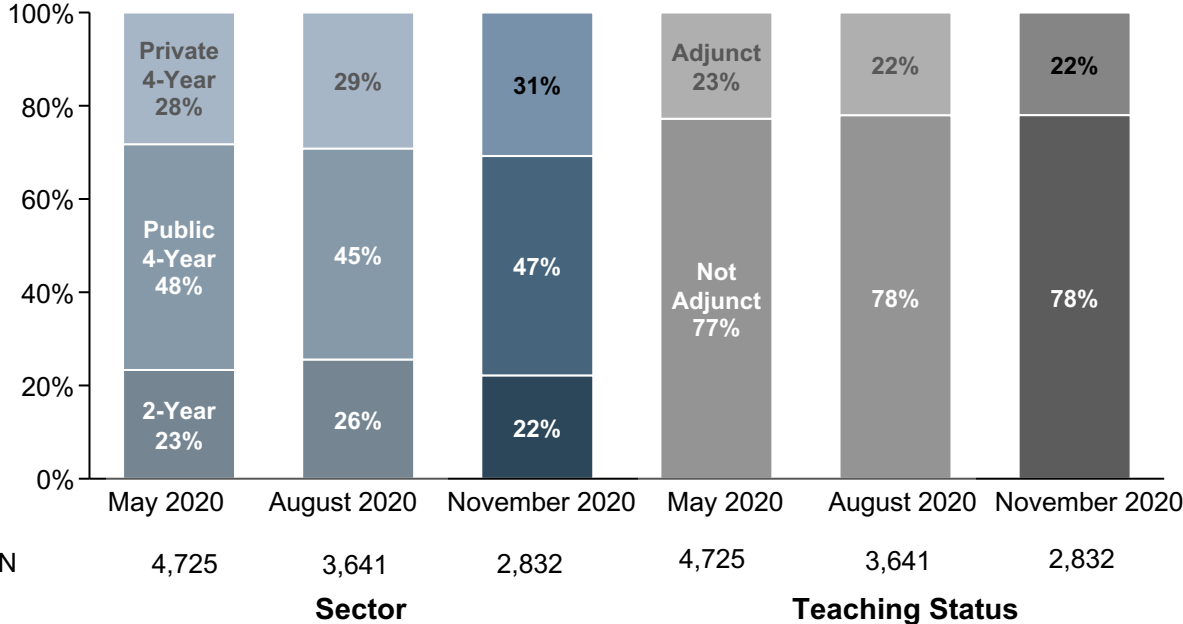
Four data collection periods inform this work

- Measure the **faculty and institution response to COVID-19**, including challenges faced, professional development provided, and instructional materials adopted

- Determine the **longer-term shifts** in modality and / or pedagogy catalyzed by the experiences during the rapid transition to remote

- **Curate information for institutions and providers** across the higher education landscape so that they can best serve the needs of faculty

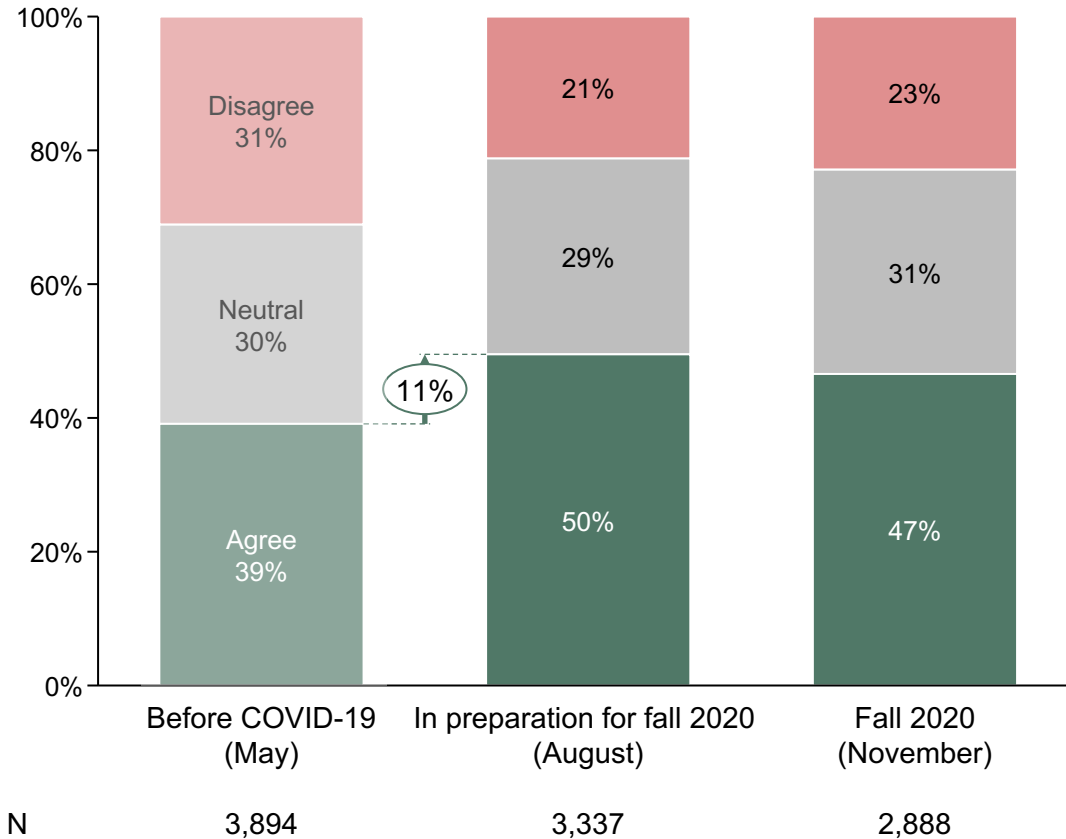|	Spring			Summer			Fall			Spring		
	April	May	June	July	August	Sept	October	Nov	Dec	Jan	Feb	March
Time for Class – COVID Edition 1 Assess transition to remote learning			★									
Time for Class – COVID Edition 2 Understand projected plans for the fall semester					★							
Time for Class – COVID Edition 3 Evaluate practices implemented								★				
Time for Class 2021 Continued evaluation of adoption of digital learning and evidence-based practices											★	
Ongoing Focus groups with faculty												

