



Ten Trends/Innovations Affecting the Field of Instructional Design and Technology: Opportunities and Challenges

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Purpose of the Presentation:

- Inform you of recent trends in our field
(as indicated by a wide variety of survey data)
- Describe one or two challenges or opportunities
related to each trend

Why is it important to be aware of trends in our field?

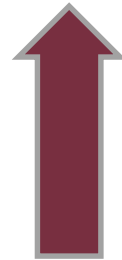
- Because these trends are affecting the type of
work professionals in our field (you!!) are doing
now and will be doing in the future



Ten Trends/Innovations Affecting the Field of Instructional Design and Technology



Ten Trends/Innovations Affecting the Field of Educational Technology



Why not use this term to describe our field?



Educational Technology = Using Media for Instructional Purposes

First half of the twentieth century:

Educational Technology = Audiovisual Materials
films, radio, broadcast television, etc.

Today:

Educational Technology =
computers, the Internet, digital video, etc.



“New” Title for the Field: Instructional Design and Technology

New Definition:

The field of instructional design and technology encompasses the analysis of learning and performance problems, and the design, development, implementation, evaluation and management of instructional and non-instructional processes and resources intended to improve learning and performance in a variety of settings, particularly educational institutions and the workplace. Professionals in the field of instructional design and technology often use systematic instructional design procedures and employ a variety of instructional media to accomplish their goals.

(Reiser, in Reiser & Dempsey, *Trends and Issues in Instructional Design and Technology*, 2018)



Definition Emphasizes Three Key Ideas

1. Instructional Design and Technology involves:
the systematic design of instruction

The field of instructional design and technology encompasses the **analysis** of learning and performance problems, and the **design, development, implementation, evaluation** and management of instructional and non-instructional processes and resources intended to improve learning and performance in a variety of settings, particularly educational institutions and the workplace. Professionals in the field of instructional design and technology often use **systematic instructional design procedures** and employ a variety of instructional media to accomplish their goals.

(Reiser, in Reiser & Dempsey, *Trends and Issues in Instructional Design and Technology*, 2018)



Definition Emphasizes Three Key Ideas

2. Instructional Design and Technology involves: using media to enhance learning

The field of instructional design and technology encompasses the analysis of learning and performance problems, and the design, development, implementation, evaluation and management of instructional and non-instructional processes and resources intended to improve learning and performance in a variety of settings, particularly educational institutions and the workplace. Professionals in the field of instructional design and technology often use systematic instructional design procedures and **employ a variety of instructional media** to accomplish their goals.

(Reiser, in Reiser & Dempsey, *Trends and Issues in Instructional Design and Technology*, 2018)



Definition Emphasizes Three Key Ideas

3. Instructional Design and Technology involves: performance improvement

The field of instructional design and technology encompasses the analysis of learning and performance problems, and the design, development, implementation, evaluation and management of instructional and non-instructional processes and resources intended to **improve** learning and **performance in a variety of settings, particularly** educational institutions and **the workplace**. Professionals in the field of instructional design and technology often use systematic instructional design procedures and employ a variety of instructional media to accomplish their goals.

(Reiser, in Reiser & Dempsey, *Trends and Issues in Instructional Design and Technology*, 2018)



Trend # 1

Performance Improvement

A key concept:

- In workplace settings (e.g., businesses, military, government, healthcare) the goal of instructional design is not just to enhance learning, but also to improve the workplace performance of people
- Improved workplace performance:
people perform their jobs better (e.g. perform with less errors, more quickly, produce higher quality work, etc.)



Trend # 1

Performance Improvement

Another Key Concept:

Oftentimes, methods other than formal instruction are the most effective and efficient means of improving learning and performance. These methods include:

- motivational techniques
- personnel selection
- job and workplace re-design
- performance support
- informal learning
- social media
- educational games
- etc.



Performance Improvement: A Challenge for Instructional Designers

- In each case in which we are trying to improve workplace performance, can we identify the best means of doing so?
- Do we:
 - Design instruction?
 - Use motivational techniques?
 - Provide performance support?
 - Support informal learning?
 - Use social media?
 - Employ educational games?
 - Use some other techniques?



Trend # 2: Performance Support

Definition

Performance support tools are resources that provide the right amount of task guidance and assistance to the user precisely at the moment of need.

(adapted from Rosenberg, in Reiser & Dempsey, 2018)



Performance Support: Some Examples

- GPS systems
- Income tax preparation software
- Tool for generating instructional objectives



Define Student Learning Outcome:

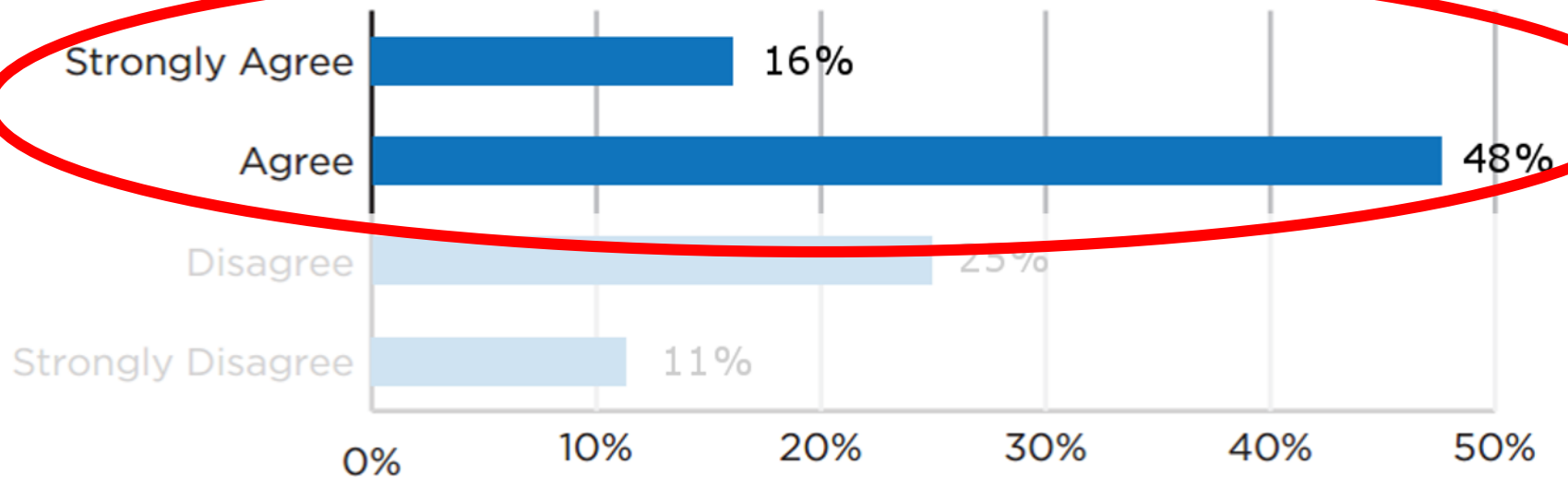
Upon completion of the course of instruction, the student will be able to

choose one:	<u>ANALYSIS</u>	<u>APPLICATION</u>	<u>COMPREHENSION</u>	<u>EVALUATION</u>	<u>KNOWLEDGE</u>	<u>SYNTHESIS</u>
	<input type="radio"/> analyze	<input type="radio"/> apply	<input type="radio"/> classify	<input type="radio"/> assess	<input type="radio"/> cite	<input type="radio"/> arrange
	<input type="radio"/> appraise	<input type="radio"/> choreograph	<input type="radio"/> depict	<input type="radio"/> choose	<input type="radio"/> define	<input type="radio"/> collect
	<input type="radio"/> calculate	<input type="radio"/> compute	<input type="radio"/> describe	<input type="radio"/> decide	<input type="radio"/> identify	<input type="radio"/> combine
	<input type="radio"/> categorize	<input type="radio"/> construct	<input type="radio"/> discuss	<input type="radio"/> defend	<input type="radio"/> indicate	<input type="radio"/> compose
	<input type="radio"/> compare	<input type="radio"/> demonstrate	<input type="radio"/> explain	<input type="radio"/> estimate	<input type="radio"/> label	<input type="radio"/> create
	<input type="radio"/> contrast	<input type="radio"/> dramatize	<input type="radio"/> express	<input type="radio"/> evaluate	<input type="radio"/> list	<input type="radio"/> design
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	<input type="radio"/> debate	<input type="radio"/> generate	<input type="radio"/> paraphrase	<input type="radio"/> judge	<input type="radio"/> name	<input type="radio"/> integrate
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	<input type="radio"/> differentiate	<input type="radio"/> operate	<input type="radio"/> restate	<input type="radio"/> rate	<input type="radio"/> relate	<input type="radio"/> perform
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	<input type="radio"/> experiment	<input type="radio"/> schedule	<input type="radio"/> summarize	<input type="radio"/> score	<input type="radio"/> reproduce	<input type="radio"/> produce
	<input type="radio"/> inspect	<input type="radio"/> sketch	<input type="radio"/> tell	<input type="radio"/> value	<input type="radio"/> select	<input type="radio"/> propose
	<input type="radio"/> solve	<input type="radio"/> use				



Performance Support in Business and Industry

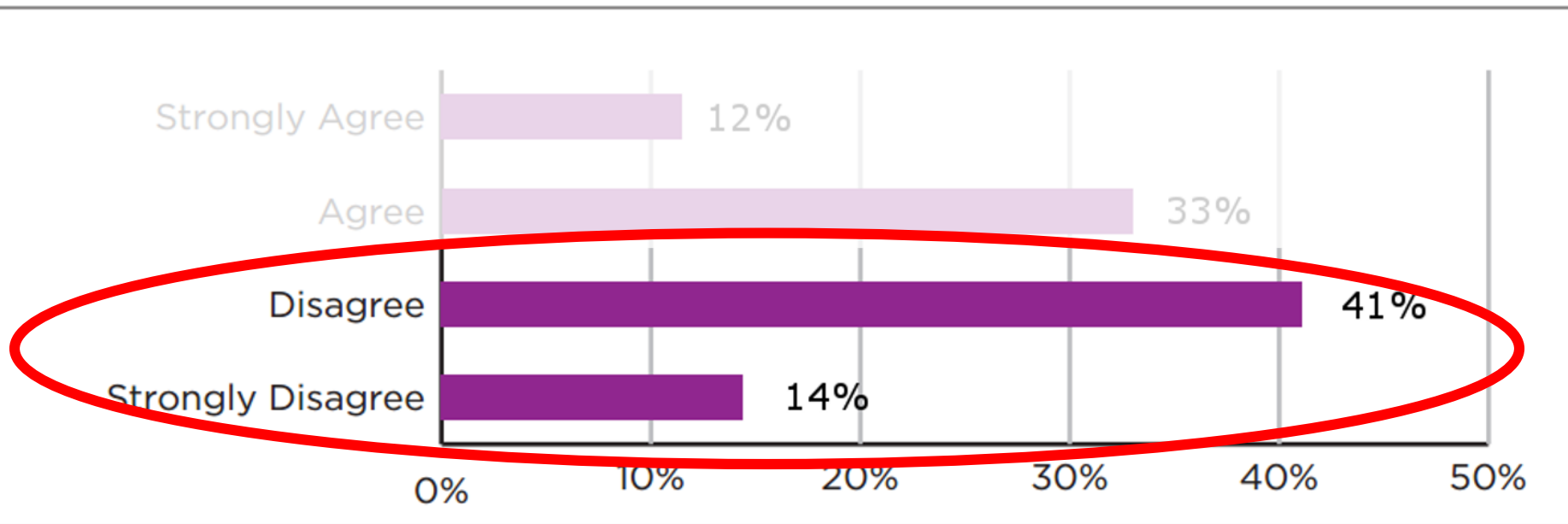
Performance support is strongly sponsored within my organization. Agree or disagree?





Performance Support in Business and Industry

Performance support is effectively managed within my organization. Agree or disagree?





Performance Support: A Challenge for Instructional Designers

How can we improve the design and integration of performance support tools so as to provide more effective and efficient support to learners/workers at the time of need?



Trend #3: Online Learning

The Major Trend of the Past Decade

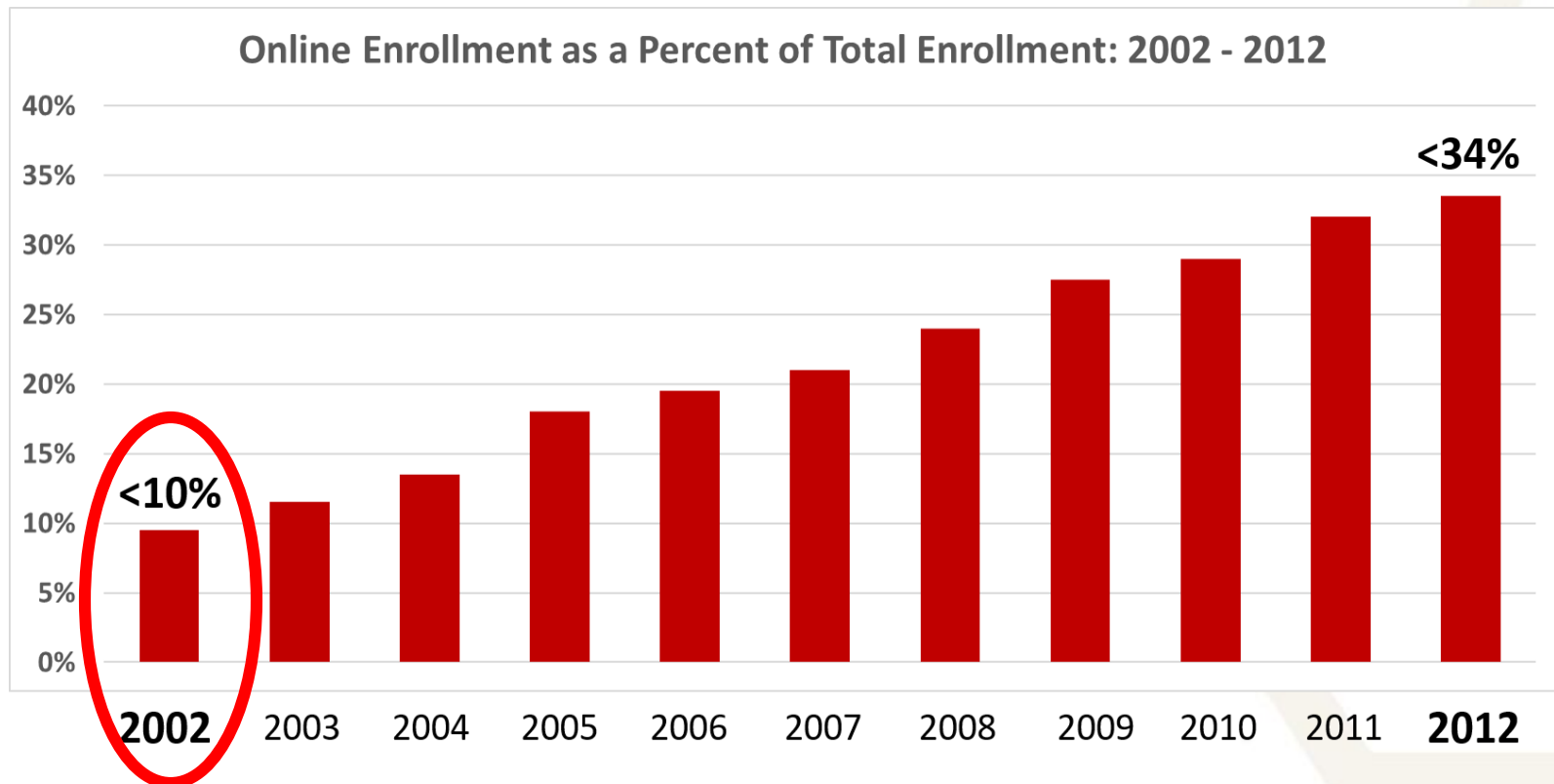
Key Points:

- There has been a growing use of online learning in many sectors of the education and training world.
- This growth is likely to continue for quite awhile!



