

Environmental Scan of Third Party High-Quality Digital Courseware in the US Postsecondary Market

August 31, 2011



Third Party High-Quality Digital Courseware (HQCW) Environmental Scan Findings

Agenda

- Project Scope
- Market Landscape & Trends
- Discoveries & Recommendations

HQCW Environmental Scan Findings

Project Scope

Research Project Context

Context

The 'Postsecondary Success' initiative at the Gates Foundation aims to dramatically increase the number of adults¹ who complete their postsecondary education, setting them up for success in the workplace and in life

Within this program, driving disruptive change through the adoption of high-quality digital courseware is one of the current areas of focus

- Third party, high-quality digital courseware is poised to play a key role in addressing a multitude of needs, issues, and obstacles that challenge learning organizations and students alike, particularly in the postsecondary education market in the US

1. Especially low-income adults: initiative target is to help the nation double the number of low-income adults who earn a postsecondary degrees or credentials by age 26

Research Project Objectives

Objectives

Create a preliminary, broad-based view of the third party postsecondary high-quality digital courseware space to better inform the Foundation's strategic decisions on how best to identify and scale available solutions

Landscape: How best can the emerging market landscape be characterized? What are some of the emergent business models that are potentially disruptive?

Market Evolution: What key market trends are expected to drive evolution in this space? What barriers exist that hinder broader adoption of digital courseware?

Highest Potential Players: Which third party players show most promise in being capable of driving learning outcomes and meaningful adoption?

Key trends for consideration

Key questions for market evolution

Third party
Market
Evolution

+

Education
Impacts

Provider trends: How is the provider marketplace expected to evolve over time?

- How can the current landscape be best characterized and who are the key players?
- What are the trends relevant to each of the key components of the marketplace?
 - Content, Design and Implementation Tools/Services, Technology Platforms
- What are the key drivers of future innovation expected to be in this space?
 - for technology, publishers, distance / online learning evolution etc.
 - Analogs around future models and evolution from other industries, countries etc.

Parent/Student trends: How is adoption expected to evolve over time?

- How is the balance of power shifting between institutions/educators and students/parents?

Institutional trends: How is adoption expected to evolve over time?

- What differences exist between for-profit, private and non-profit institutions?
- What challenges prevent broader maturity/adoption and how can they be overcome?
- What potential new educational models might evolve in the future?
- What impact will regulatory/other focus on 'evidence based education' have ?