The scale of change to teaching and learning prompted by the pandemic was tremendous

- Last spring, 91% of faculty transitioned a course to an emergency remote teaching format

- Last fall, 67% of faculty taught fully online, and 24% taught hybrid or highly flexible

  - 76% of faculty had to adjust their course from the modality it was typically taught

  - 72% integrated new digital tools

- Over 17 million undergraduate students have been affected by this transition

The pandemic brought forth increased exposure to digital learning practices and tools and with that a positive change in sentiment about online and digital learning

"Online learning is an effective method for teaching"

	Before COVID-19 (May)	In preparation for fall 2020 (August)	Fall 2020 (November)
Disagree	31%	21%	23%
Neutral	30%	29%	31%
Agree	39%	50%	47%
N	3,894	3,337	2,888

11%

"Online classes can be useful for introductory classes if given proper time to plan pedagogical materials."
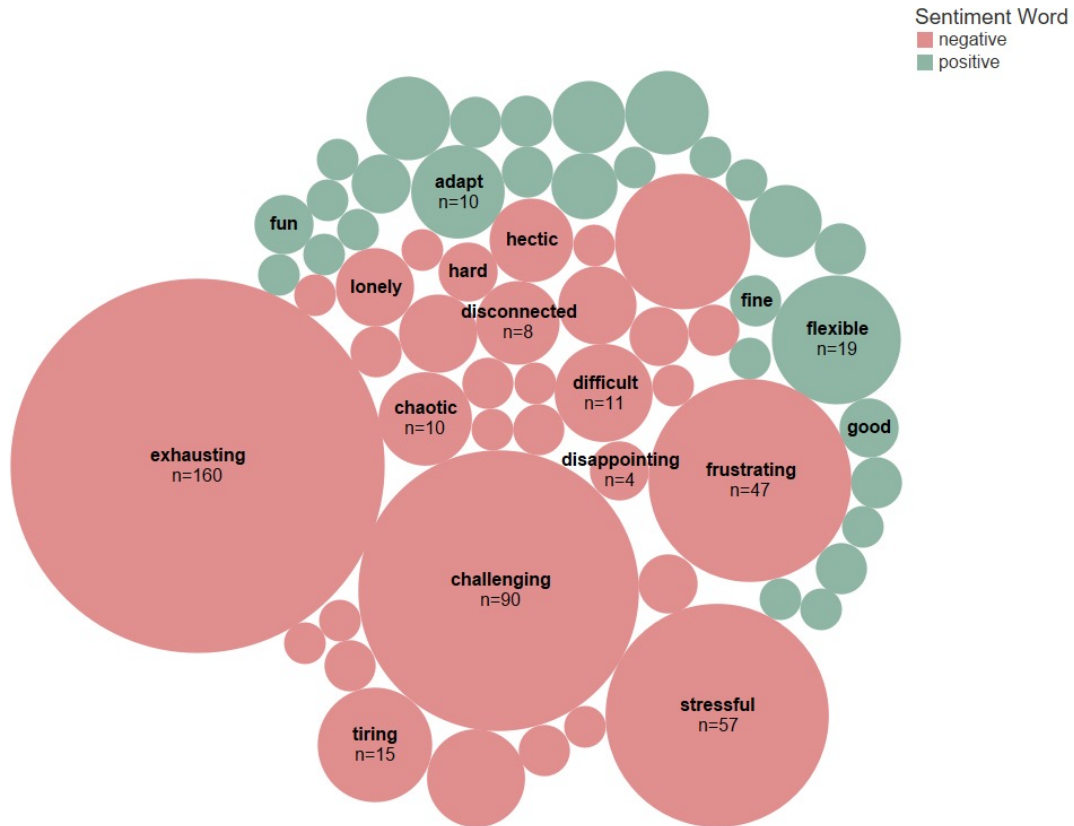
- Faculty, Private 4-Year Institution

"Pre-transition, I used primarily objective assessments in a face-to-face environment in which I could monitor academic integrity. Because of concerns regarding academic integrity, I became more creative in my assessment. – Faculty at Public 4-Year Institution

"I believe that students learned more, in some respects."

- Faculty, 2-Year Institution

The fall term left many introductory faculty feeling exhausted as they spent significant time making shifts to their courses and supporting students

Introductory faculty one-word description of their experience teaching this fall

Sentiment Word
- negative (red)
- positive (green)

Word bubbles: fun, adapt n=10, hectic, lonely, hard, disconnected n=8, fine, flexible n=19, exhausting n=160, chaotic n=10, difficult n=11, good, disappointing n=4, frustrating n=47, challenging n=90, tiring n=15, stressful n=57

Faculty reported that they…

Used all resources available

- *"Fall 2020 will be a semester to remember, because of the many changes that I have undergone as an instructor. **I have learned how to truly use what I have with my learning platform, book company, and other college resources**, to ensure that my students are engaging in the course itself as much as possible."* – Introductory Biology Instructor, 2-year institution

Gave real-time support to students

- *"The most effective thing I did this past term was **staying up all night to respond to student emails** as soon as they came in."* – Introductory English Instructor, 2-year institution

Worked to make courses equitable

- *"One change that I made was **I recorded myself teaching every single topic** in my course with full recorded lectures. This has a positive impact because my students can watch the videos when they are most focused (when kids are sleeping, no work, etc.). **When school returns in person, I will still have my videos** and when a student is absent, they will now be able to stay caught up through watching the video of me teaching the topic."* – Developmental Math instructor, 2-year institution