Online Learning: Growth in Higher Education

Among colleges and universities, the percentage of students taking online courses has greatly increased:

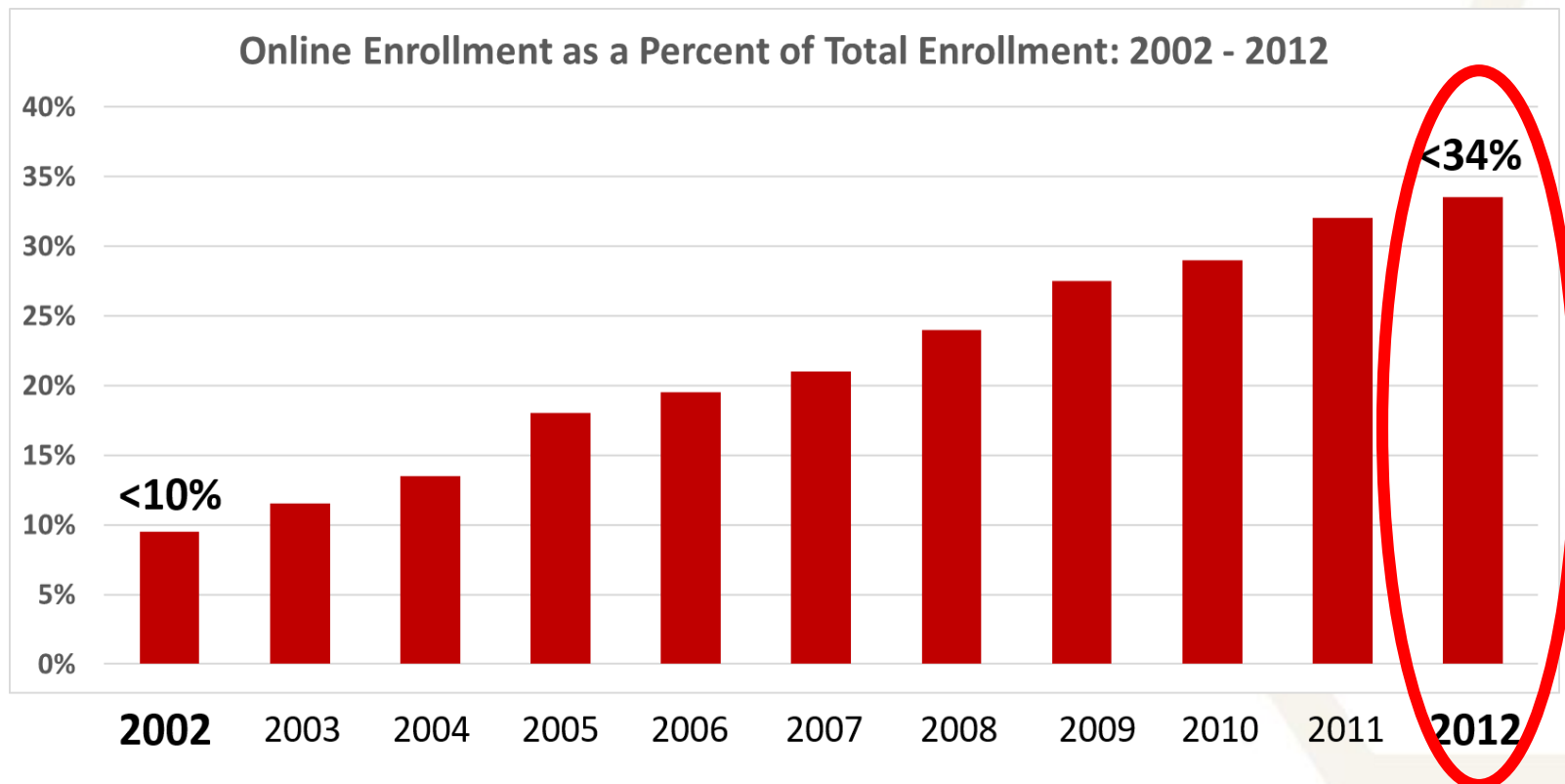


Source: Babson Group, *Grade Change: Tracking online education in the United States 2013*, n = ~2,800



Online Learning: Growth in Higher Education

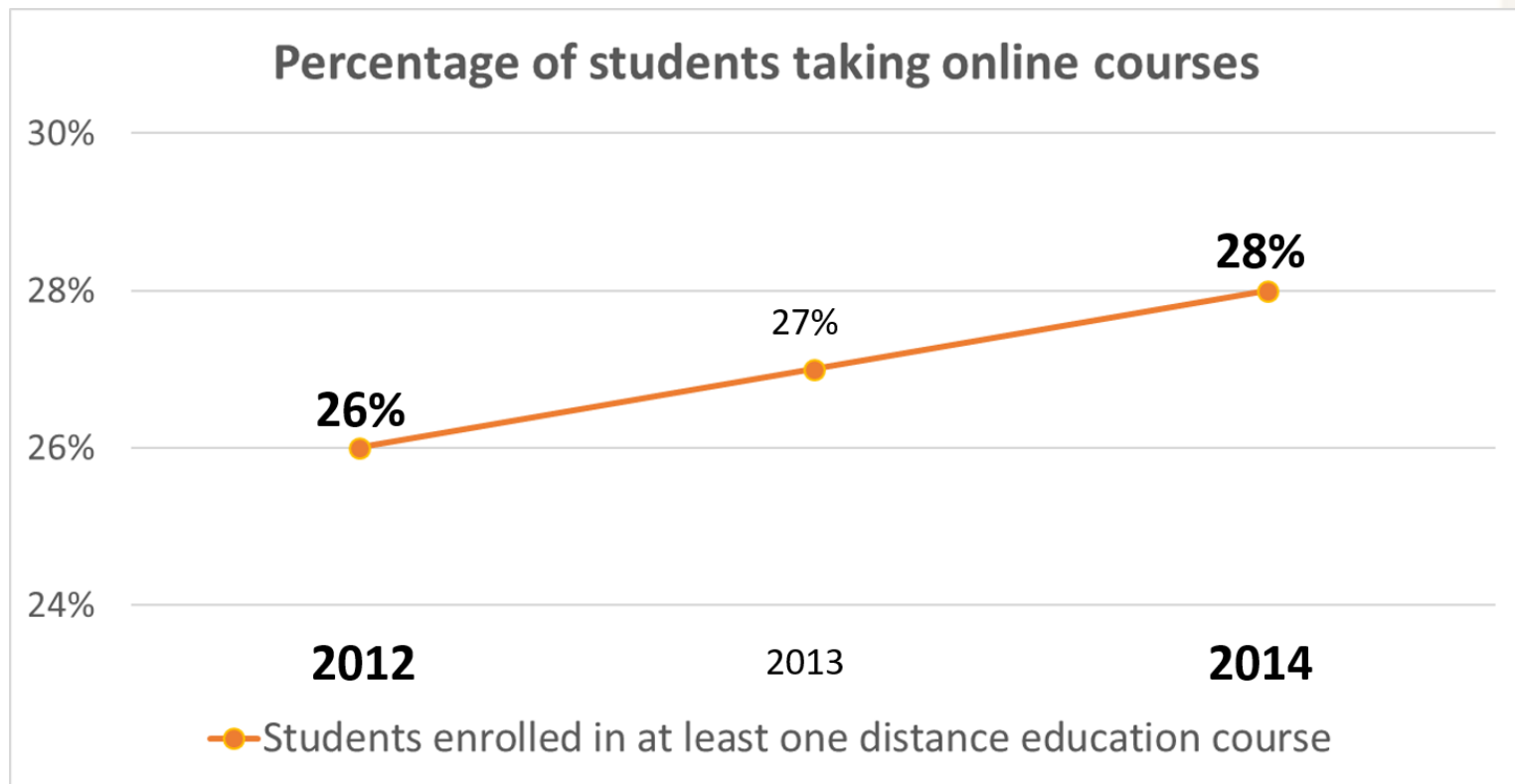
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Online Learning: Growth in Higher Education

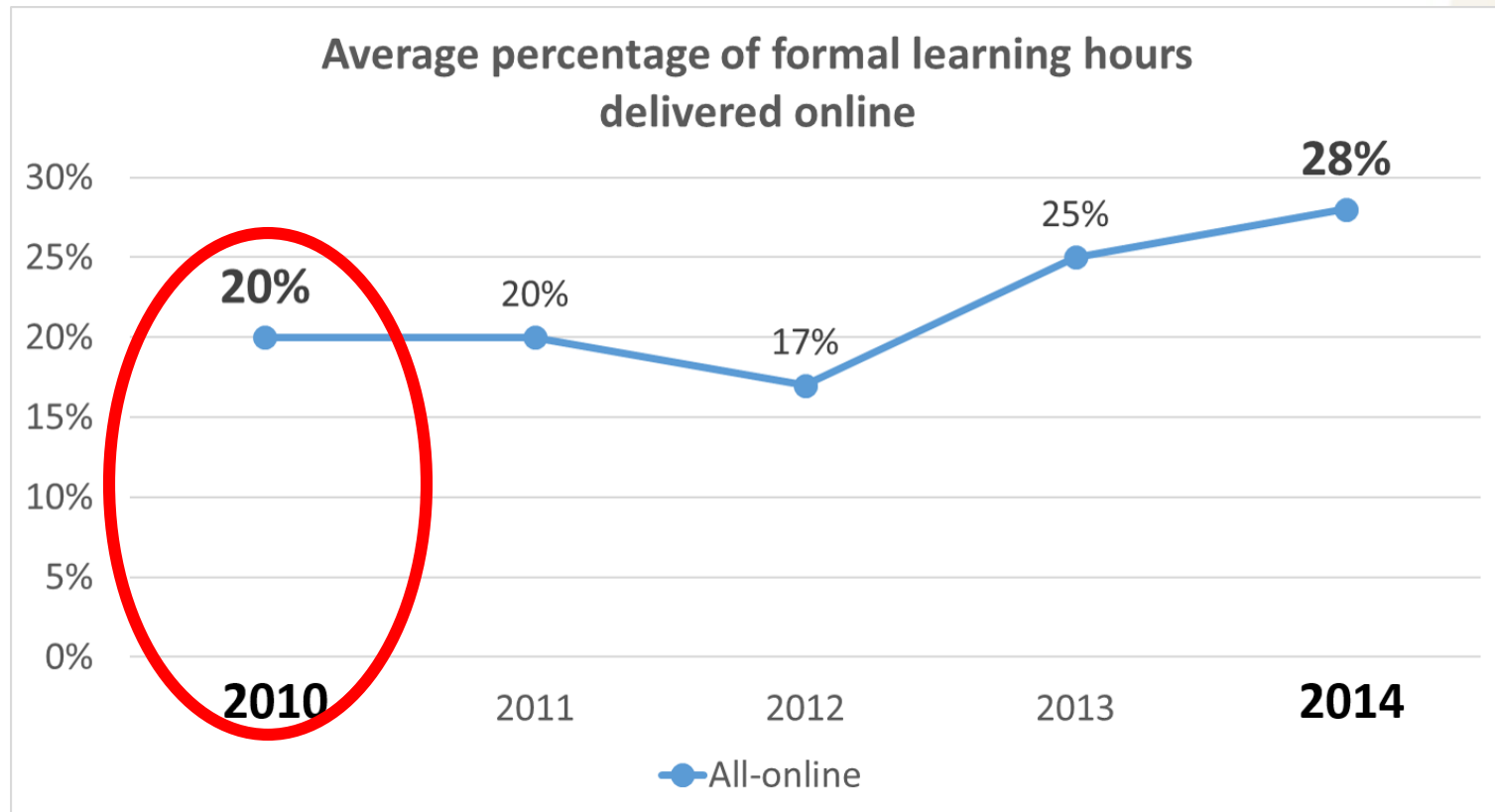


Source: Babson Survey Research Group (2016). *Online Report Card: Tracking Online Education in the United States*



Online Learning: Growth in Business & Industry

Among leading training organizations, the percentage of training delivered online has greatly increased:

