Understanding the "What" and "Why" of K-12 Instructional Materials to Support Student Success

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OLC Innovate
EDUCATION REIMAGINED 2024

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Presentation Details

- Research background
- Survey Details
- Textbooks
- Digital Materials for Students
- Digital Materials for Instructors
- Perceptions
- In Their Own Words
- Conclusions & Q&A
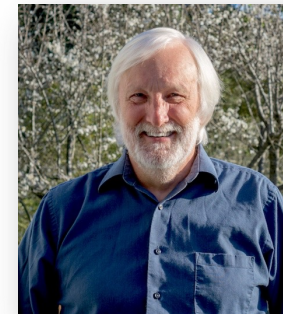
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RESEARCH BACKGROUND

INTRODUCTION TO BAY VIEW ANALYTICS

Bay View Analytics offers a comprehensive suite of consulting services in survey design and statistical research. Our services build on nearly two decades of research and survey design, sampling, and statistical analysis expertise.
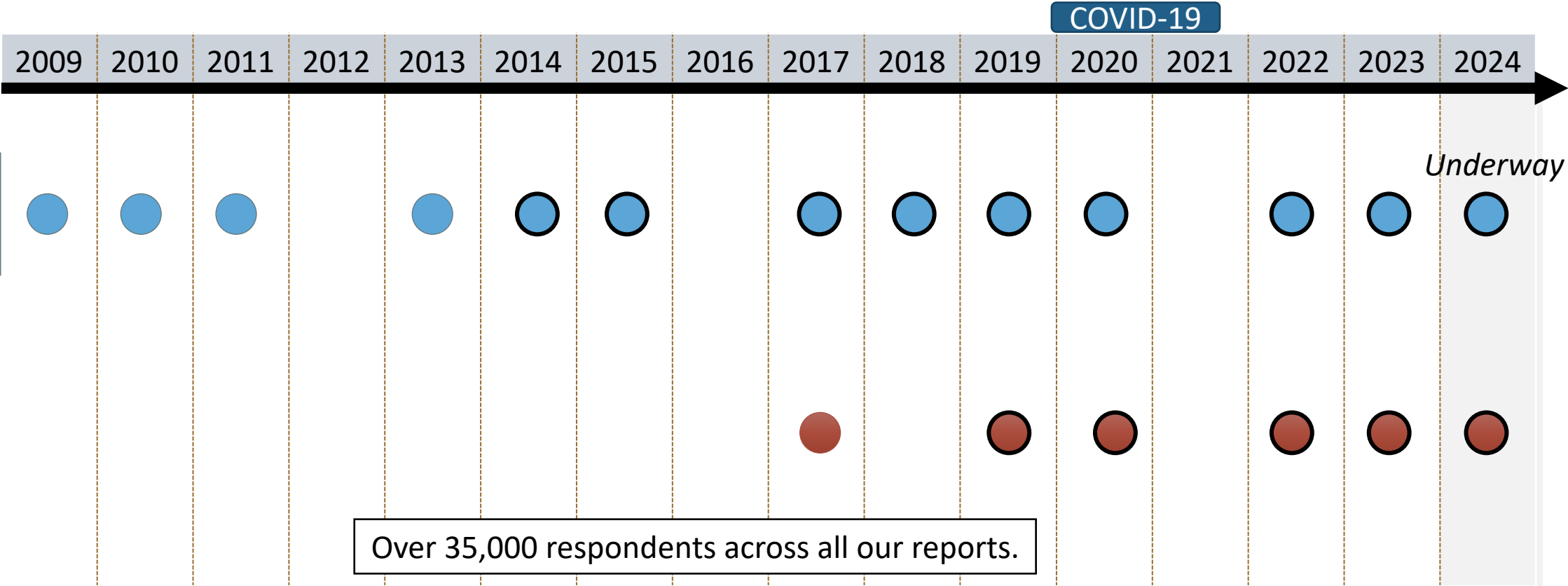
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SURVEYS AIM TO UNDERSTAND THE ROLE OF OER

Goals of Surveys

- To understand the role of OER in Higher Education and K-12
- To quantify perceptions and awareness of OER including its open licensing (e.g., Creative Commons)

Respondents

- Admins, Faculty, Teachers, and Chief Academic Officers
- Nationally representative for geography and type of institution

Project supported by

WILLIAM + FLORA
Hewlett Foundation

OLC ONLINE LEARNING CONSORTIUM

Pearson

ALFRED P. SLOAN FOUNDATION
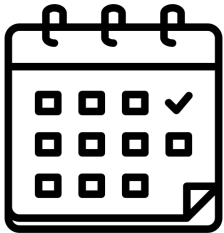
KAPLAN UNIVERSITY

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SURVEY DETAILS

SURVEY DETAILS

April 2023

1,205 Teachers
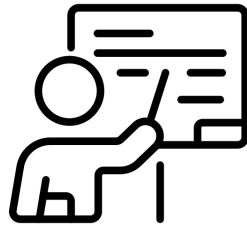
50 States

RESPONDENT DETAILS

- Respondents reflect all K-12 grade levels, though slightly more high school than elementary school teachers

- Many disciplines represented, majority are Math, English, and Natural Sciences

- 8% of teachers across all grades provide some remote instruction of any kind, slightly higher in higher grades

> Results presented on use of digital tools will represent their use in in-person classrooms, not remote learning.

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TEXTBOOKS

Most teachers require textbooks
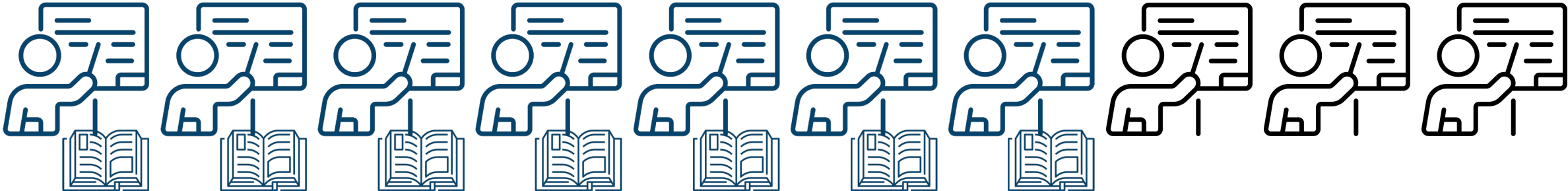
7 out of 10 teachers require textbooks for their classroom

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DIGITAL TEXTBOOKS ARE COMMON

Teacher: Textbook Format by Year

Year	Digital-Only	Both	Print-Only
2021-22	19%	49%	32%
2022-23	21%	56%	23%

■ Digital-Only   ■ Both   ■ Print-Only

10% fewer print-only option available in 2022-23 than the year before.