Engaging students was the most frequently cited challenge and is a key priority moving forward

70%
of faculty say that **"keeping my students engaged"** was the most challenging part of the transition to remote

> *I must work better at **engaging and retaining students**. After my institution's transition to all online courses, **several of my students withdrew** and were not, no matter my attempts, engaged in coursework.*
>
> *- Introductory English Faculty, Adjunct, 2-year Institution*

74%
of faculty say **"increasing student engagement in class"** is a priority for the fall term

> *It's much harder to engage students online and to make them engage with each other. In the future, **rather than giving them the option** to work in groups online, **I will need to make it mandatory and have it more structured**.*
>
> *- Introductory Chemistry Faculty, 2-year institution*

*Survey question: "What was most challenging <u>for your transition</u> to teaching remotely? Please choose up to three." N = 4,787
*Survey question: "In planning for the fall term, what are your biggest instructional priorities? Please select all that apply." N = 4,767
Sources: Faculty Sentiment Spring 2020, Tyton Partners analysis

But 2/3 of introductory faculty continue to point to concerns about equity and access at their institution that are systemic and not adequately addressed

"I am concerned about equity gaps between student groups at my institution"

	May 2020	November 2020
Disagree	11%	16%
Neutral	23%	17%
Agree	66%	66%
N	759	772
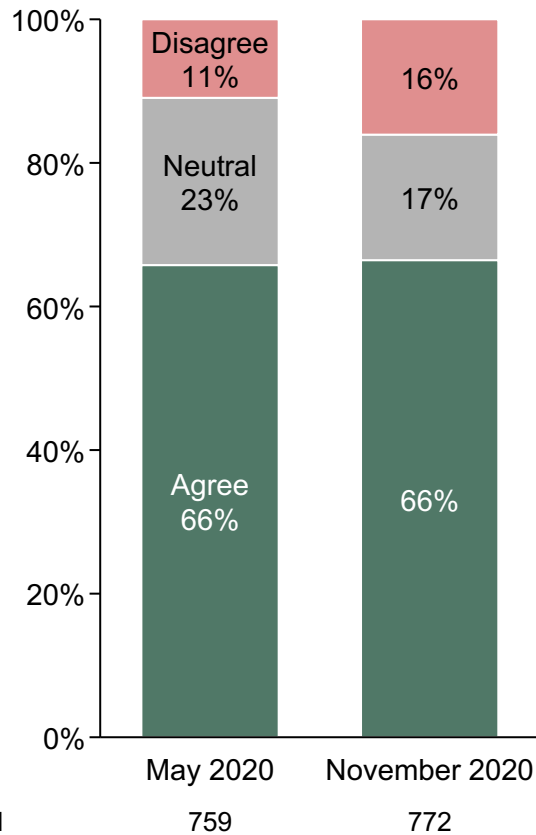
This term exposed challenges for…

Poverty-affected, Black and LatinX students

Students without sufficient internet access

- *"The students having the most trouble are … students from school districts with lower socio-economic status, which incorporates ethnicity. They worked so hard to get to college and have so much to lose. I must work on being clearer and engaging even before day 1 so they feel welcome and like they can proceed with confidence."* – Introductory Faculty, 4-year public institution

- *"Many of our students live in rural areas without reliable internet access. While synchronous online courses (via Zoom, etc.) seem to improve attendance and enhance engagement, not all students have the capacity to stream their courses."* – Introductory Faculty, 2-year institution

Faculty point to institution-wide improvement needed…

Integrated advising

Tutoring support

Mental health

- *"There should be more coordination between advisors, profs, and students. I teach freshman, and they only just now in November seem to be getting the hang of what's going on."* Introductory Faculty, 4-year public institution

- *"More **advertisement of the resources (like tutoring) that is available for students** to help. More **positive messages** about our ability to be successful in this environment. More **21st century social media outreach** to students. More **training** available to students on how to use the online tools that we make available to them."* – Introductory Faculty, 2-year institution
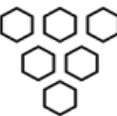
- *"We need more **mental health resources** on campus. Our students really struggled with an early start, early finish semester without breaks and that coupled with COVID and personal issues that students encountered caused more **mental health problems than I have ever seen**…Faculty need guidance on the kinds of support we should make available (extended time to complete assignments, additional one-on-one support, etc.)."* – Introductory Faculty, 4-year public institution

Pandemic-forced redesign yielded some positive discoveries for faculty about the power of digital learning approaches

| Practices that will persist post-pandemic	Potential impact on faculty	Potential impact on students
Use of asynchronous, pre-recorded materials	Faculty use class time to engage students actively in their learning	Enables students to access content flexibility and reduces barriers to participation
Increased modularization of content and learning outcomes	Enables faculty to more easily and efficiently adjust courses based on student learning	Gives students increased visibility into learning outcomes and what they need to learn
More frequent and formative assessment	Provides insight on student comprehension that can be used to adjust instruction and identify students who need support	Gives students increased visibility into mastery and what they still need to learn
Use of digital tools to engage students, foster collaboration, and assess learning	Facilitates interactions that yield more frequent, observable evidence of learning	Provides students with ability to actively engage in learning both inside and outside of class sessions and in flexible formats
Targeted and individualized outreach and support to students who need it	Done without tools and support, this has potential to take significant faculty time	Provides students with encouragement and help-seeking support

*"My institution undervalues how **vital asynchronous remote learning options are for equity** and student success. Removing both geography and time (allowing asynchronous options) clearly reduces the equity gap and improves student success. I have been pushing to continue remote teaching after the pandemic, but my department abruptly reversed course and is now **requiring synchronized (virtual) courses** this coming spring. I am so disappointed. It is clear in my sections (I have had 5 of 75 students drop) and everyone is passing. In a F2F section, I'd have at least three times the drops and significantly more students not passing. And it would be my black and brown students that would fare worse in the F2F and now, everybody stays."*