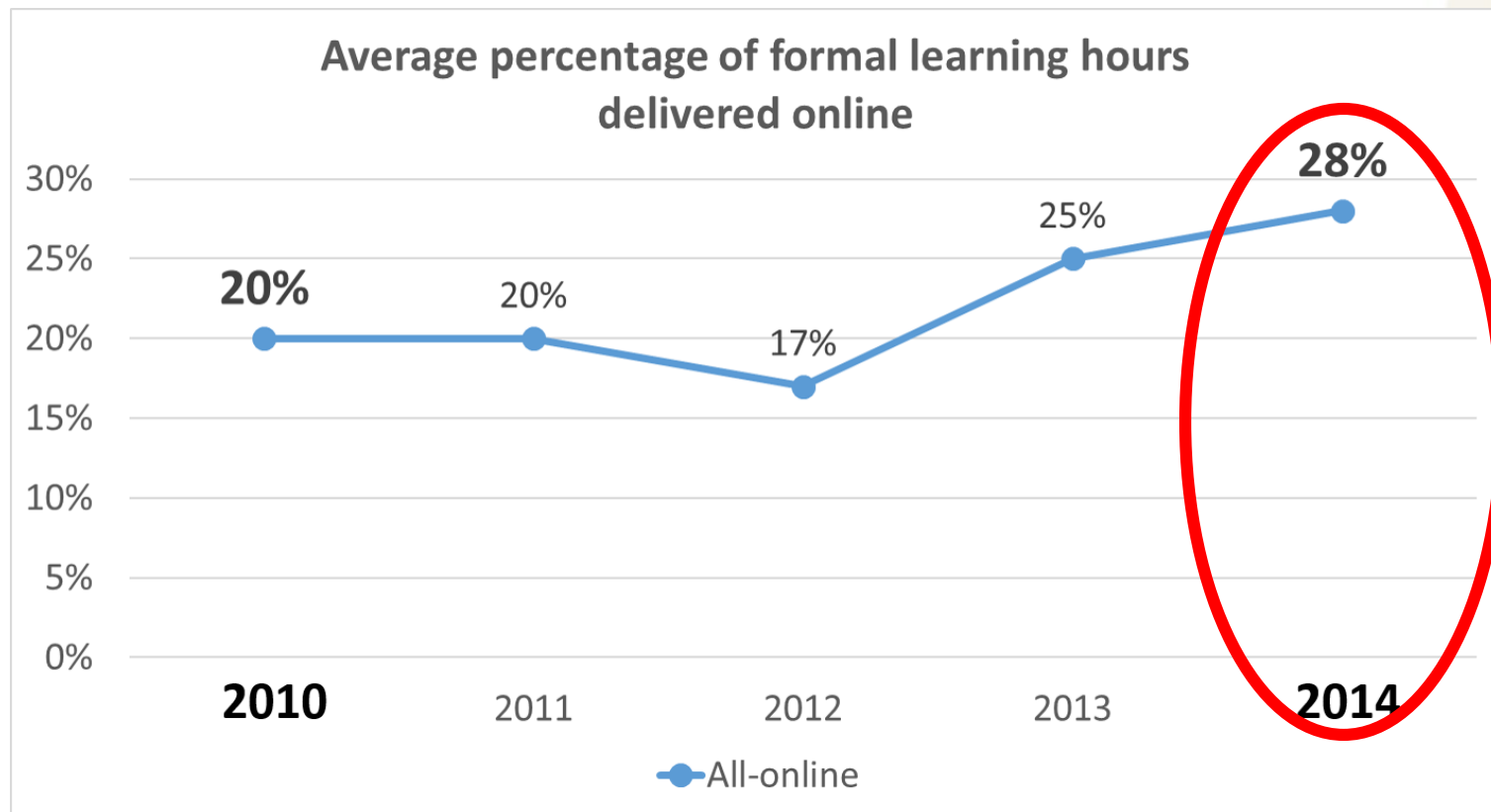


Source: 2015 ASTD State of the Industry Report, n=336



Online Learning: Growth in Business & Industry

Among leading training organizations, the percentage of training delivered online has greatly increased:



Source: 2015 ASTD State of the Industry Report, n=336



Online Learning: Growth in K-12 Schools

Students taking online or blended classes



1.5 million
students¹
2009-2010

80%
INCREASE >>



2.7 million
students*
2013-2014

Sources: 1 Evergreen Education Group: Keeping Pace With K-12 Digital Learning 2010

* Evergreen Education Group: Keeping Pace With K-12 Digital Learning 2015



Online Learning: A Golden Opportunity for Instructional Designers

More online courses = more opportunities for
instructional designers

Why?

Instructional design skills are necessary in order to
prepare effective online courses



Trend #4: Social Media

Definition

Web-based tools that facilitate the ability of everyone (not just educators, IDers, and other “authorities”) to:

- Create and present content
- Share knowledge
- Collaborate with others



Examples of Social Media Tools

- Blogs
- Wikis
- Podcasts
- Social networking sites (e.g., Facebook)
- Media sharing sites (example: YouTube)

To what extent are social media being used in the education and training world?



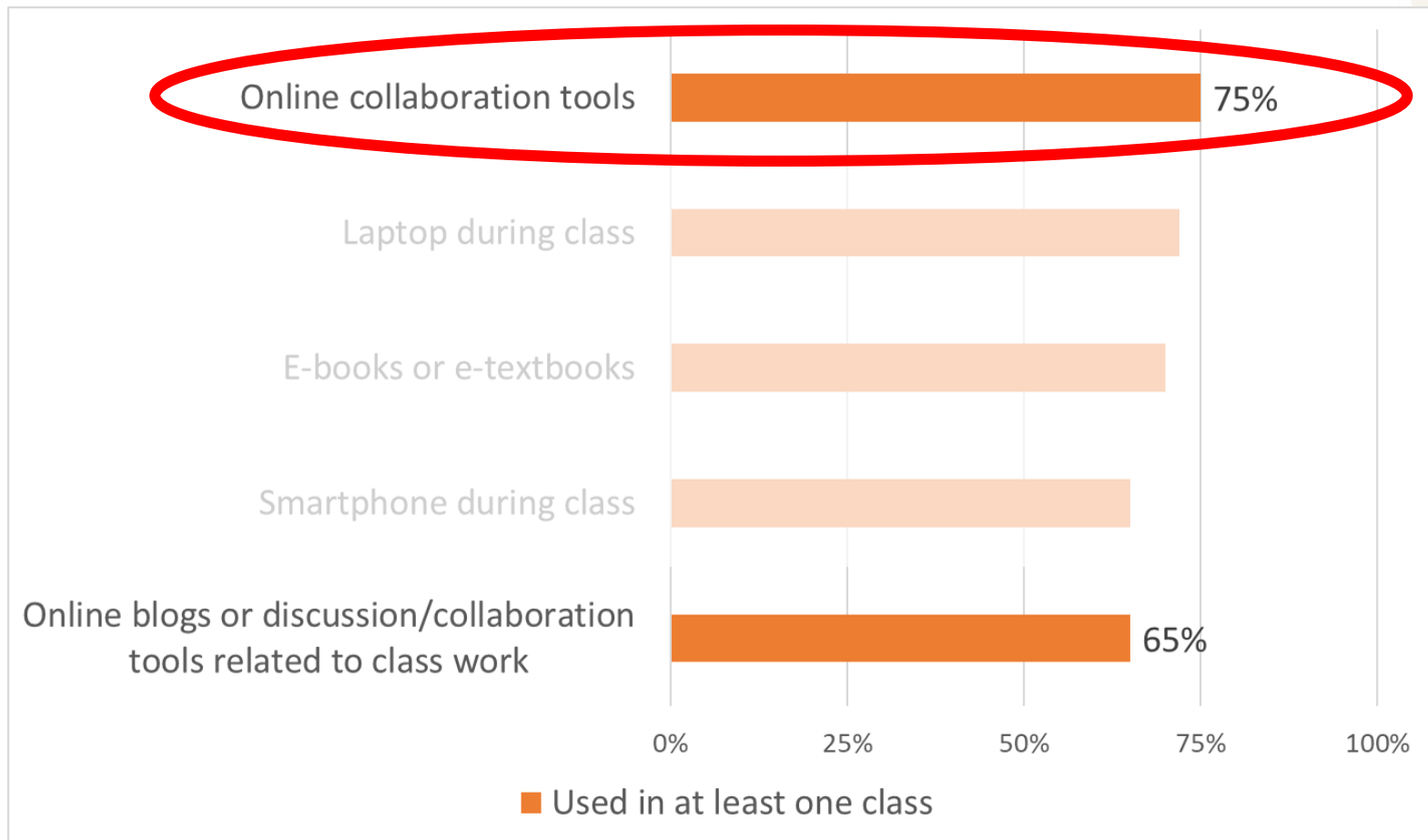
Social Media in Higher Education

% of students using social media for learning in their classes:



Social Media in Higher Education:

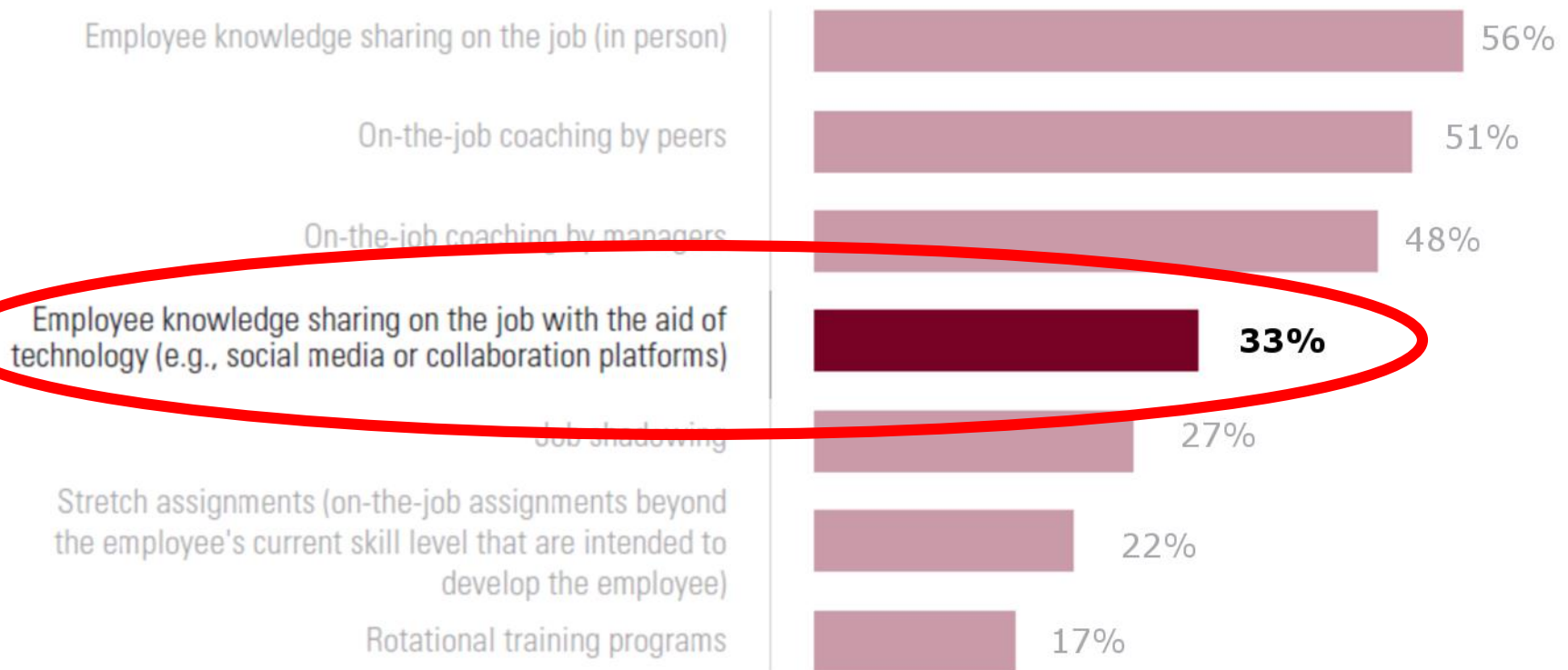
% of students using social media for learning in their classes:





Social Media in Business & Industry

% of organizations using social media tools for on-the-job support:

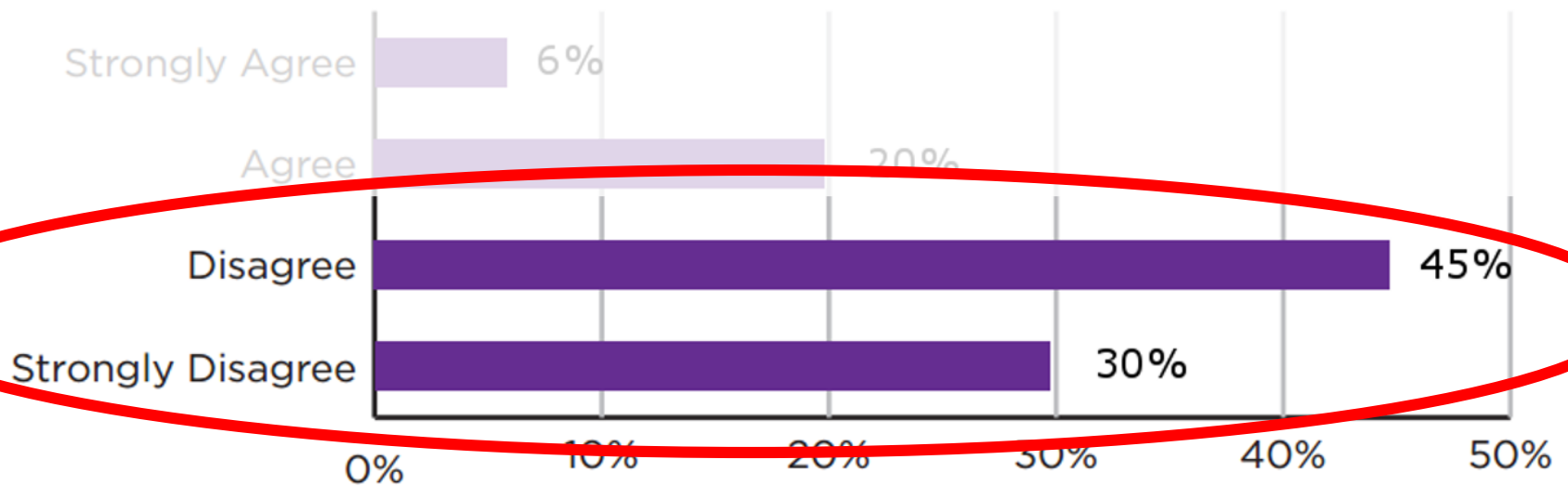


Source: ATD (2016). State of the Industry Report; n = 310 organizations



Social Media in Business and Industry

Social networking and collaboration is effectively managed within my organization. Agree or disagree?