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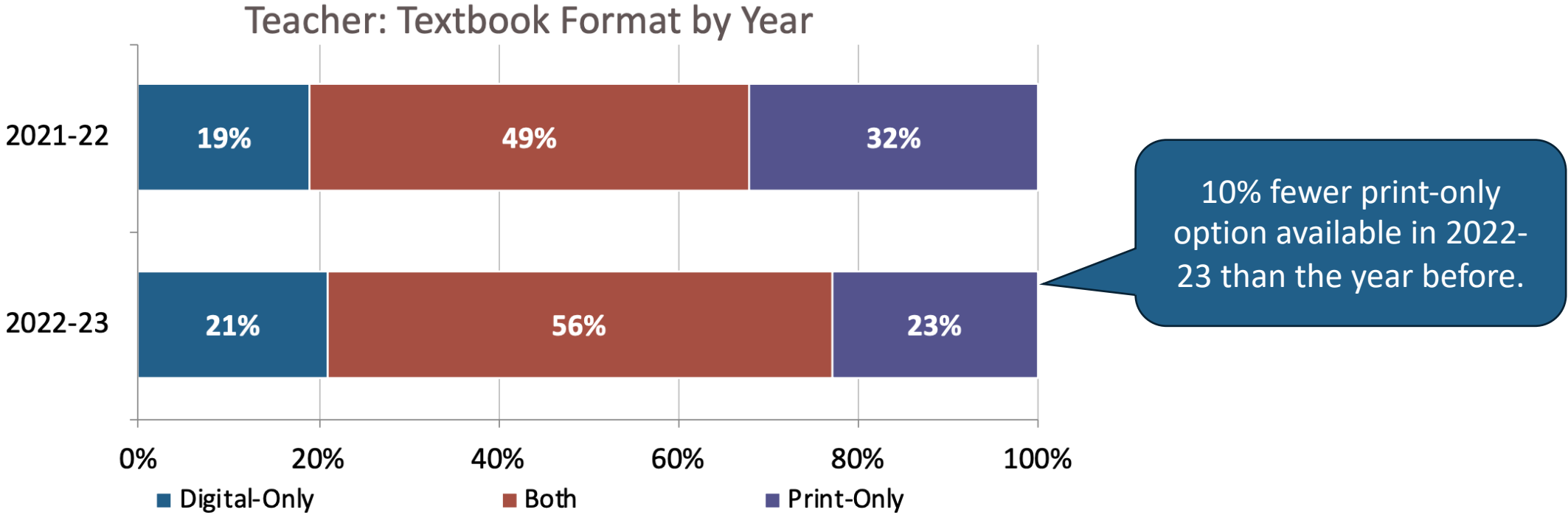
DIGITAL-ONLY AND DIGITAL OPTIONS MORE LIKELY IN HIGHER GRADES

Textbook Format by Grade Level

Grade Level	Digital	Both	Print
9 to 12	29%	53%	18%
6 to 8	26%	54%	20%
4 to 5	14%	62%	25%
Pre-K to 3	9%	57%	34%

4 in 5 teachers have digital textbooks

1 in 3 teachers use print only textbooks

Legend: ■ Digital ■ Both ■ Print
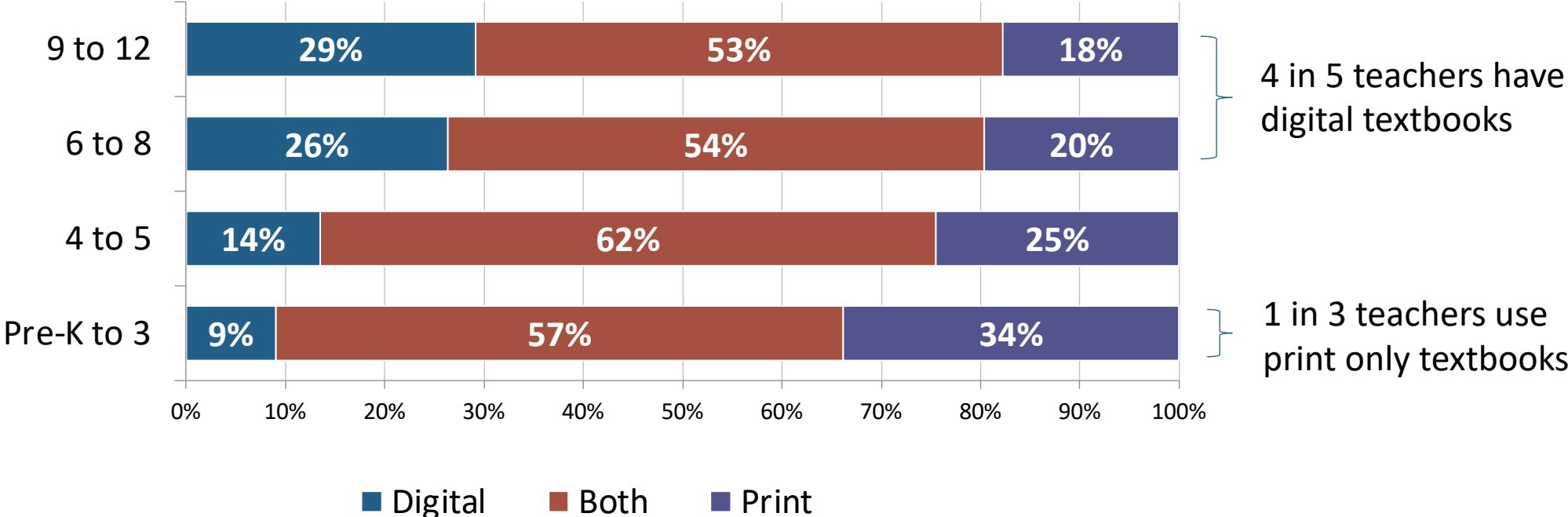
DIGITAL MATERIALS FOR STUDENTS

DIGITAL MATERIALS FOR STUDENTS

Survey asked teachers about their use and desire for multiple student-focused digital materials:

Clickers or Polling Devices	Educational video games	Free Online Instructional Videos	Online or virtual Labs	Publisher-Provided Instructional Videos	Publisher-Provided Mobile or Tablet Application	SMART Boards	Student Tablets or Laptops

LAPTOPS AND FREE ONLINE VIDEOS ARE UNIVERSAL

Digital Student Materials Used Monthly

Clickers or Polling Devices — 16%
Educational video games — 68%
Free Online Instructional Videos — 90%
Online or virtual Labs — 42%
Publisher-Provided Instructional Videos — 44%
Publisher-Provided Mobile or Tablet App — 29%
SMART Boards — 57%
Student Tablets or Laptops — 96%