– Introductory STEM instructor, 2-year institution

A variety of online instructional practices were used during the transition, four associated with greater instructor satisfaction with student learning
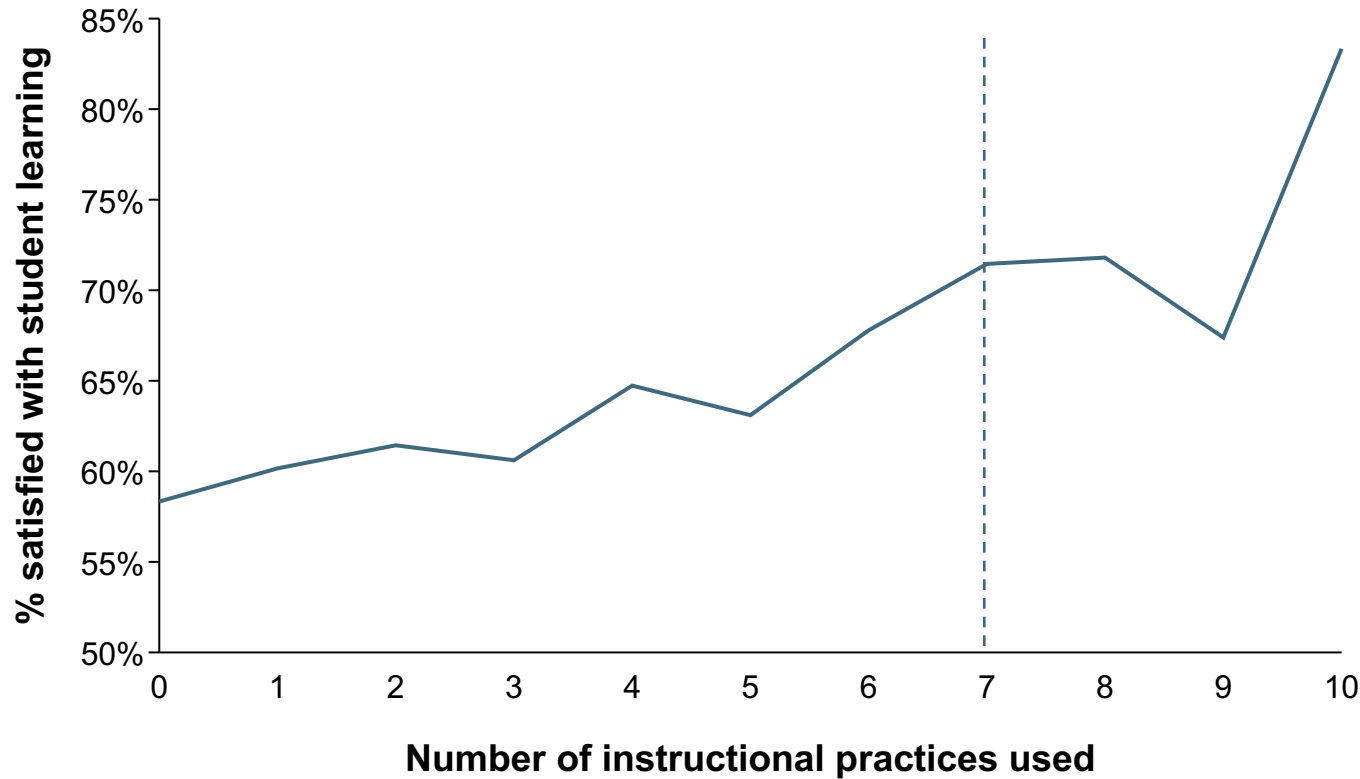
Instructional practices employed by faculty during remote learning
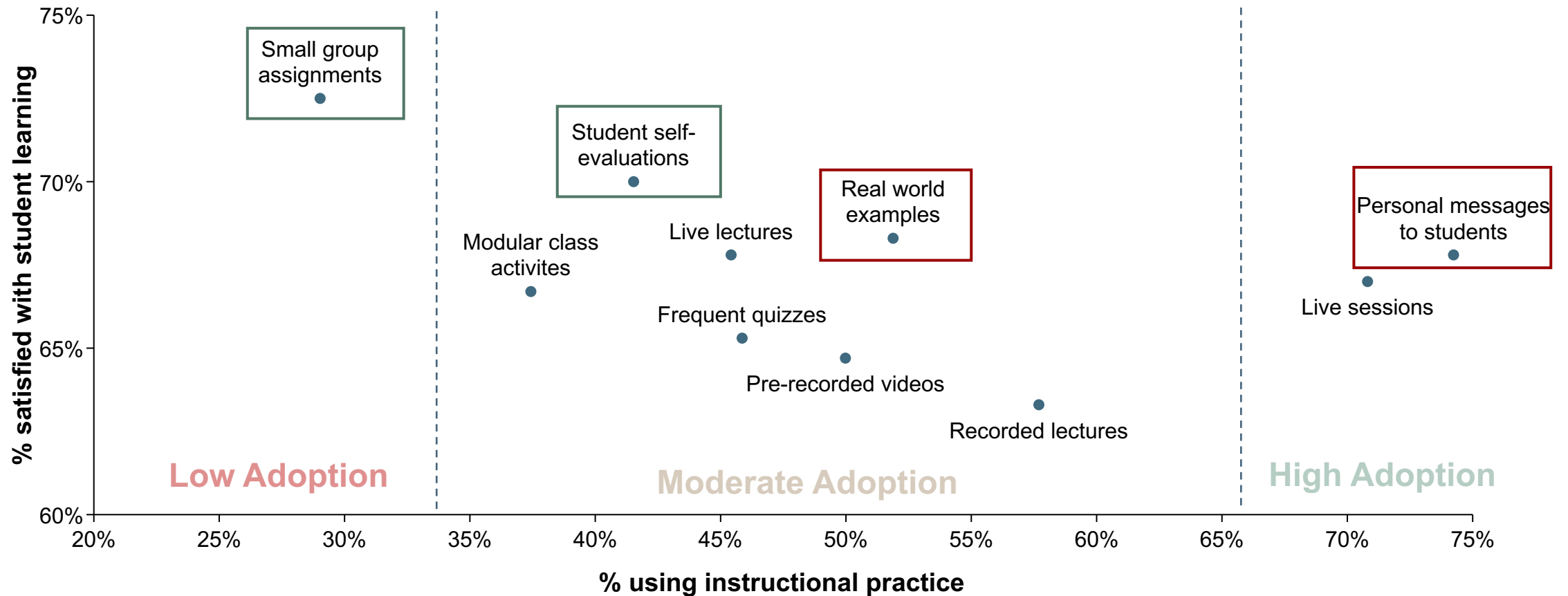
The greater number of online instructional practices used, the greater faculty (and student) satisfaction with learning