Social Media: A Challenge for Instructional Designers

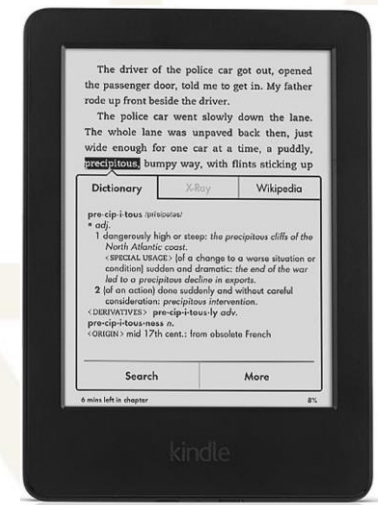
How can we:

- better identify suitable social media tools, and
- effectively incorporate them among the learning opportunities we provide to learners/workers?

Trend #5: Mobile Learning

Definition:

Learning that is supported by mobile devices
(e.g., smartphones, tablets, e-readers, etc.)

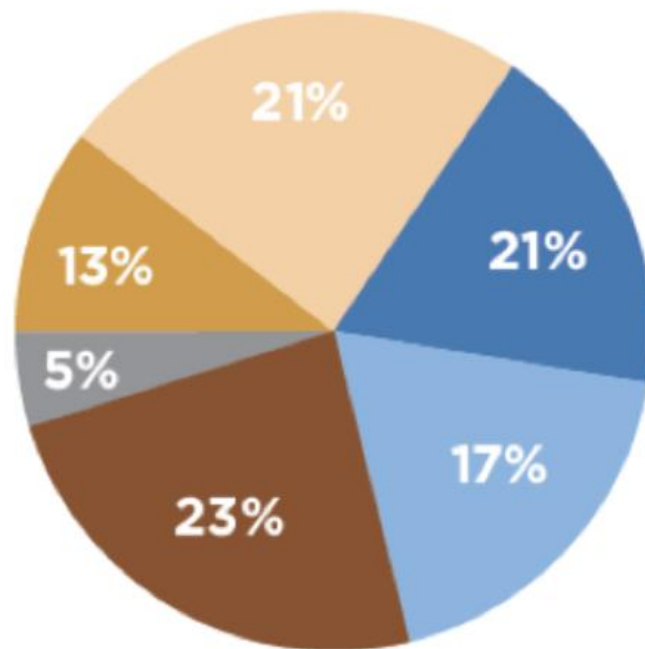


Mobile Learning in Business & Industry

FIGURE 1:

A THIRD OF ORGANIZATIONS HAVE MOBILE LEARNING PROGRAMS

Which statement describes your organization's use of mobile learning?



- We have a formal mobile learning program in operation.
- We deliver learning via mobile devices but do so informally.
- We do not currently have a mobile learning program but plan to implement one in the next 12 months.
- We do not currently have a mobile learning program, but we plan to implement one after the next 12 months.
- We are not using mobile learning and have no plans to pursue it at this time.
- Don't know.

Mobile Learning in Business & Industry

FIGURE 1:

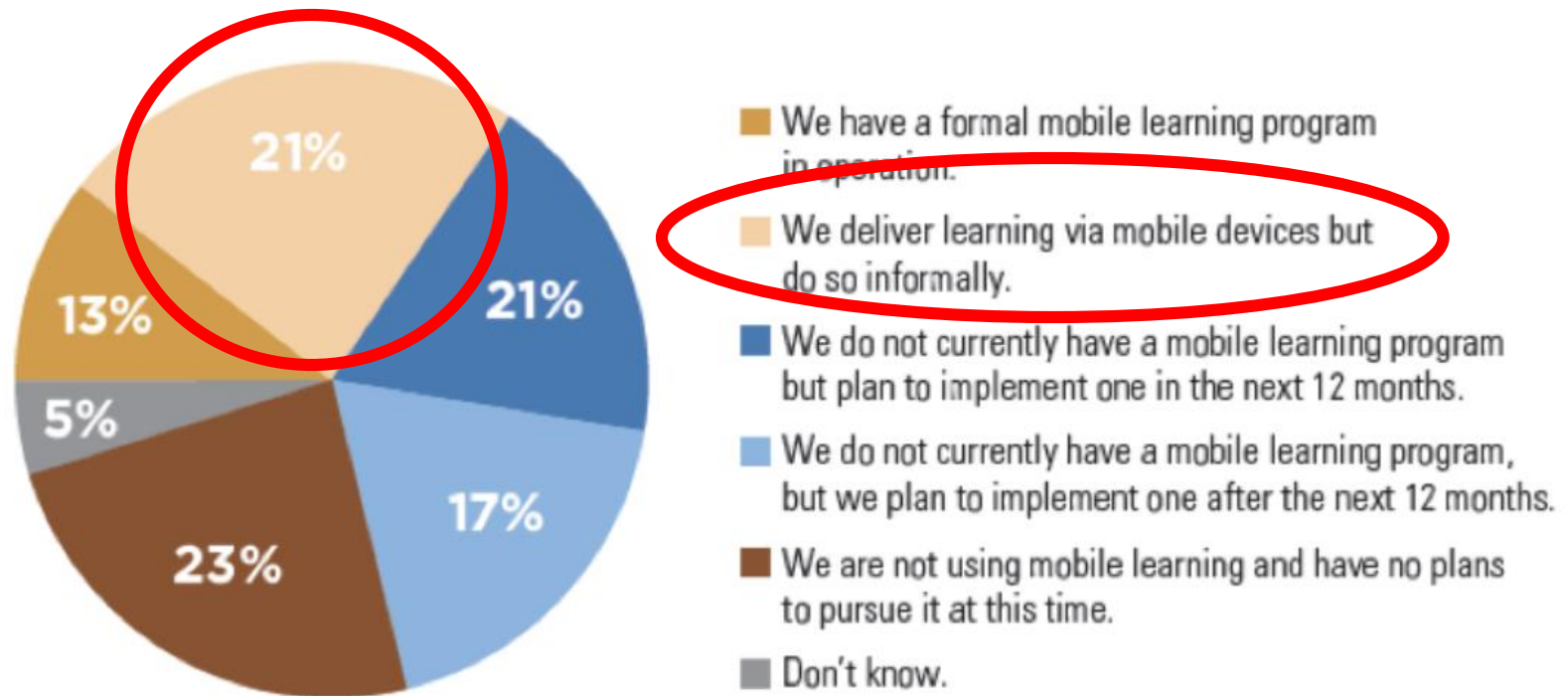
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Mobile Learning in Business & Industry

FIGURE 1:

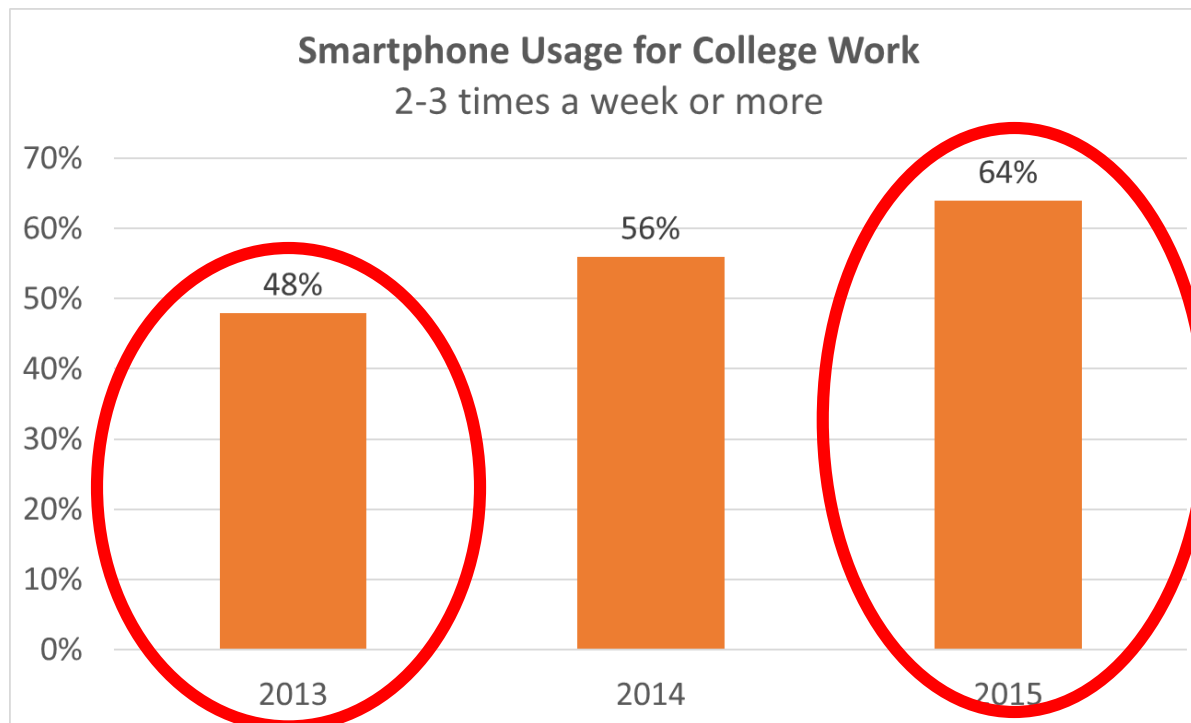
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Mobile Learning in Higher Education

Percentage of college students using smartphones for coursework at least twice per week

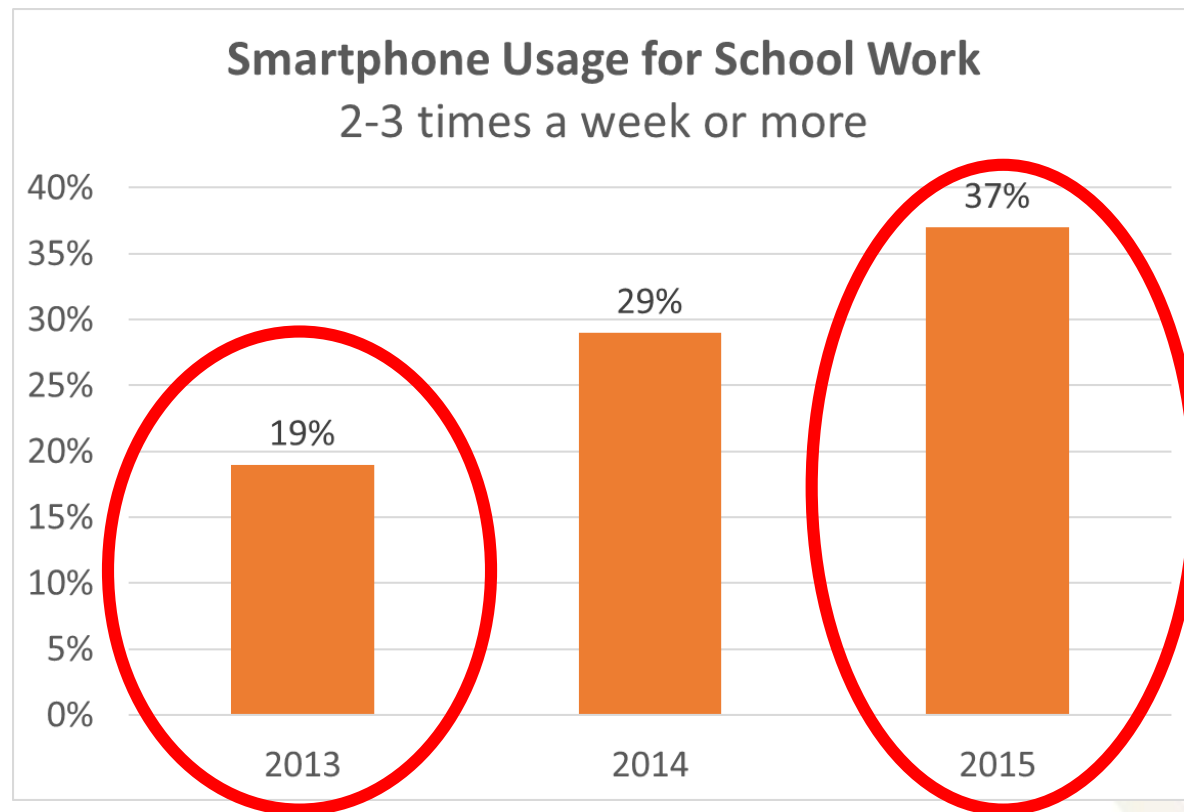


Source: Pearson (2015). Student Mobile Device Survey 2015 – National Report: College Students, n = ~ 1,200



Mobile Learning in K-12 Schools

Percent of grade 4-12 students using smartphones for schoolwork at least twice per week



Source: Pearson (2015). Student Mobile Device survey 2015 – National Report: Students Grades 4-12, n = ~2,300



Mobile Learning in K-12 Schools

Teacher Opinions Regarding Student Use of Mobile Devices for Schoolwork

- Benefits:
 - Increases student engagement in learning (77%)
- Challenges:
 - Potential for distraction (76%)

Source: Project Tomorrow, *Speak Up 2015 National Findings*, 2015, n = ~42,000



Mobile Learning: A Challenge for Instructional Designers

When learners/workers use mobile devices intended to support learning and performance, what can be to done to reduce the distracting influences presented by those devices?