Rare ← → Universal

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20
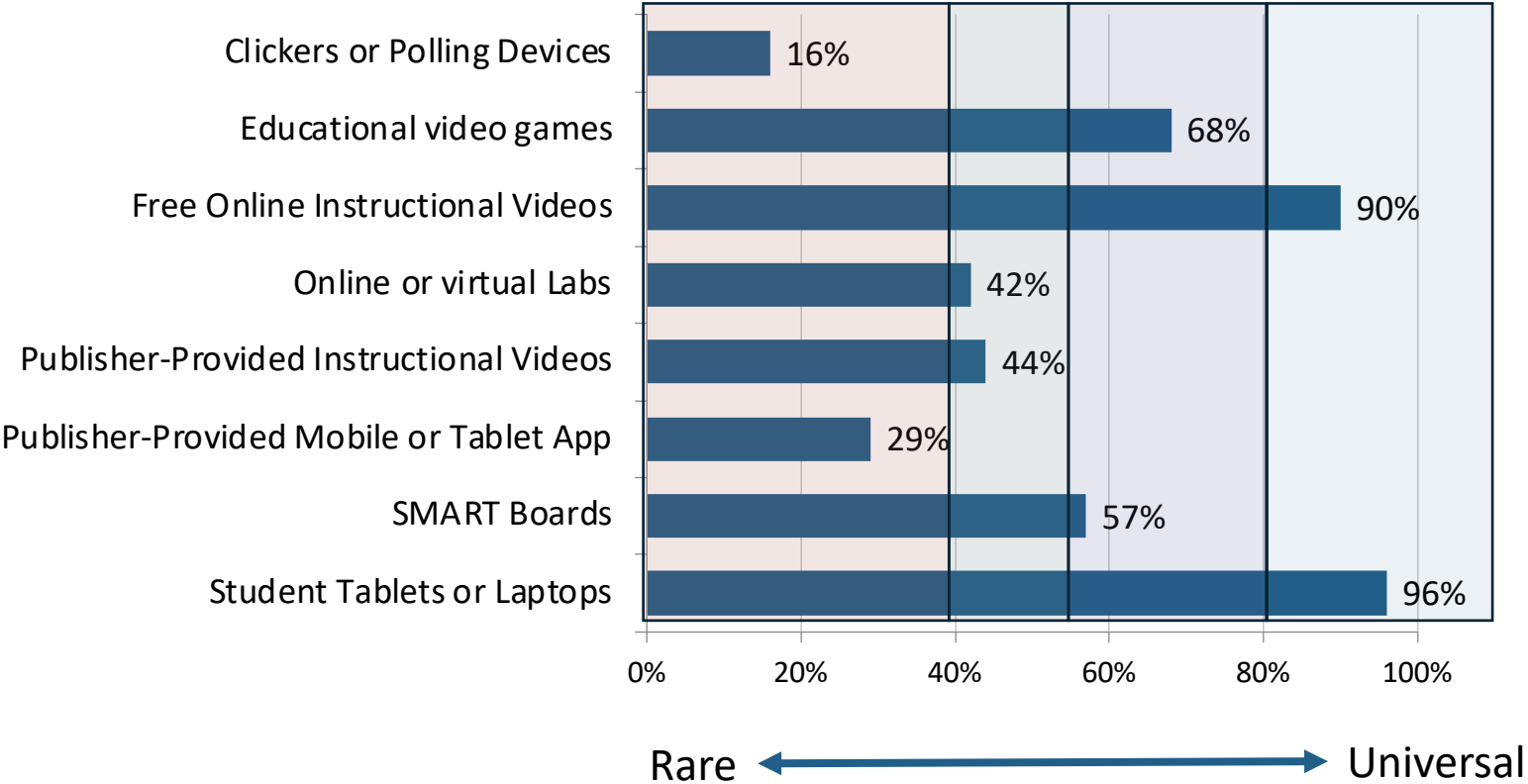
SOME DIGITAL MATERIALS ARE LESS COMMON IN HIGHER GRADES

Digital Student Materials Used Monthly by Grade Level
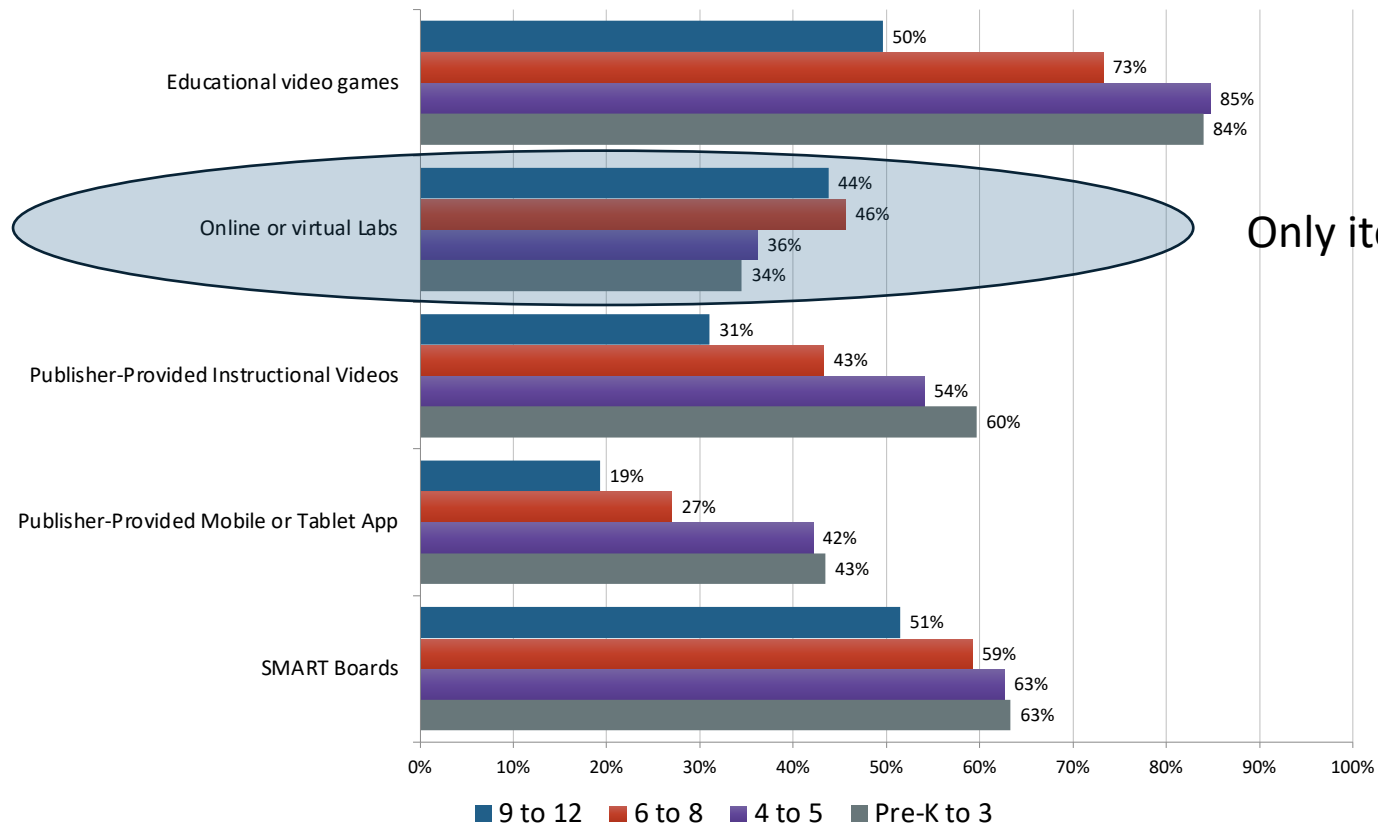
Only item more common in higher grades