Instructional practices used and satisfaction with student learning

...but only

20%

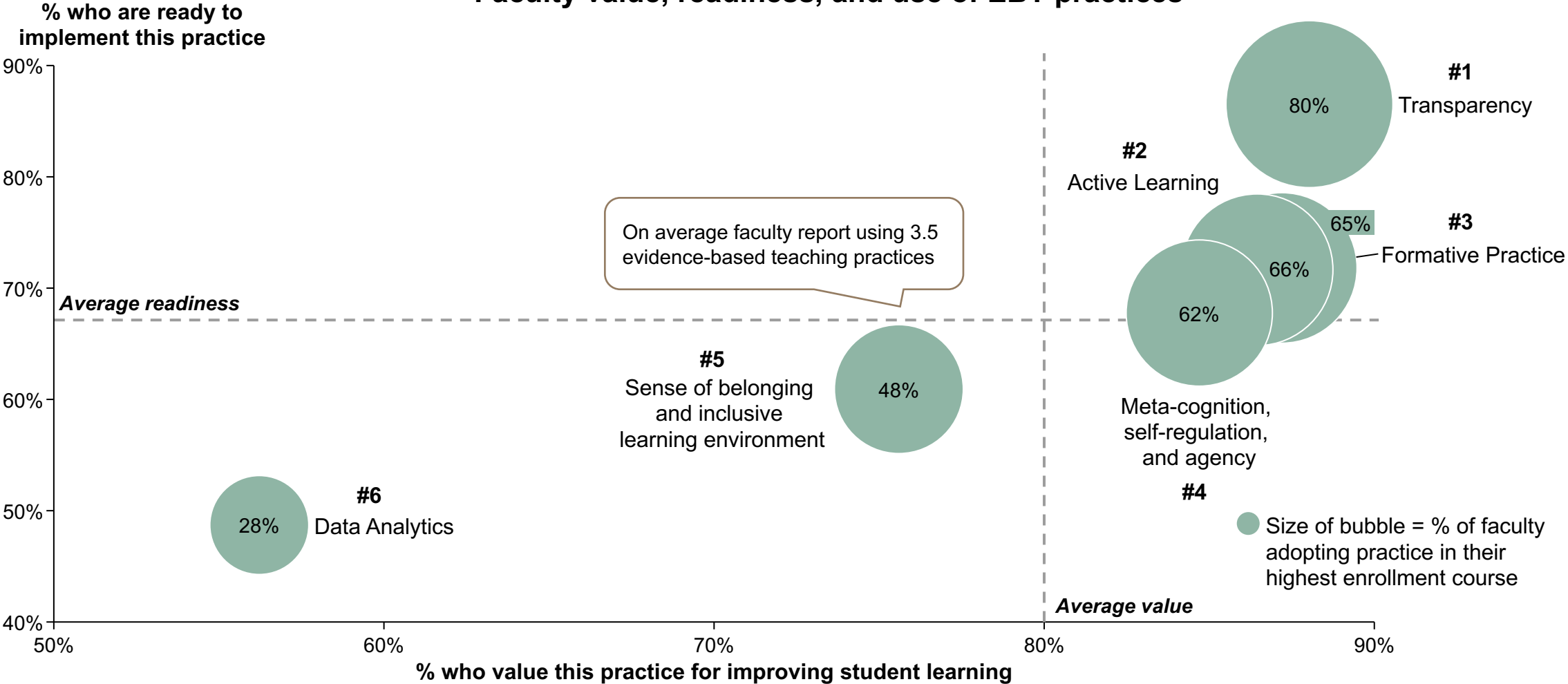of faculty used 7 or more instructional practices

Based on learnings, we continue to explore the intersection of evidence-based teaching practices and how digital tools can enable them (or not)

Practice	Definition
Transparency	Providing students with a clear overview of course content, learning outcomes, and assessment criteria
Active Learning	Engaging students in "learning by doing"
Formative Practice	Creating opportunities for students to practice skills in ways that provide timely and targeted feedback to nudge them towards mastery
Data Analytics	Using real-time data to inform teaching and ongoing course improvements to optimize student success
Meta-cognition, self-regulation, and agency	Incorporating practices that help students learn to be a better learner and take control of the learning process
Sense of belonging and inclusive learning environment	Intentionally using practices that enable all students to feel that they and their unique background have a place in the life of the classroom

Faculty value and are most prepared to set expectations in their classrooms; while faculty believe "belonging" is important, fewer feel trained and ready to incorporate