Trend #6: Learning Analytics

Definition:

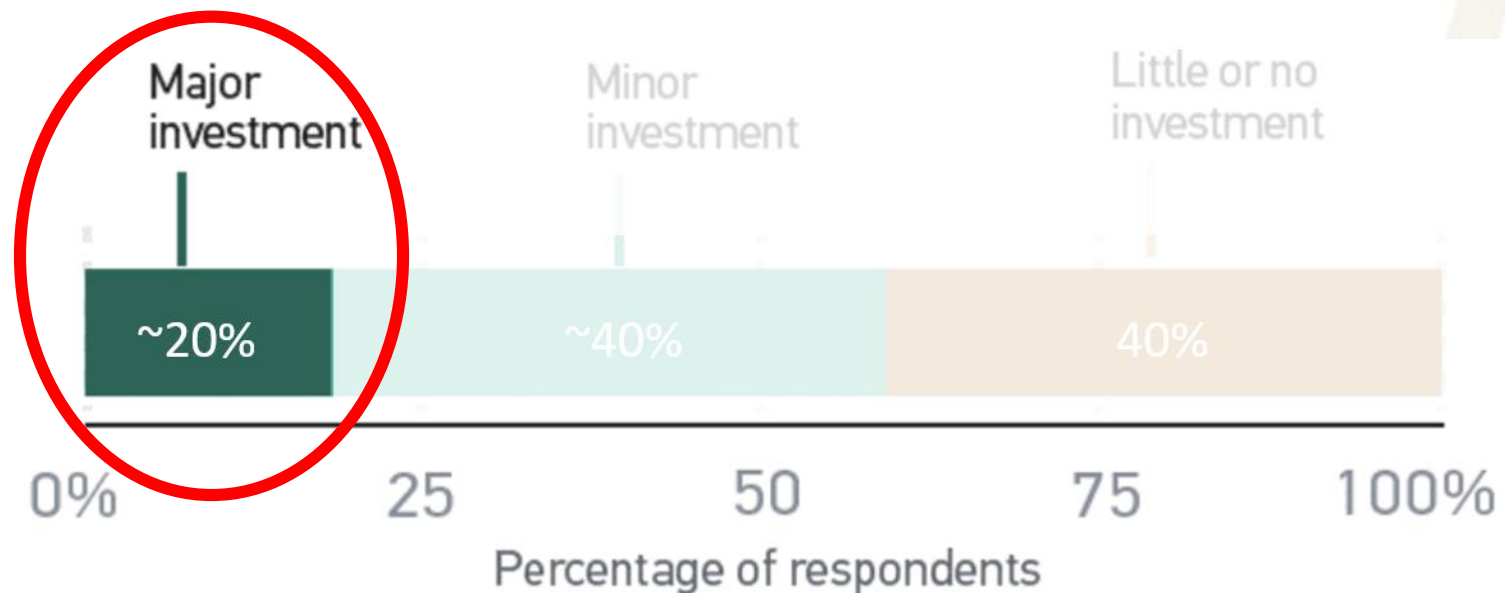
The collection and analysis of data about learners and their learning so as to understand and optimize learning.

Adapted from Society for Learning Analytics Research, 2011



Learning Analytics in Higher Education

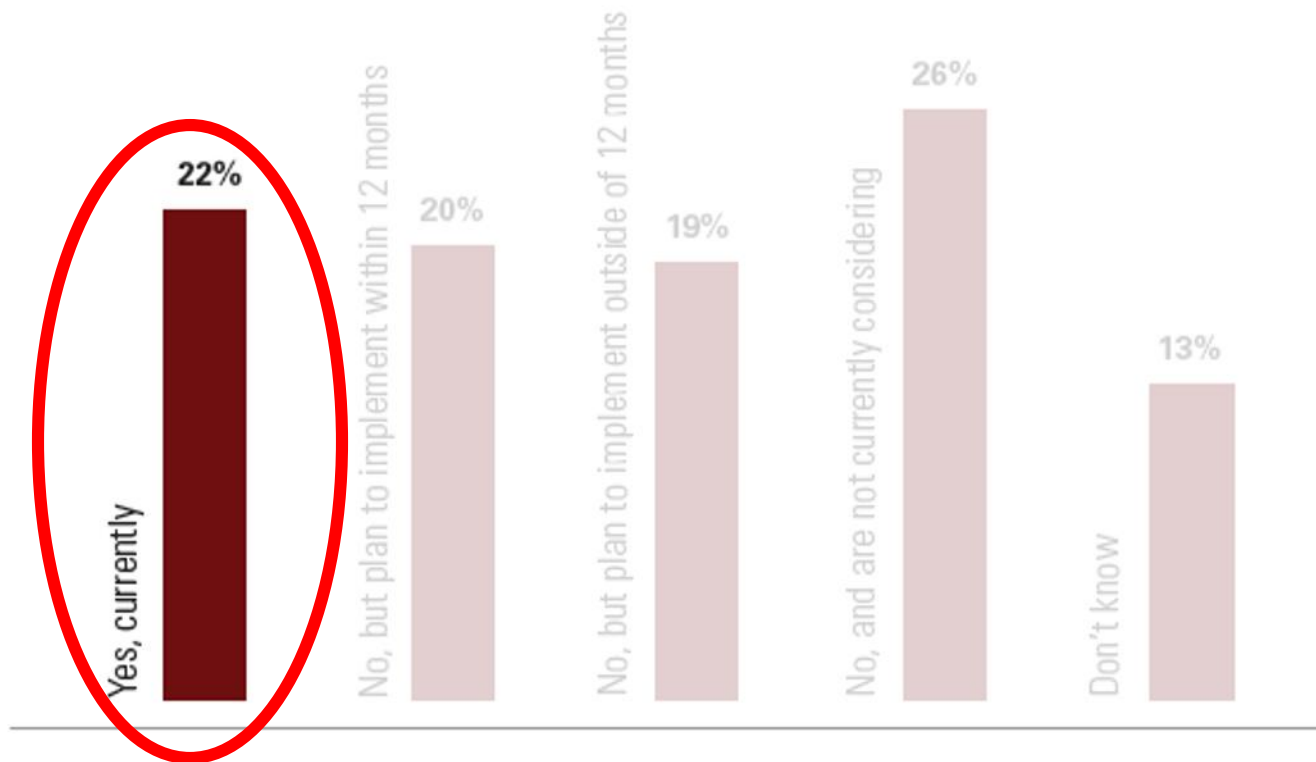
Extent of University Investment in Learning Analytics



Source: ECAR (2016). *Analytics in Higher Education*, n=245 institutions

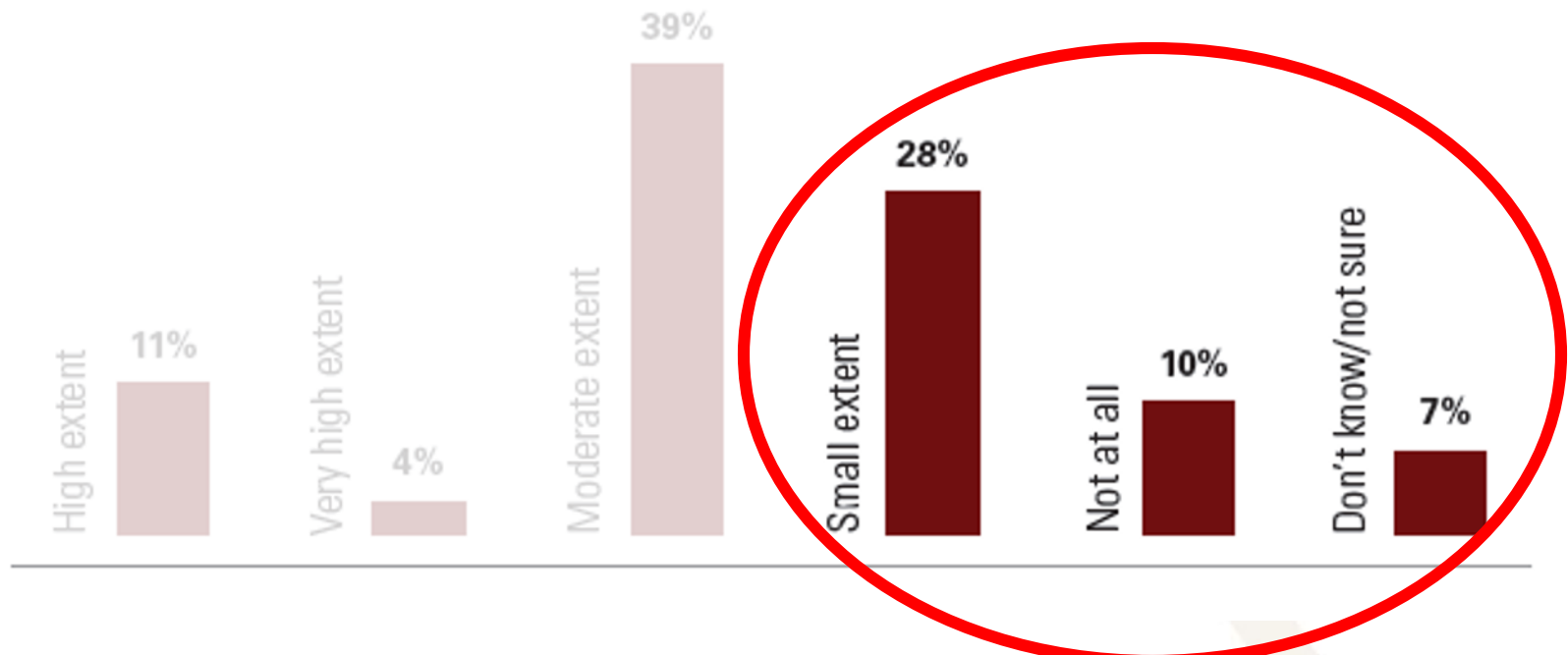
Learning Analytics in Business & Industry

Is your organization currently leveraging learning-related big data?



Learning Analytics in Business & Industry

To what extent is your organization effective at analyzing big data?



Source: ASTD Research, BIG DATA, BETTER LEARNING? 2014, n = ~ 420



Learning Analytics Challenges for Instructional Designers

What types of data about learners and their learning should we be focusing upon?

and

How can we make better use of that data to help improve learning & performance?



Trend # 7: Educational Games

Definition:

Educational games are games explicitly designed for educational purposes. That is, they are designed to facilitate student attainment of specific learning outcomes (i.e. specific skills, knowledge, and/or attitudes).

NEWTON'S
Playground



Educational Games

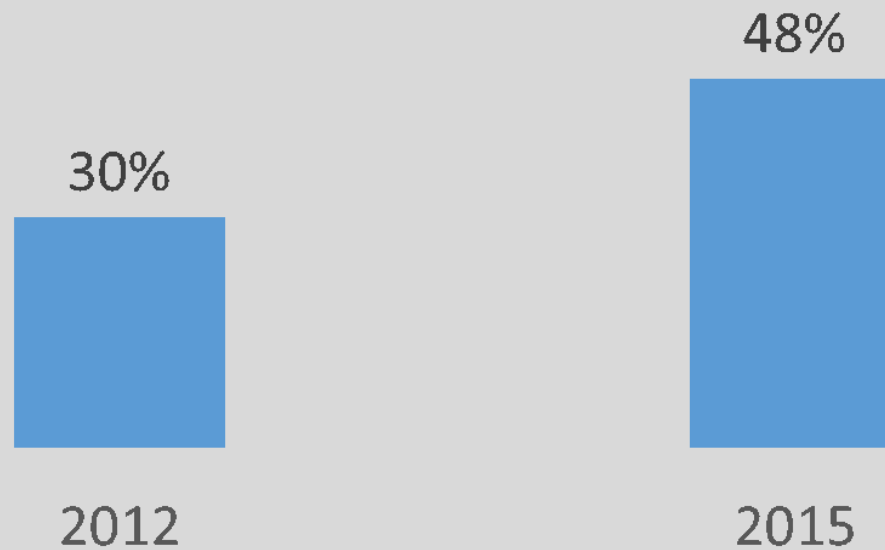
Key features

- Present problem-solving challenges
- Provide clear goals and rules
- Allow high degree of learner control
- Provide ongoing feedback



Educational Games in K-12 Schools

Teacher's use of digital games in the classroom - 2012 vs. 2015

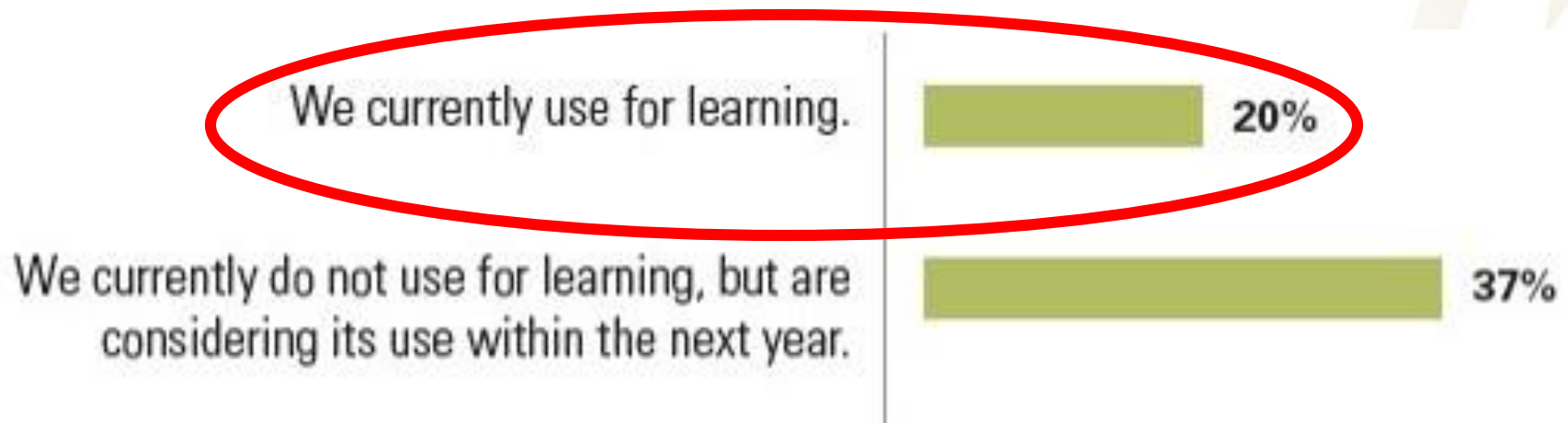


Source: Speak Up (2016). From print to pixel: The role of videos, games, animations and simulations within K-12 education 2016, n(2012) = 53,947; n(2015) = 35,909