Clickers, Free online instructional videos, and student tablets or laptops are used equally across grades

MANY TEACHERS WOULD USE MORE DIGITAL MATERIALS

Percent of Non-Users that Want to Use Digital Material
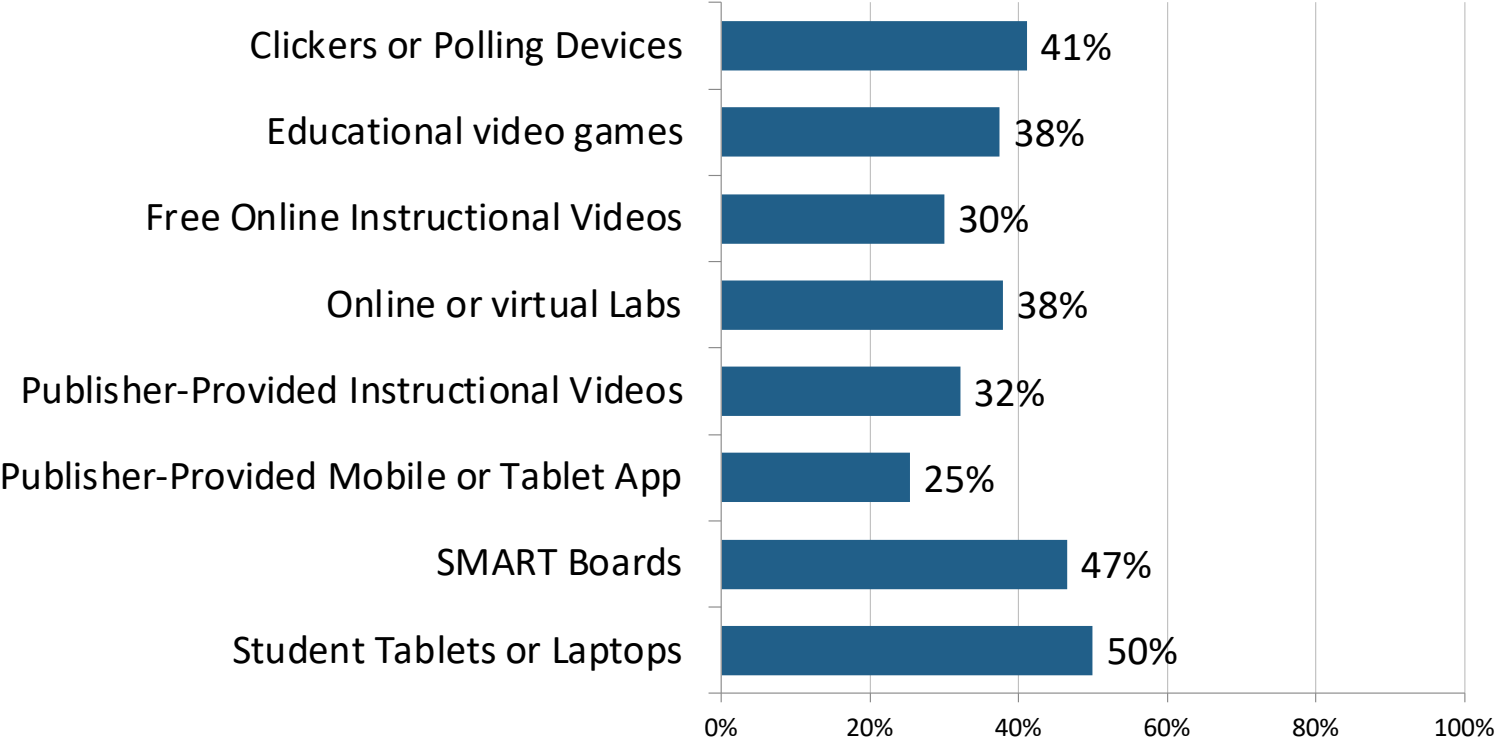
Almost 1 in 3 teachers would want to use any of the student digital materials that they are not currently using

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LOWER USE BUT HIGHER DEMAND FOR VIDEO GAMES IN HIGH SCHOOL

Educational Video Games

Grade Level	Used Monthly	Wants to Use	Does Not Want to Use
9 to 12	50%	24%	27%
6 to 8	73%	15%	12%
4 to 5	85%	6%	9%
Pre-K to 3	84%	5%	11%