Faculty value, readiness, and use of EBT practices

% who are ready to implement this practice

On average faculty report using 3.5 evidence-based teaching practices

Average readiness

Average value

#1 Transparency — 80%

#2 Active Learning

#3 Formative Practice — 65%

66%

62%

Meta-cognition, self-regulation, and agency
#4

#5 Sense of belonging and inclusive learning environment — 48%

#6 Data Analytics — 28%

Size of bubble = % of faculty adopting practice in their highest enrollment course

% who value this practice for improving student learning

Notes: x and y-axis are the percent of respondents who chose a 4 or 5 on a scale from 0-5 for the following questions: x-axis: "Please rate your perception of the value of these practices on improving student learning", y-axis: "Please rate your agreement with the statement 'I have the support needed and am able to implement these practices'", N=2,465
Sources: Time for Class 2021, Tyton Partners analysis

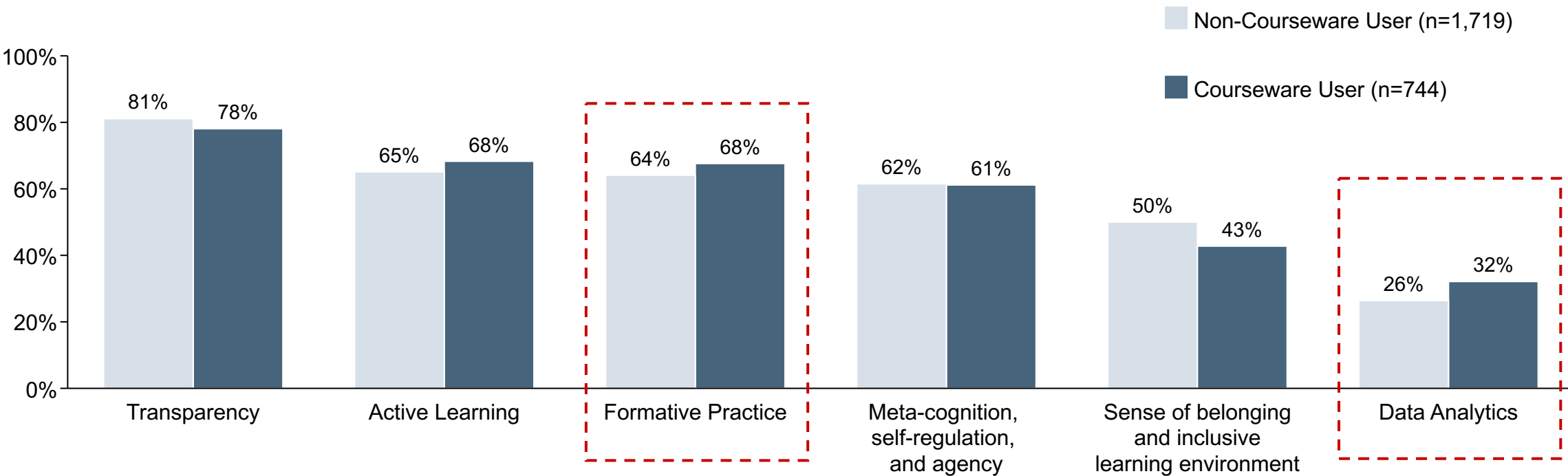# Faculty used a variety of digital tools in order to support course outcomes

Tools used during the fall and spring terms

% Change

Tool	% Change
Learning Management Systems (LMS)	5%
Video conferencing tools	6%
e-textbooks	6%
Courseware	14%
OER	4%
Classroom engagement and collaboration tools	5%
Digital homework tools	1%
Proctoring or assessment tools	0%
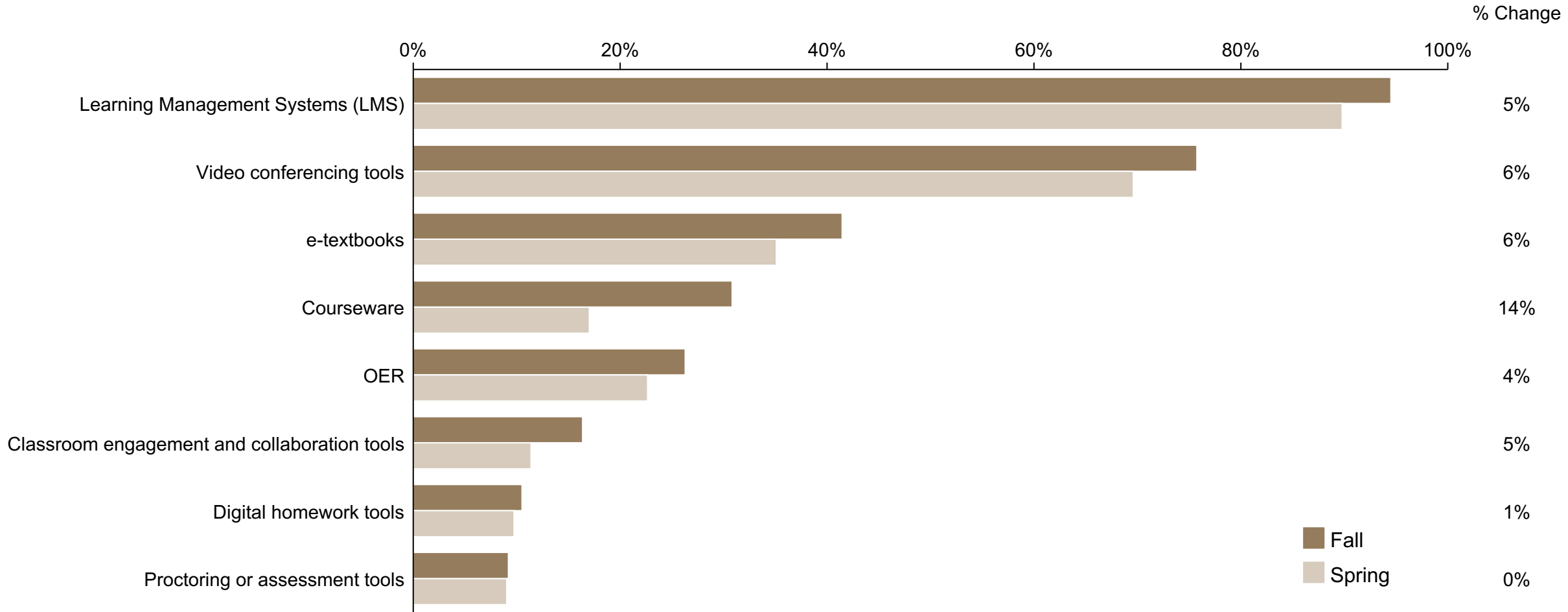
■ Fall
■ Spring