Educational Games in Business and Industry

Percentage of organizations using educational games to facilitate learning

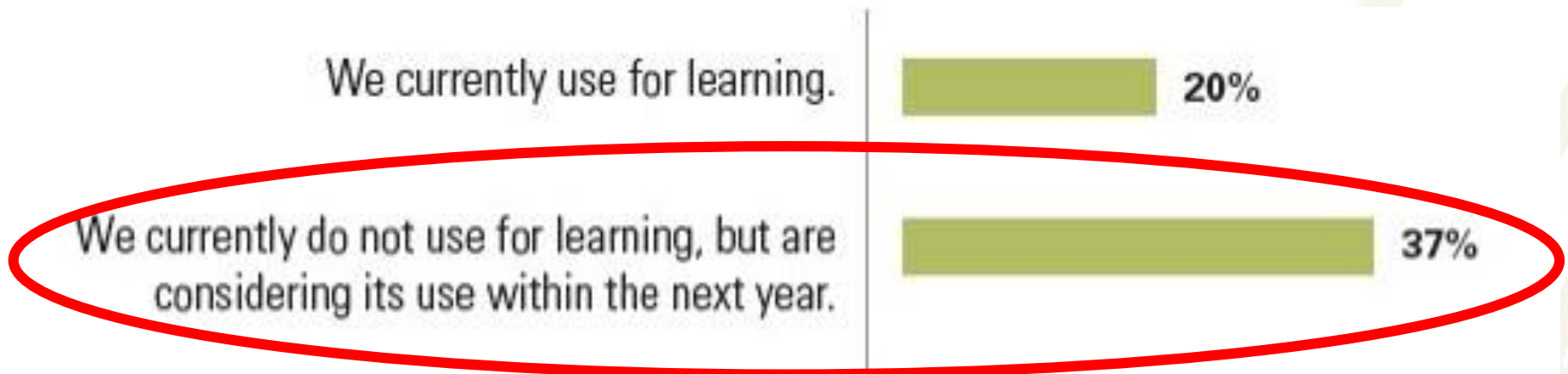


Source: ASTD Report: Playing to win: Gamification and serious games in organizational learning, 2014, n = 551



Educational Games in Business and Industry

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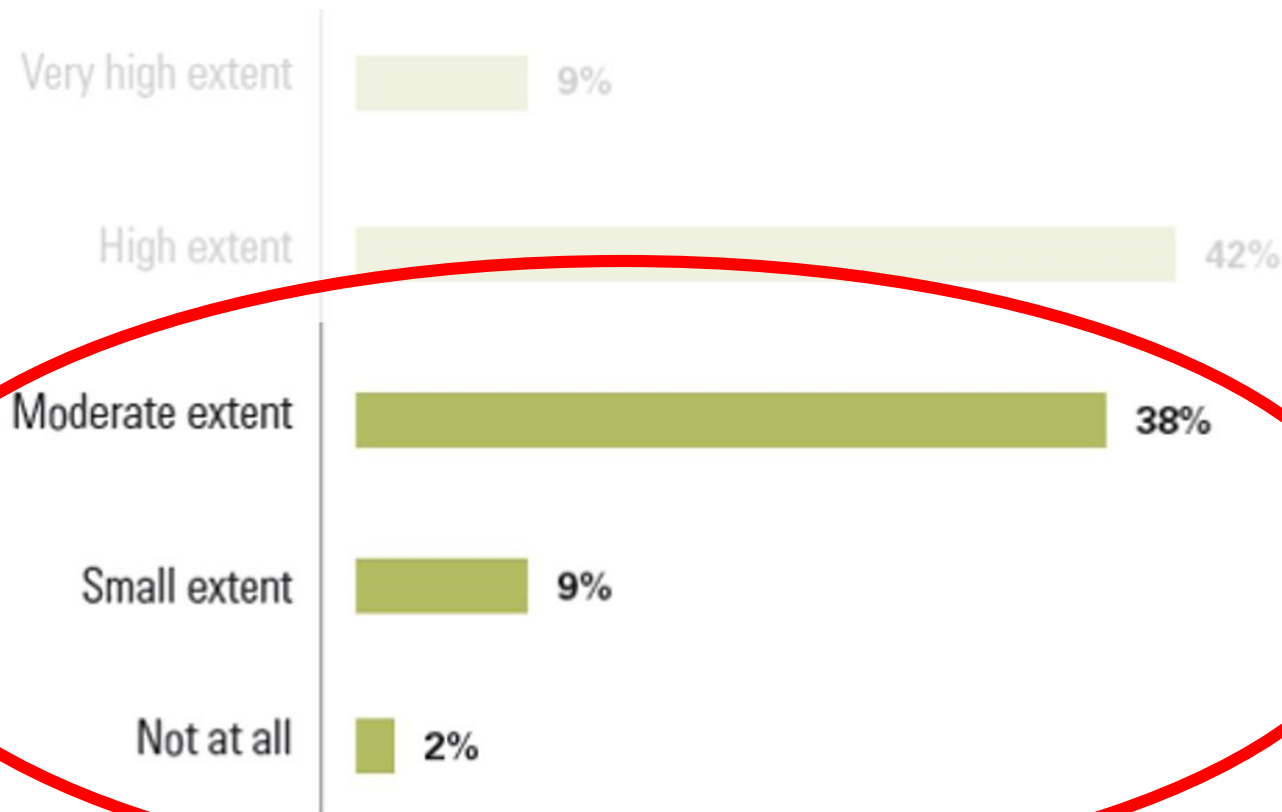


Source: ASTD Report: Playing to win: Gamification and serious games in organizational learning, 2014, n = 551



Educational Games in Business and Industry

Perceived extent of effectiveness of educational games





Educational Games: A Challenge for Instructional Designers

How can we design educational games that will facilitate the transfer of skills from the game environment to 'real world' tasks?



Trend # 8:

Massive Open Online Courses (MOOCs)

Definition:

Free online courses/learning programs, usually offered by a institution of higher education, that are designed for the participation of large numbers of geographically dispersed students



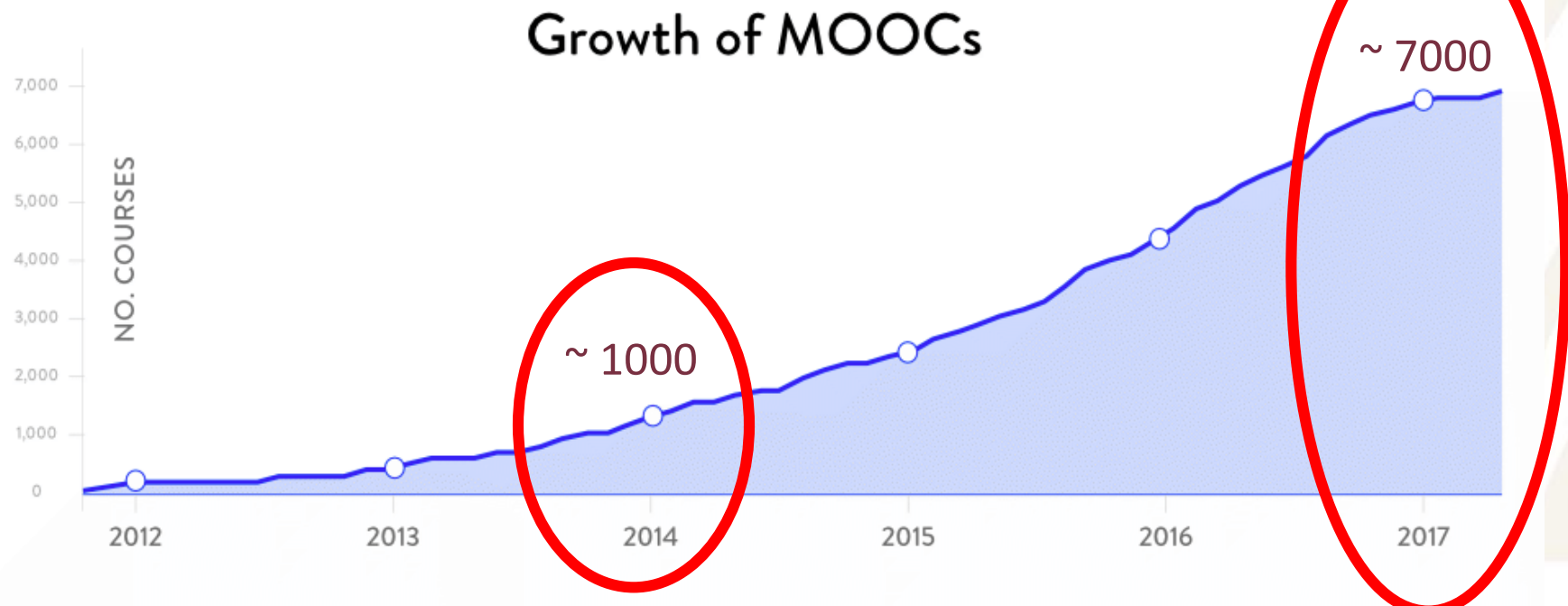
Massive Open Online Courses (MOOCs)

Major Providers :

- **Coursera**
 - originated at Stanford University
 - ~ 150 universities and partners
 - ~ 2000 courses
- **edX**
 - originated at Harvard University and MIT
 - ~ 100 universities and partners
 - > 950 courses



MOOCs in Higher Education



Source: Class Central (2016). Monetization over Massiveness: A Review of MOOC Stats and Trends in 2016).



MOOCs in Business and Industry:

- Companies have discovered the power of the MOOCs as a new way to design and deliver online learning. Large organizations such as Microsoft and AT&T are piloting their own custom-created MOOCs. Others are developing a strategy to curate publicly available MOOCs aligned to their core competencies.

Source: Forbes.com (2016): *MOOCs Emerge As Disruptors To Corporate Learning*



Massive Open Online Courses (MOOCs): A Challenge for Instructional Designers

How can MOOCs be better designed to meet the increasing interest in using a variety of types of MOOCs, especially in business settings?



Trend # 9: Informal Learning

Definitions

Informal learning is the unofficial, unscheduled, impromptu way people learn to do their jobs.

Jay Cross, Informal Learning, 2006

A learning approach via which learners have control over the process, location, purpose, and content of learning.

Saul Carliner, in Reiser & Dempsey, 2018



Characteristics of Formal and Informal Learning: A Comparison

Formal

Informal

Focus on courses, workshops	Focus on conversations, “fingertip” advice



Characteristics of Formal and Informal Learning: A Comparison

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Informal

Focus on courses, workshops	Focus on conversations, “fingertip” advice
Content determined by instructor perception of need	Content determined by learner’s perception of need



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instructor-driven	learner-driven



Characteristics of Formal and Informal Learning: A Comparison

Formal

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Content determined by instructor perception of need	Content determined by learner’s perception of need
instructor-driven	learner-driven
School culture: Push	Web 2.0 culture: Pull



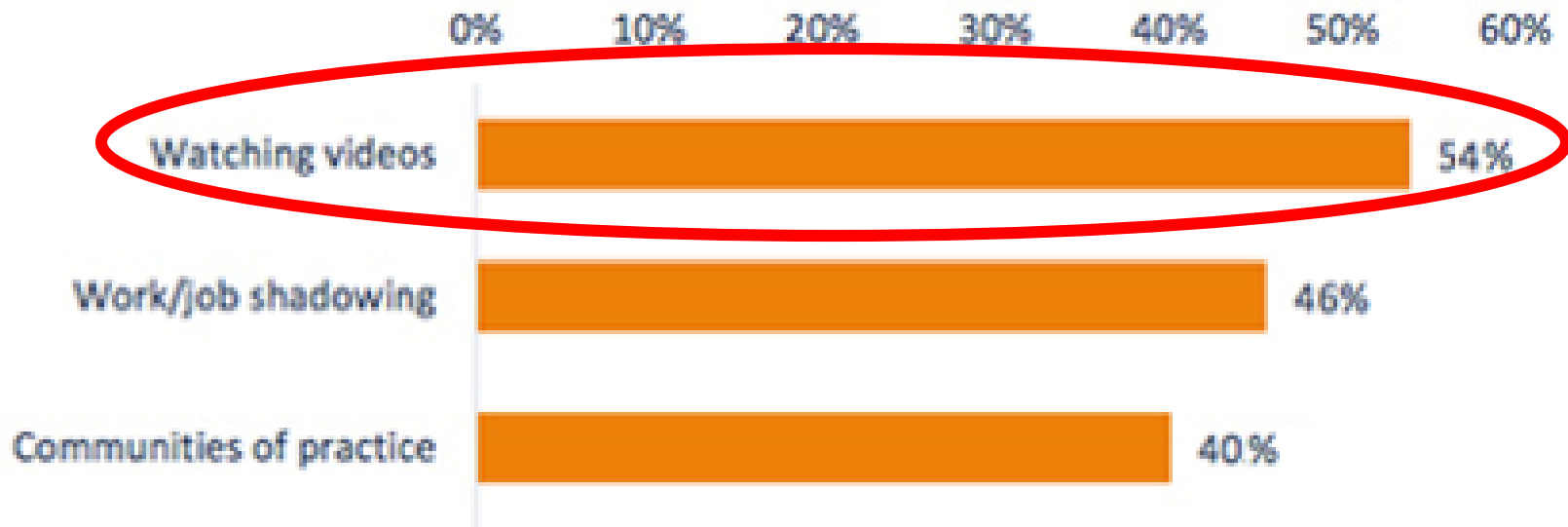
Informal Learning in Business and Industry

Percentage of organizations encouraging use of
specific informal learning activities



Informal Learning in Business and Industry

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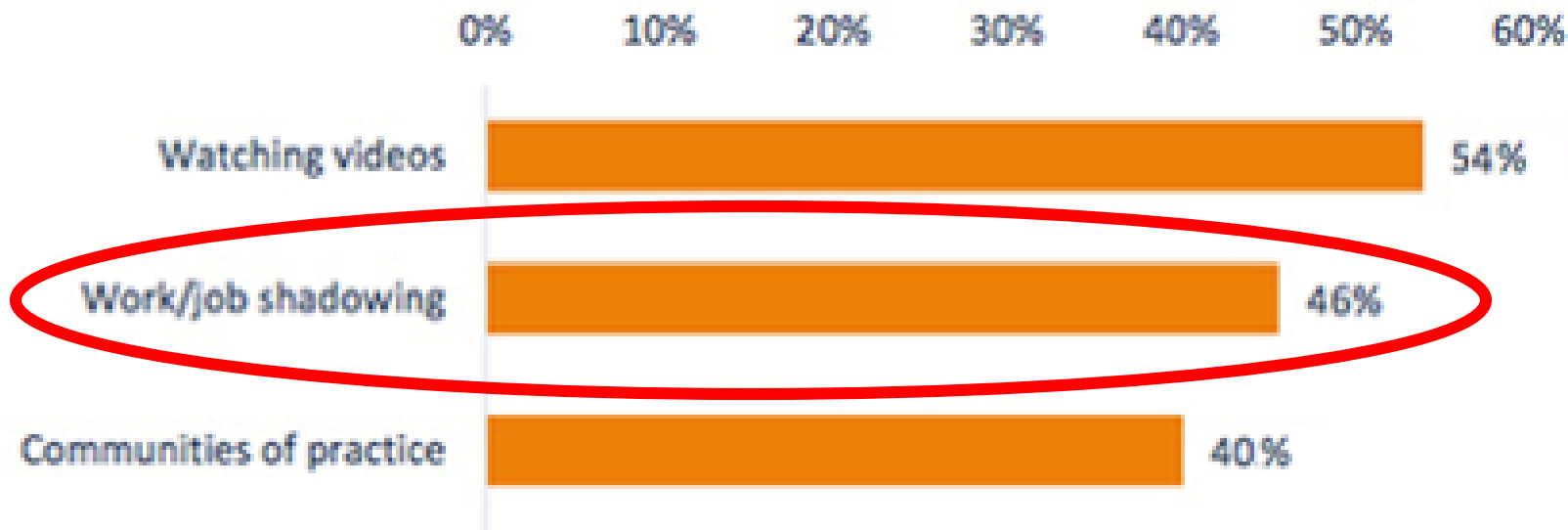