■ Used Monthly ■ Wants to Use ■ Does Not Want to Use
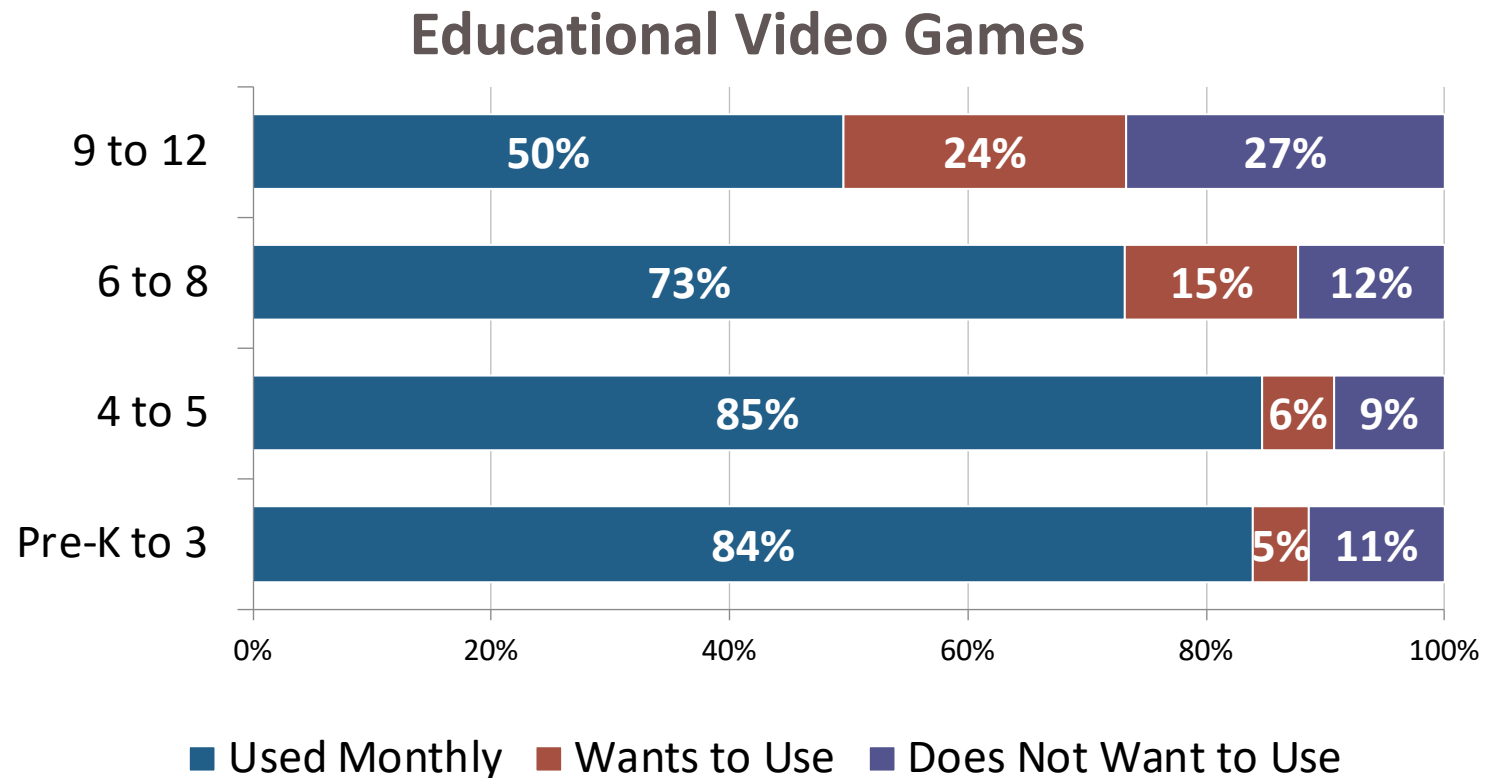
All others were consistent across grade levels

WIDE VARIETY IN USE ACROSS DISCIPLINES

Student Materials Used Monthly by Discipline
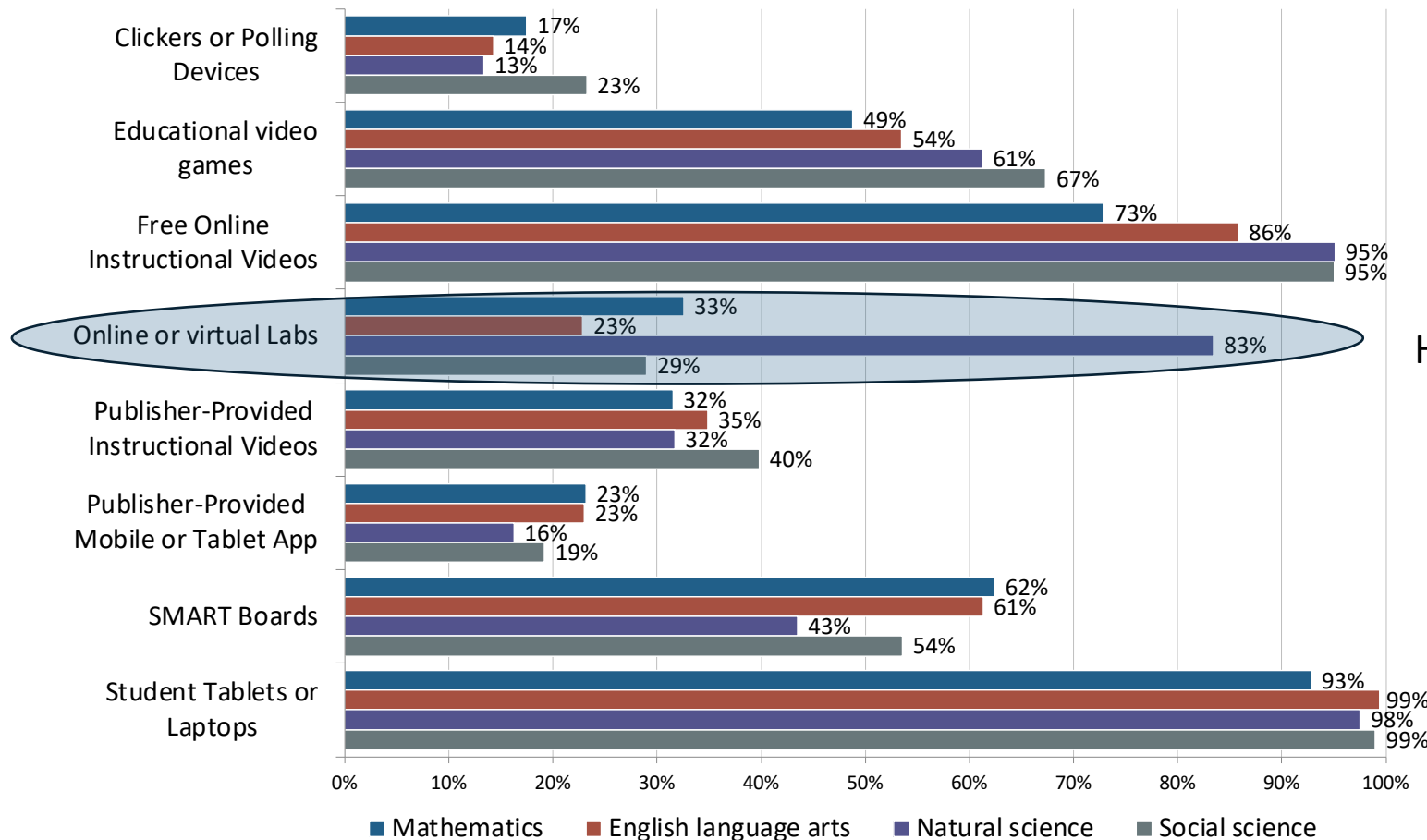
High demand in Natural Science