Note: Spring survey question: "Which of the following tools or resources did you use in your transition to remote learning? Please select all that apply." N = 852; Fall survey question: "Which of the following tools or resources did you use in your course this fall? Please select all that apply." N = 837
Sources: Faculty Sentiment Spring and Fall 2020, Tyton Partners analysis

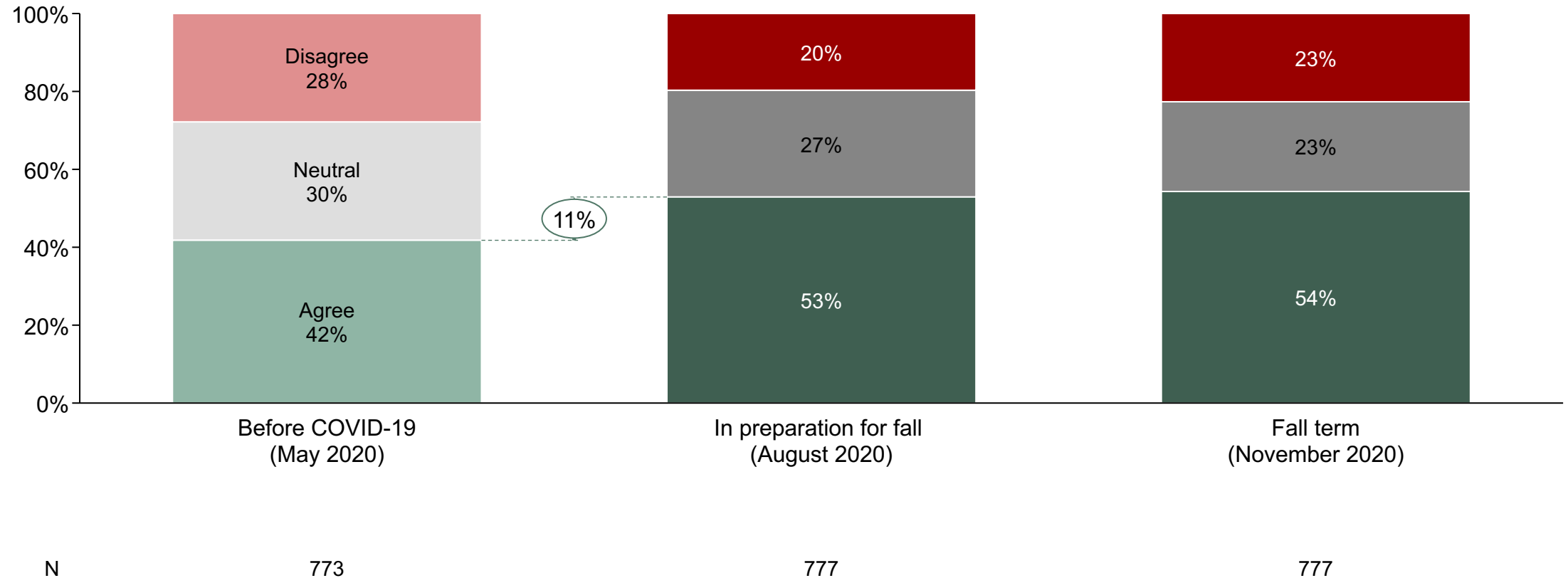# Courseware usage is associated with higher rates of data analytics usage

Evidence-based teaching practice adoption by courseware usage

Legend:
- Non-Courseware User (n=1,719)
- Courseware User (n=744)

Category	Non-Courseware User	Courseware User
Transparency	81%	78%
Active Learning	65%	68%
Formative Practice	64%	68%
Meta-cognition, self-regulation, and agency	62%	61%
Sense of belonging and inclusive learning environment	50%	43%
Data Analytics	26%	32%

Notes: "Which of the following teaching practices are you using in your highest enrollment course this term?", "Is the courseware product that you are using in your highest enrollment course adaptive?"
Sources: Time for Class 2021, Tyton Partners analysis

Institutions ramped up their faculty support and more faculty reported that their institution provided sufficient support for teaching online than before COVID-19

"My institution has provided sufficient training and professional development for teaching online"

|	Before COVID-19 (May 2020)	In preparation for fall (August 2020)	Fall term (November 2020)
Disagree	28%	20%	23%
Neutral	30%	27%	23%
Agree	42%	53%	54%
N	773	777	777

11%

Notes: May survey question: "Prior to the COVID-19 crisis, how would you characterize your agreement with the following statements [My institution has provided sufficient training and professional development for teaching online]?"; August survey question: "As you consider the coming fall term, how would you characterize your agreement with the statement [My institution has provided sufficient training and professional development for teaching online]?"; November survey question: "How would you characterize your agreement with the following statement [My institution has provided sufficient training and professional development for teaching online]?"
Sources: Faculty Sentiment Spring, Summer, and Fall 2020, Tyton Partners analysis

Practice adoption is correlated with frequency of PD provided; data-oriented practices are important for equity-based teaching and lag in use and training