Source: eLearning Guild, Informal Learning Takes Off, 2014, n=132



Informal Learning in Business and Industry

Percentage of organizations encouraging use of
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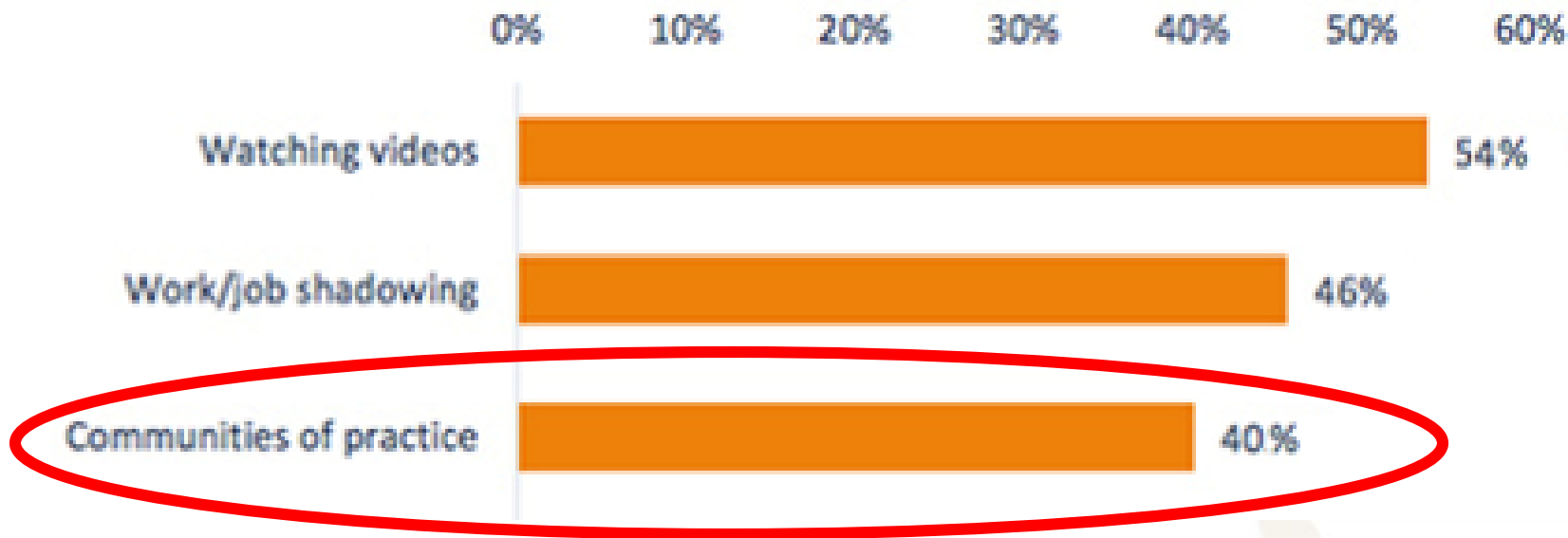


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Informal Learning in Business and Industry

Percentage of organizations encouraging use of
specific informal learning activities



Source: eLearning Guild, Informal Learning Takes Off, 2014, n=132



Informal Learning: A Challenge for Instructional Designers

What actions can we take to encourage workers to engage in informal learning activities that will result in improved workplace performance?



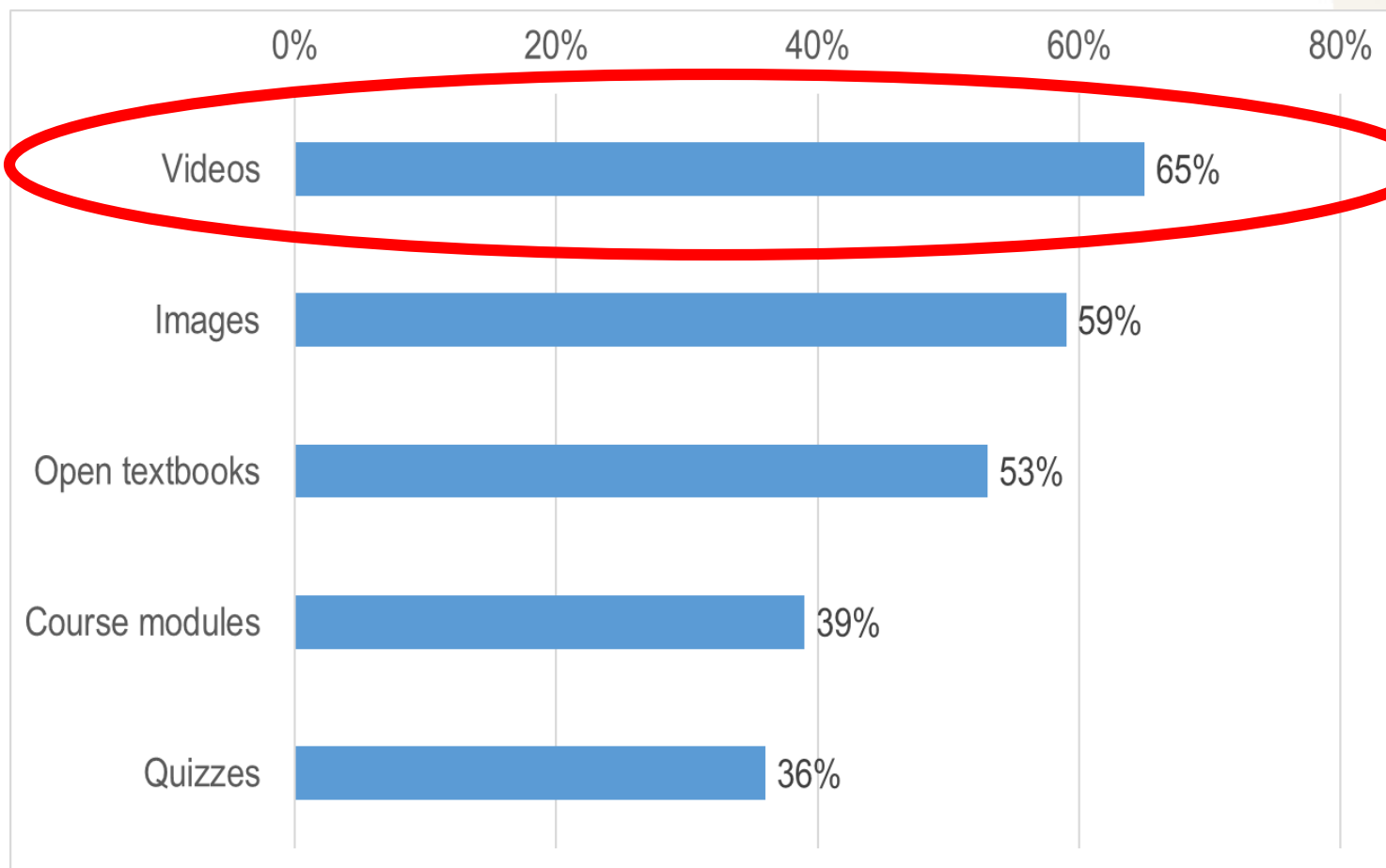
Trend # 10: Open Educational Resources

Open Educational Resources (OER) are teaching, learning, and research materials that are freely available for use by everyone (instructors, students, self-learners, etc.)

Adapted from OER Commons <oercommons.org>



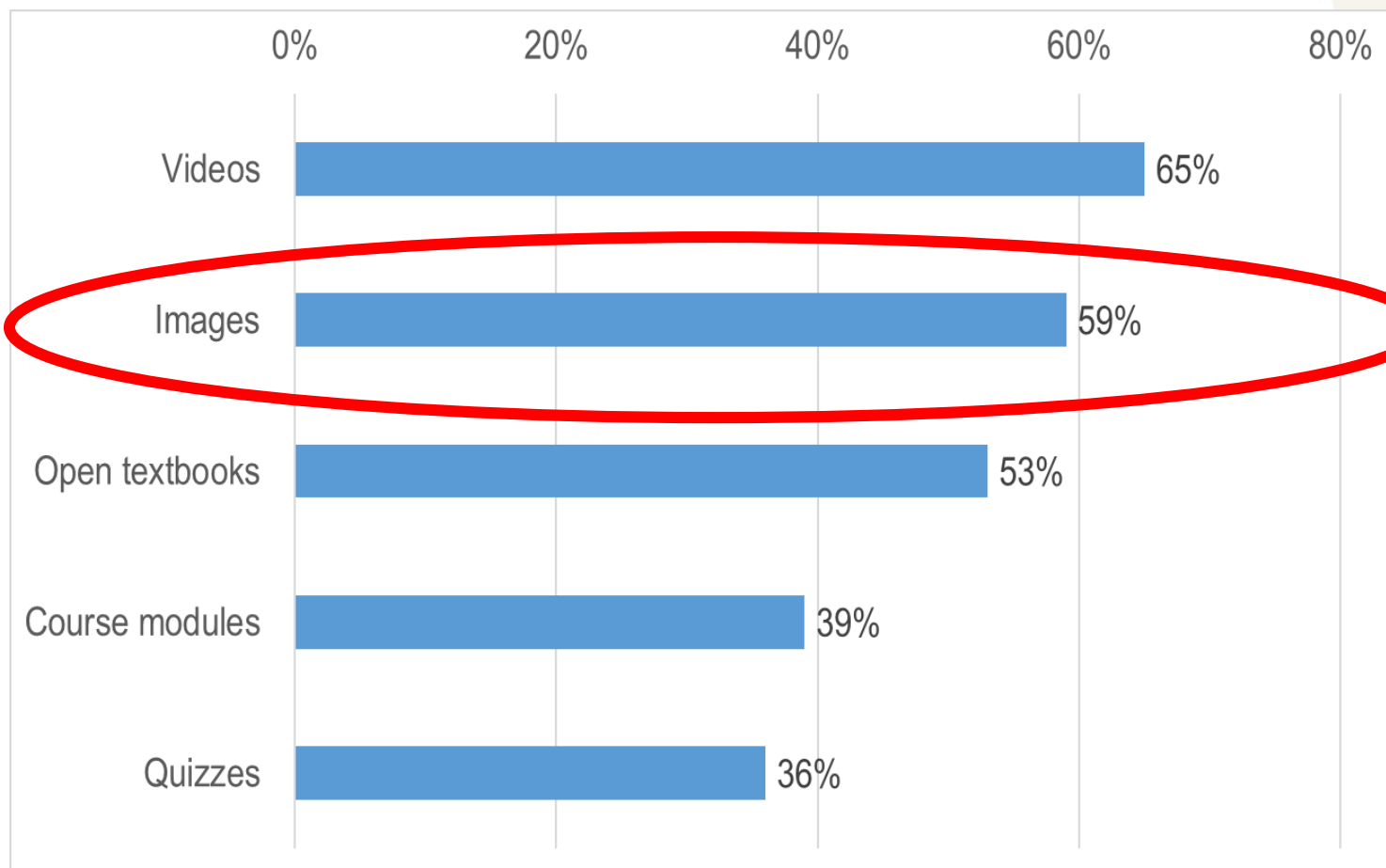
Types of Open Educational Resources Most Frequently Used for Instruction



Source: OER Research Hub (2015). OER Data Report 2013-2015 - Building Understanding of Open Education, n~1,500 educators (mostly (42.5%) K-12 teachers)