- Clickers or Polling Devices: Mathematics 17%, English language arts 14%, Natural science 13%, Social science 23%
- Educational video games: Mathematics 49%, English language arts 54%, Natural science 61%, Social science 67%
- Free Online Instructional Videos: Mathematics 73%, English language arts 86%, Natural science 95%, Social science 95%
- Online or virtual Labs: Mathematics 33%, English language arts 23%, Natural science 83%, Social science 29%
- Publisher-Provided Instructional Videos: Mathematics 32%, English language arts 35%, Natural science 32%, Social science 40%
- Publisher-Provided Mobile or Tablet App: Mathematics 23%, English language arts 23%, Natural science 16%, Social science 19%
- SMART Boards: Mathematics 62%, English language arts 61%, Natural science 43%, Social science 54%
- Student Tablets or Laptops: Mathematics 93%, English language arts 99%, Natural science 98%, Social science 99%

Legend: ■ Mathematics ■ English language arts ■ Natural science ■ Social science
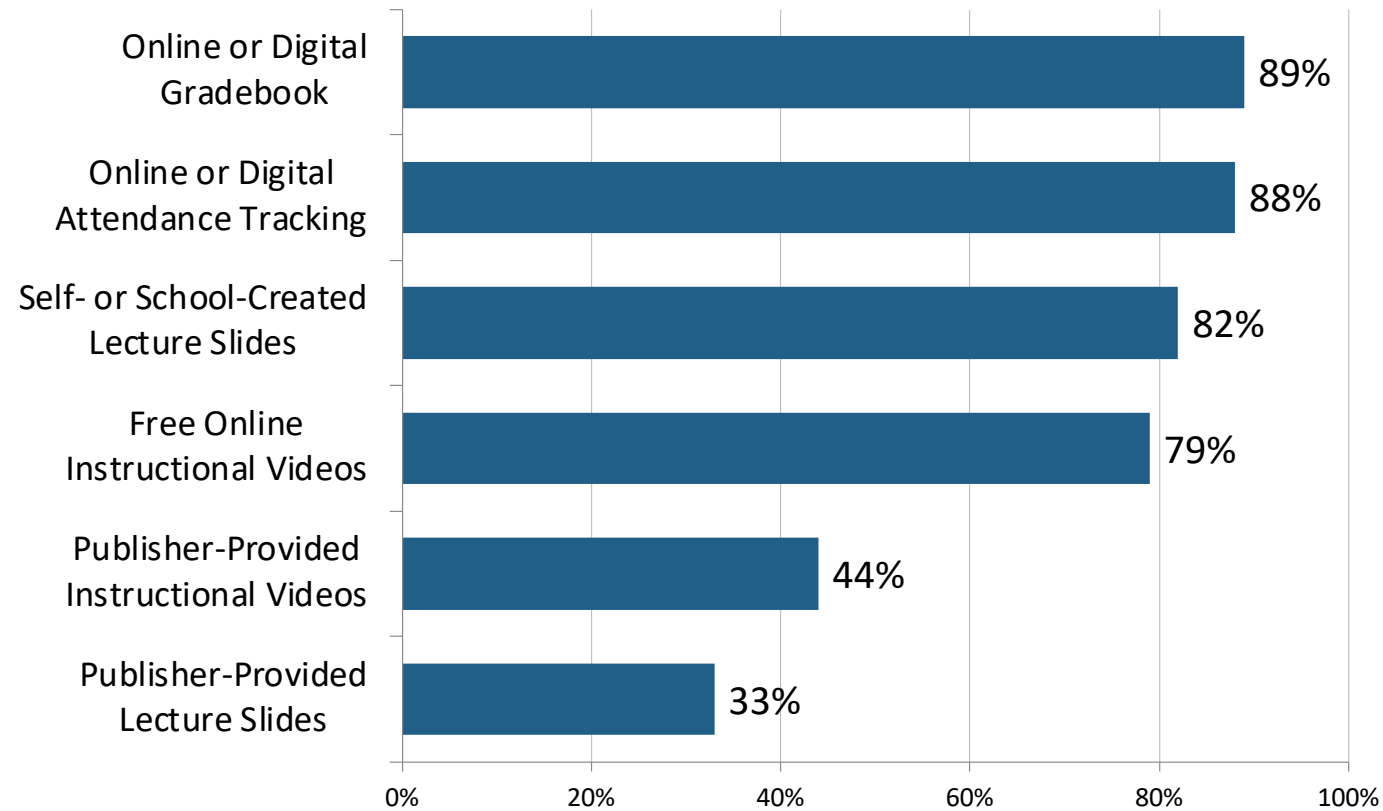
DIGITAL INSTRUCTOR MATERIALS

TEACHERS ALSO REGULARLY USE DIGITAL MATERIALS

Digital Instructor Materials Used Monthly

Material	Percentage
Online or Digital Gradebook	89%
Online or Digital Attendance Tracking	88%
Self- or School-Created Lecture Slides	82%
Free Online Instructional Videos	79%
Publisher-Provided Instructional Videos	44%
Publisher-Provided Lecture Slides	33%