Evidence-based teaching practices incorporated into fall course compared to professional development engaged with
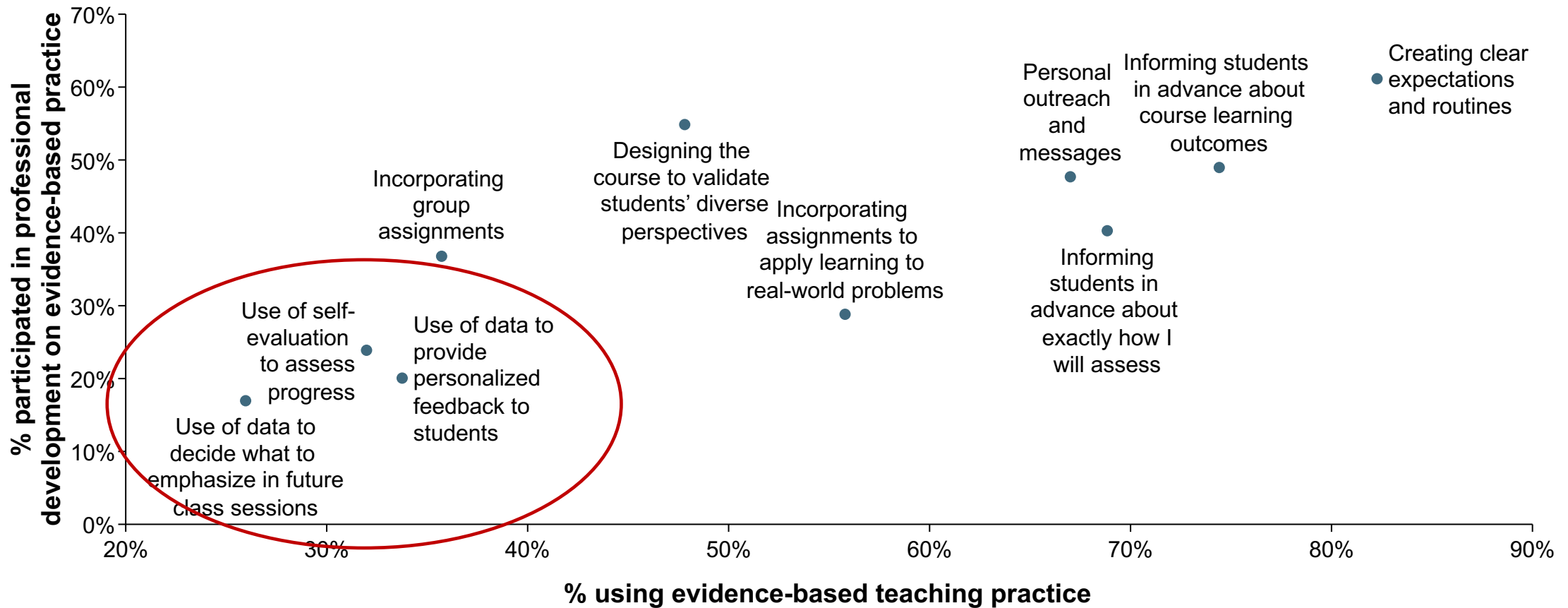
Note: y-axis question: "Which of the following you have received professional development for as you prepare for the fall term? Please select all that apply."; x-axis question: "Which of the following instructional practices are you incorporating into your course? Please select all that apply." N = 1,583
Sources: Faculty Sentiment Summer 2020, Tyton Partners analysis

Faculty say they seek additional support in the following areas

More applied institutional support

- *All faculty here could have used more aid in putting things together. However, the administration hasn't even been able to follow through with the promises that they've made to help us.*
- *A fully established Center for Teaching and Learning as well as a comprehensive Center for Academic Technology*
- *During the last two months I have seen an increase in administrative demands for faculty to attend training. However, this is not the time to divert faculty attention away from what is important; the development of online classes that will ensure student success. Instead of requiring training that will not offer much new material, more time should be devoted to assisting faculty prepare and conduct their online classes.*

Support for students and their learning

- *Many campuses, including mine, [feel] that effective remote teaching is almost entirely the burden of faculty teaching techniques. I have said for years that most STUDENTS need more training in how to be effective online learners. My experience last year, and backed by many of my colleagues, indicate that much more emphasis needs to be placed on student readiness to be good online learners.*
- *I have concerns about students taking a variety of modes of courses and not being able to find their own "mental architecture" for the semester. Our training encouraged weekly modules to help with this, but we'll see how well students manage this change.*
- *Communication and effective collaboration with advisors and instructors, coaches, etc.*

Engagement strategies that are efficient and effective

- *My greatest concerns are about the amount of grading and emails these high touch practices will generate. I would like professional development about balancing online teaching with research and other responsibilities.*
- *How to efficiently [find time] to email many many students once per week..*

Discipline-specific support

- *Discipline-specific tactics, techniques, best practices, etc. for student engagement in the [remote teaching] course environment.*
- *Discipline-specific tools. Wish I could be more specific, but I don't know what's out there (which is part of the problem).*

Areas of recommended focus moving forward

- **Targeted Support for Evidence-based Practices** - Provide faculty with support in implementing evidence-based instructional practices, and focus on increasing
  - Support faculty in organizing courses to include routines that promote student agency, community and engagement in learning
  - Focus on the use of data and disaggregation of data

- **Selection and Curation of High-Quality Digital Tools -** Facilitate the discovery and selection of high-quality and affordable digital learning tools and provide guidelines for usability and implementation

- **Build Capacity -** Expand institutional capacity for key elements of digital learning support and professional development.

- **Measure and Monitor** - Evaluate the impact this shift is having on different student populations, and disaggregate data across student populations to understand the impact of practices across student groups

- **Prepare Students and Ensure Access–** Ensure that students have the necessary equipment, internet access and skills prepared to learn using digital tools.

CourseGateway offers resources exploring high-quality tools for your institution

Thank you!

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