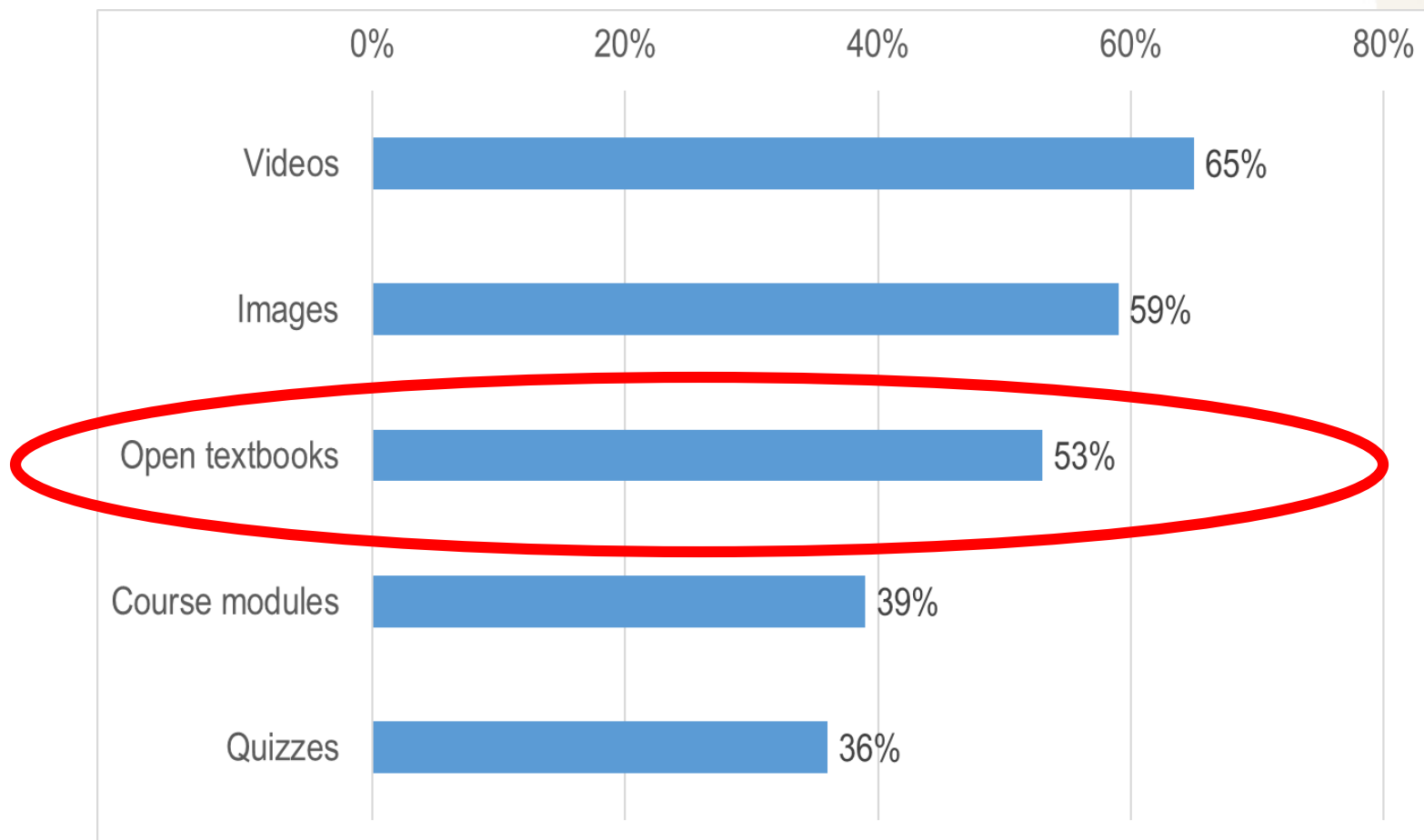
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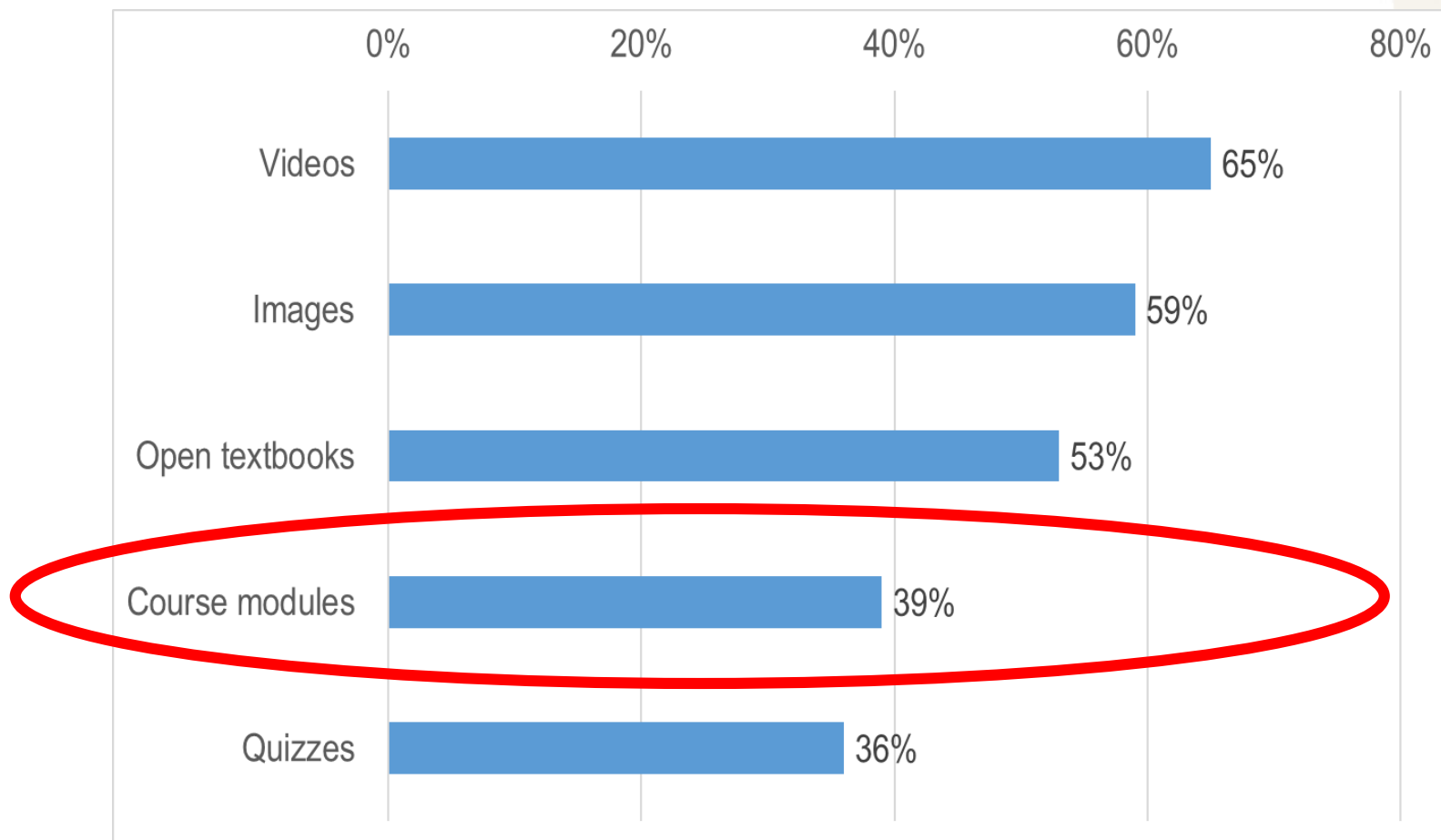
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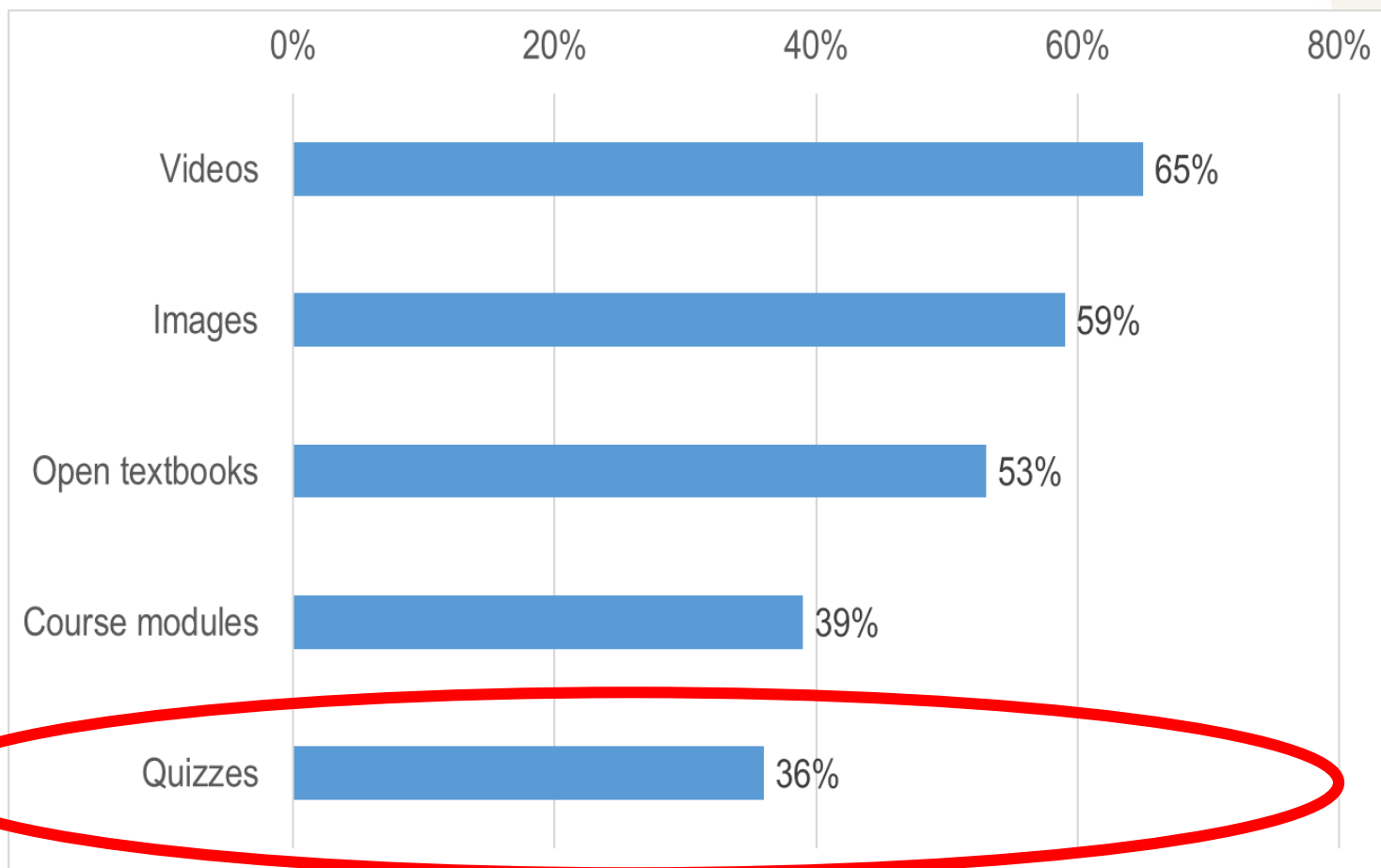
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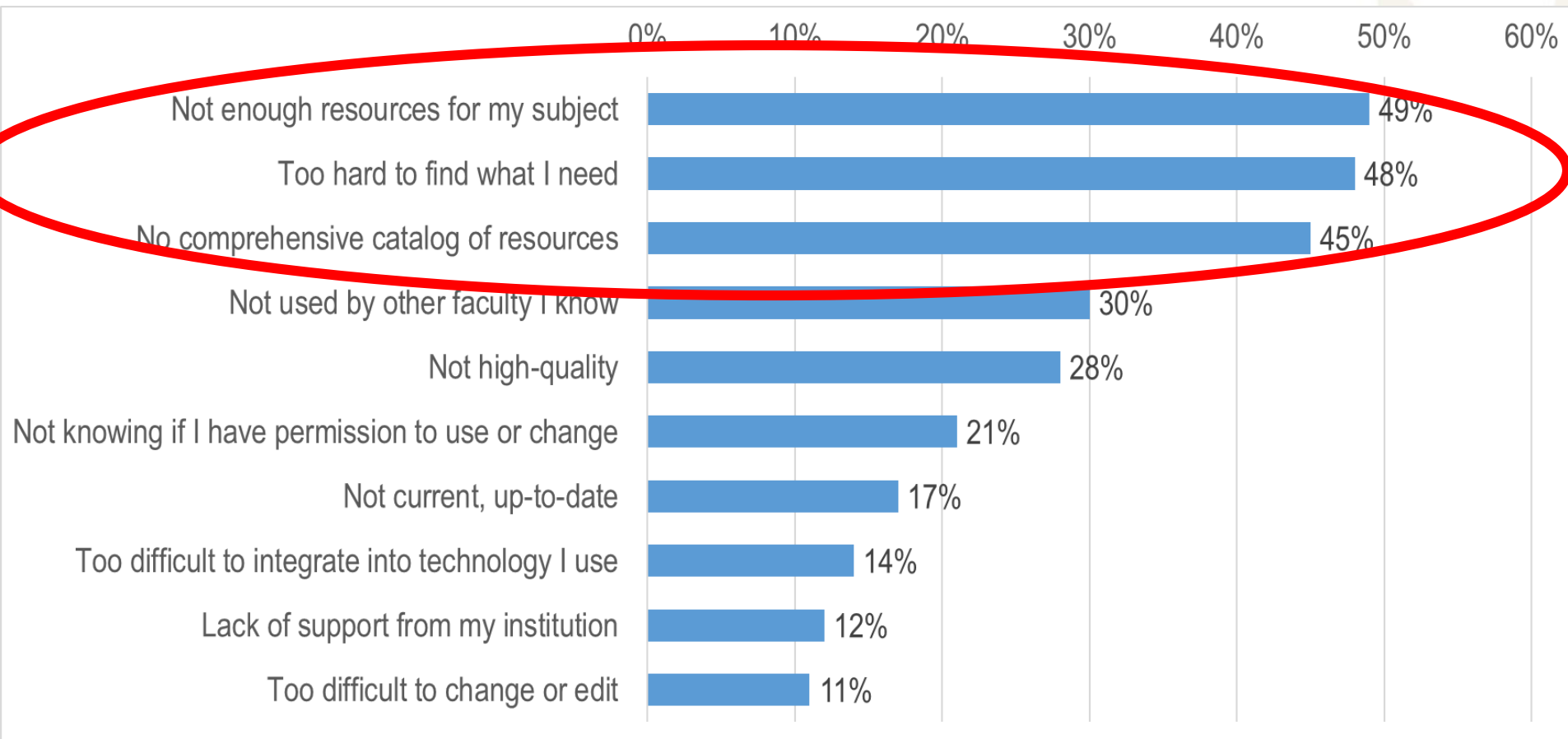
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OER in Higher Education: Barriers to Adoption



Source: Babson Survey Research Group (2016). Opening the Textbook: Educational Resources in U.S. Higher Education, 2015-16, n~3,000 faculties



Open Educational Resources: A Challenge for Instructional Designers

What can we do to help instructors and learners:

- find useful open educational resources and
- facilitate learning via the use of those resources?

Conclusion

Instructional Design and Technology: Our Expanding Toolbox

Mid-1970s:



2017:





Some Items in the Expanded Toolbox

- Performance improvement
- Performance support
- Online learning
- Social media
- Mobile learning
- Learning analytics
- Educational games
- MOOCs
- Informal learning
- Open Educational Resources

Conclusion



Wider Array of Options to Solve Problems



Greater Likelihood of Finding an Appropriate Tool



Positive Effect on Student Learning and Performance



Greater Professional Success!



Thank You!