USE DOES VARY BY GRADE LEVEL

Digital Instructor Materials Used Monthly by Grade Level
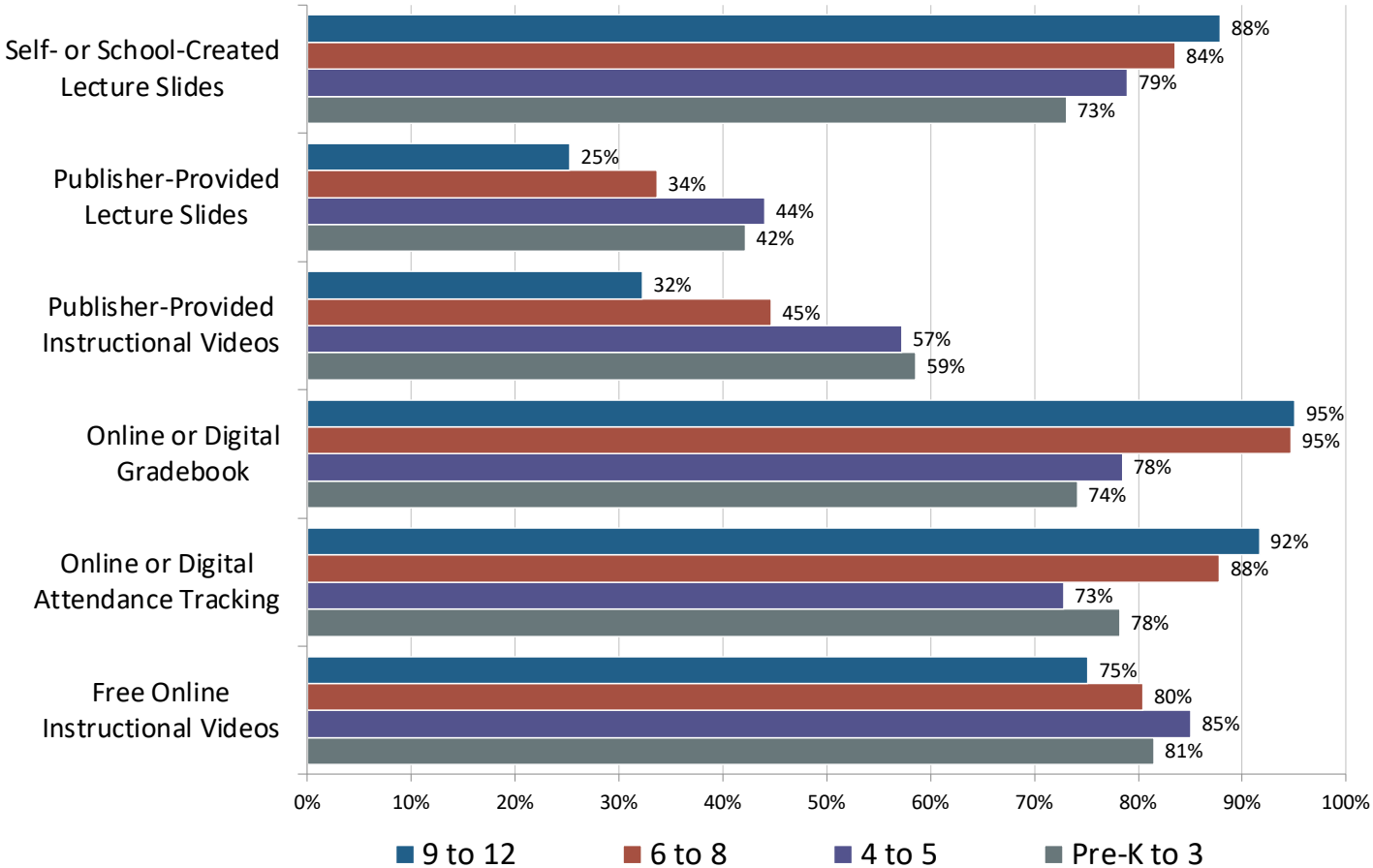
Self- or School-Created Lecture Slides
- 9 to 12: 88%
- 6 to 8: 84%
- 4 to 5: 79%
- Pre-K to 3: 73%

More use in higher grades

Publisher-Provided Lecture Slides
- 9 to 12: 25%
- 6 to 8: 34%
- 4 to 5: 44%
- Pre-K to 3: 42%

Lower use across higher grades

Publisher-Provided Instructional Videos
- 9 to 12: 32%
- 6 to 8: 45%
- 4 to 5: 57%
- Pre-K to 3: 59%

Lower use across higher grades

Online or Digital Gradebook
- 9 to 12: 95%
- 6 to 8: 95%
- 4 to 5: 78%
- Pre-K to 3: 74%

More use in higher grades

Online or Digital Attendance Tracking
- 9 to 12: 92%
- 6 to 8: 88%
- 4 to 5: 73%
- Pre-K to 3: 78%

More use in higher grades

Free Online Instructional Videos
- 9 to 12: 75%
- 6 to 8: 80%
- 4 to 5: 85%
- Pre-K to 3: 81%
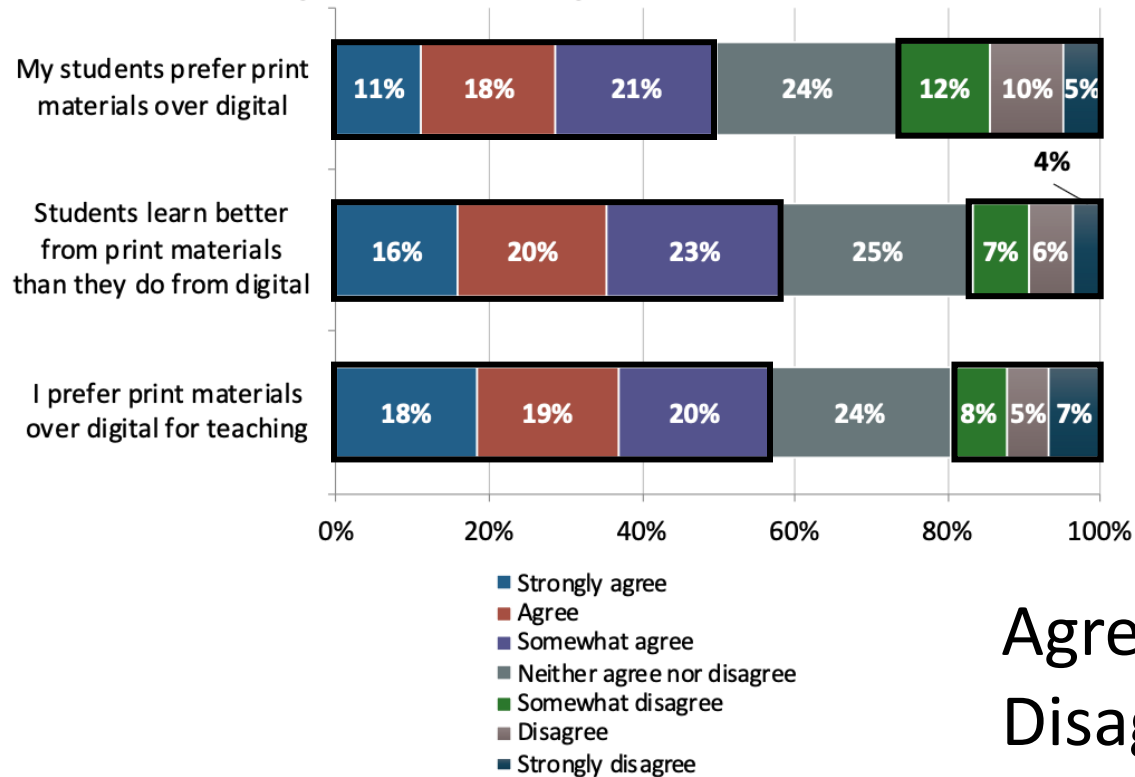
Similar across grades

Legend: ■ 9 to 12 ■ 6 to 8 ■ 4 to 5 ■ Pre-K to 3
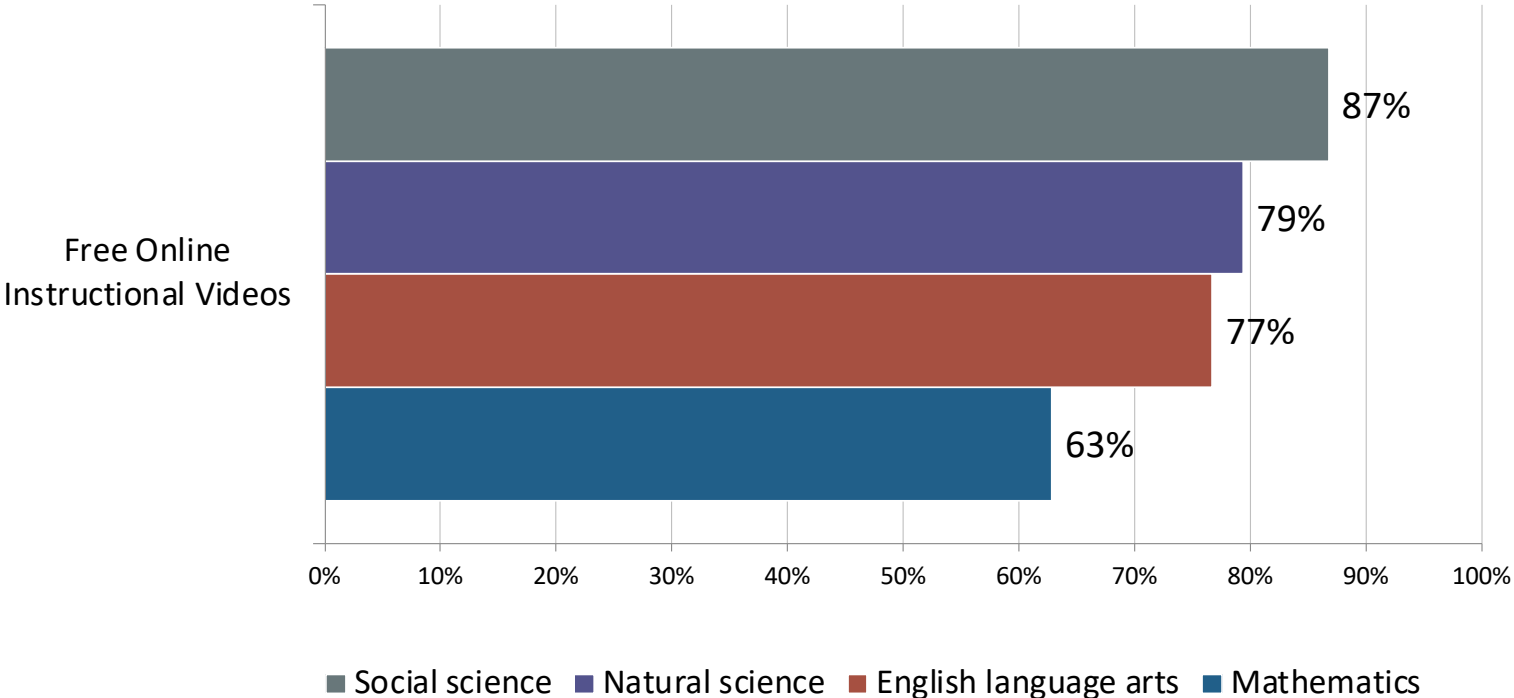
PERCEPTIONS

Teacher preferences lean towards print

Teacher: Agreement with Digital versus Print Statements

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
My students prefer print materials over digital	11%	18%	21%	24%	12%	10%	5%
Students learn better from print materials than they do from digital	16%	20%	23%	25%	7%	6%	4%
I prefer print materials over digital for teaching	18%	19%	20%	24%	8%	5%	7%

Legend:
- ■ Strongly agree
- ■ Agree
- ■ Somewhat agree
- ■ Neither agree nor disagree
- ■ Somewhat disagree
- ■ Disagree
- ■ Strongly disagree

The majority of teachers expressed a preference ("agree" at some level to the statements) for print materials for themselves and for their students.

Agree = Prefers Print
Disagree = Prefers Digital

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Opinions are shared across grades, though not all subjects

Grades

- Generally similar across teachers for all statements

- Younger teachers slightly prefer print

- Teachers of older students report they slightly prefer print more than younger students

Disciplines

- Math teachers are most distinct in preference for print across all three statements

- No differences between other disciplines

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IN THEIR OWN WORDS

FACULTY COMMENTS

DIGITAL THOUGHTS – MIXING PRINT AND DIGITAL

I am trying to pull away from all the devices and window dressing. It's getting in the way of meaningful connection with the human beings in the classroom. They have their faces in a screen far too much as it is. Back to basics.

Digital platforms that require discourse have been most effective for student learning. The discussion prompts that work best are relevant to students, based on current topics of interest, and help student to build academic language by providing scaffolds to assist with discussion.

My goal is to find a way to blend students' love of digital interactive learning with meaningful reinforcement of learning. I often use digital media to help reinforce learning that took place in whole or small group settings, hoping that students will have opportunities to individually put new learning into practice.

I often use the physical version of the lesson first then then students upload their information to the digital version. This ensure that they are able to edit and correct work before it is uploaded.

DIGITAL THOUGHTS – DIGITAL ISSUES

I would love to be able to use all of the resources provided with the materials my district adopted. Unfortunately, the publisher offered zero training for how to use any of the online materials, and they are not intuitive or user-friendly on my district's platform.

My school does not have enough laptops to make them available to classroom use on a regular schedule. I do use video physics for collecting data on iPads that I wrote a grant to purchase.

I would love to utilize more student technology but devices are limited.

I think we need to go back to more old school methods to get away from a computer screen and reteach basic skills of life. I understand digital literacy, but kids today are too "over-connected" online and need the break to learn proper social behaviors and have less digital distractions.

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Material Source Thoughts

I find that if I create my own slides, I can cover all the content at a reasonable pace.

I really like having instructor courseware materials available! They help me to stay focused on the task, as the teacher.

I use a blend of teacher created and publisher created materials. I use Teachers Pay Teachers a lot as supplemental material.

I find most publisher materials too be too static. I like to change up a lot based on student and class needs. I need more fluid materials.

Publisher-created materials are not good. They are written for adults at a student grade level. They are not written for kids.

CONCLUSIONS

Digital Materials in K-12

- Digital textbooks are very common – available by 4 in 5 teachers
- Beyond the textbook, many student-focused digital tools are used regularly
  - Free online videos and student laptops/tablets are almost universal
  - Many teachers report that they would want to use more digital materials
  - Educational videos for higher grades are an unmet need
- Instructor digital materials are regularly used as well
  - Bigger difference in patterns across grade levels than student materials
- Discipline can affect use of digital materials (e.g., video games more common for sciences, online labs more than double use for natural sciences) and strongly affects perceptions of digital

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Thank You!

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