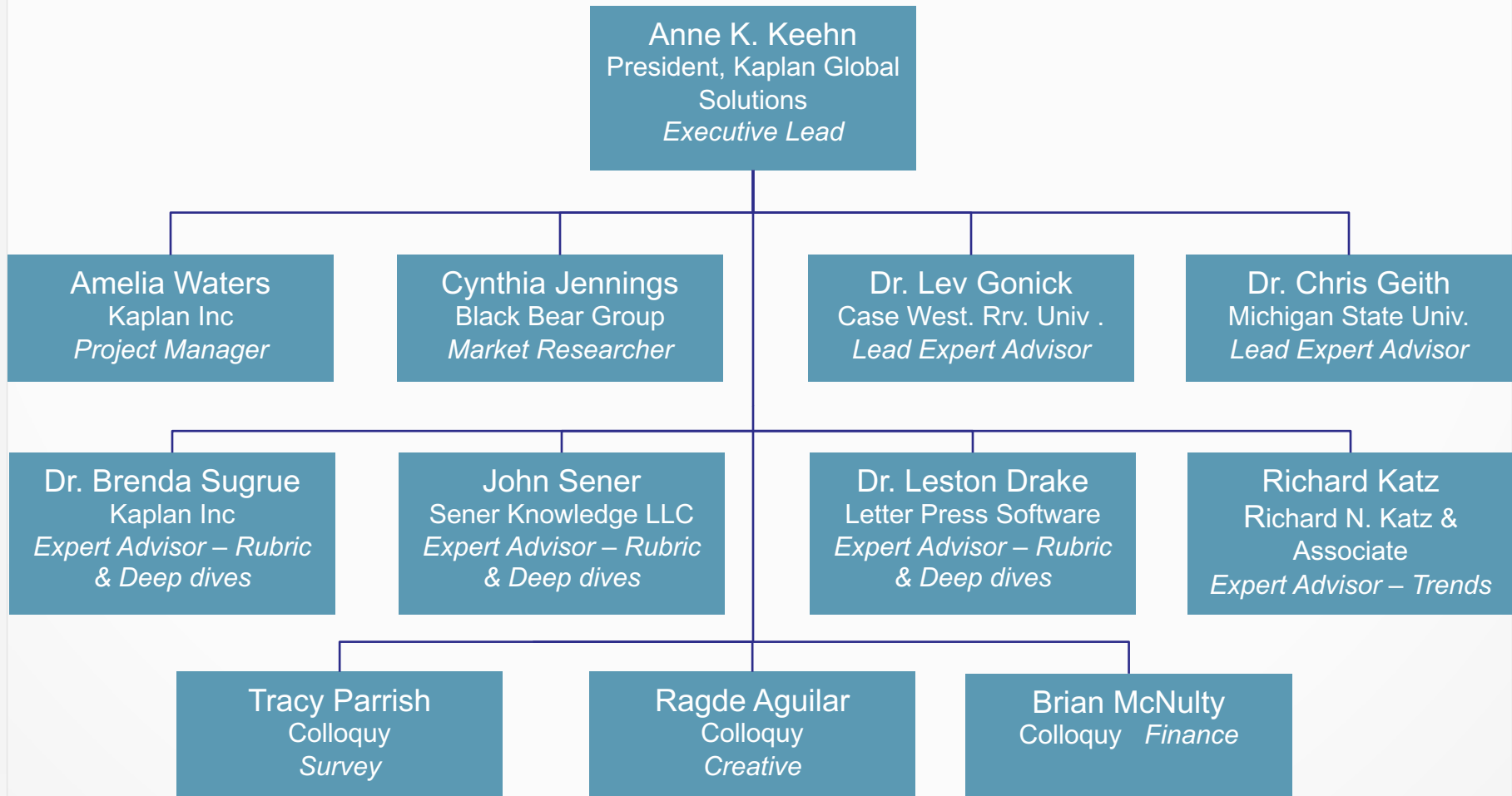
Future
Scenarios

What potential evolution 'scenarios' can be expected given the current third party digital courseware evolution and most critical needs of improving postsecondary education?

The HQCW Environmental Scan will help inform 3 key decisions for the Gates Foundation:

- 1 What are the changes that are beginning to emerge among content developers, service providers, and institutions that might suggest breakthroughs in student outcomes that improve learning– and **how might the foundation encourage** these positive trends?
- 2 What **foundation investment strategies** could increase the receptivity to/adoption of third party developed, high-quality digital courseware among postsecondary institutions that serve large numbers of low-income young adults?
- 3 Who are the **highest potential partners/contractors** for foundation-led projects to develop, showcase, and disseminate high-quality digital courseware that improves learning and completion in postsecondary?

HQCW Research Team



HQCW Environmental Scan Lense

In-scope

Focus on third party high-quality digital courseware providers for US postsecondary education as defined as **a fully scoped and sequenced interactive digital courses that incorporate learning technologies and services for the instructor and/or student taking the course.** The digital courses may be synchronous or asynchronous

Focus on players that provide solutions for areas of high interest to the Gates Foundation and/or areas of high future growth:

- Developmental education
- Gatekeeper/general education
- English as a Second Language
- High-demand occupational programs (e.g. allied health)

Focus primarily on 'supply-side' view of this marketplace, but also identify key execution and adoption challenges for effective execution

Out of scope

Any proprietary technology solutions developed or used by educational institutions

Outside of postsecondary space, with exception of when they cross over into higher education for dual-credit (e.g., Blackboard/K-12 partnership)

HQCW Project steps



- Accepted the request to conduct the environmental scan
- Submitted proposal
- Signed contract and defined deliverables
- Commissioned core team



- Conducted market scan of US HE third party digital courseware providers
- Selected organizations of interest within project scope
- Accumulated market research on key players w/digital courseware for Developmental Ed, Gen Ed, & high profile professional degree areas – w/in scope.



- Drafted outline of scorecard
- Decided against developing scorecard (too complex for this phase of the project)
- Identified need for survey
- Developed survey and introduction letters
- Surveyed 53 organizations
- Analyzed 24 responses
- Adopted Kaplan course checklist/rubric for deeper dives of 13 providers



- Selected deep dive candidates and sent invitations
- Added instructional design experts to the team, trained team in use of Kaplan checklist
- Conducted 13 deep dive interviews
- Analyzed findings



- Conducted cross-country industry expert interviews
- Added HE industry expert to the team
- Gather & analyzed tombs of HE trends market research
- Synthesized findings in a white paper & final report as to barriers & levers for adoption of 3rd party high-quality digital courseware by US HE institutions



- Analyzed individual and aggregated survey and deep dive responses
- Synthesized all data, trends, findings and prepared data charts
- Developed deliverables for the Gates Foundation
- Presented to the Gates Foundation Postsecondary Success team
- Provide recommendations & on-going consulting for the Foundation about the project

Methodology

1 Identification of key players

Extensive list of 115+ key players who were identified as active in various capacities in the digital courseware space

2 Market research

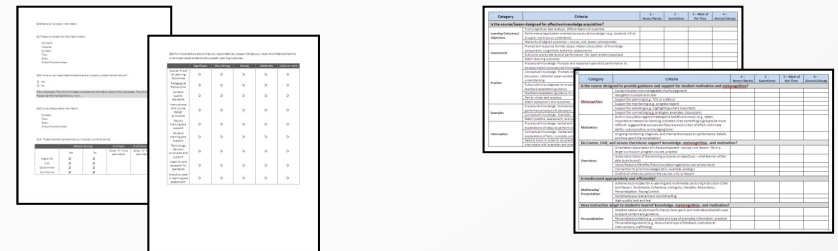
High priority list of 80 players identified by experts as potential industry leaders in digital courseware in areas of interest to the Gates Foundation

3 Survey

Received 23 responses to an online survey seeking information on company profile, evidence of learning outcomes and assessment of market trends

4 Deep dive

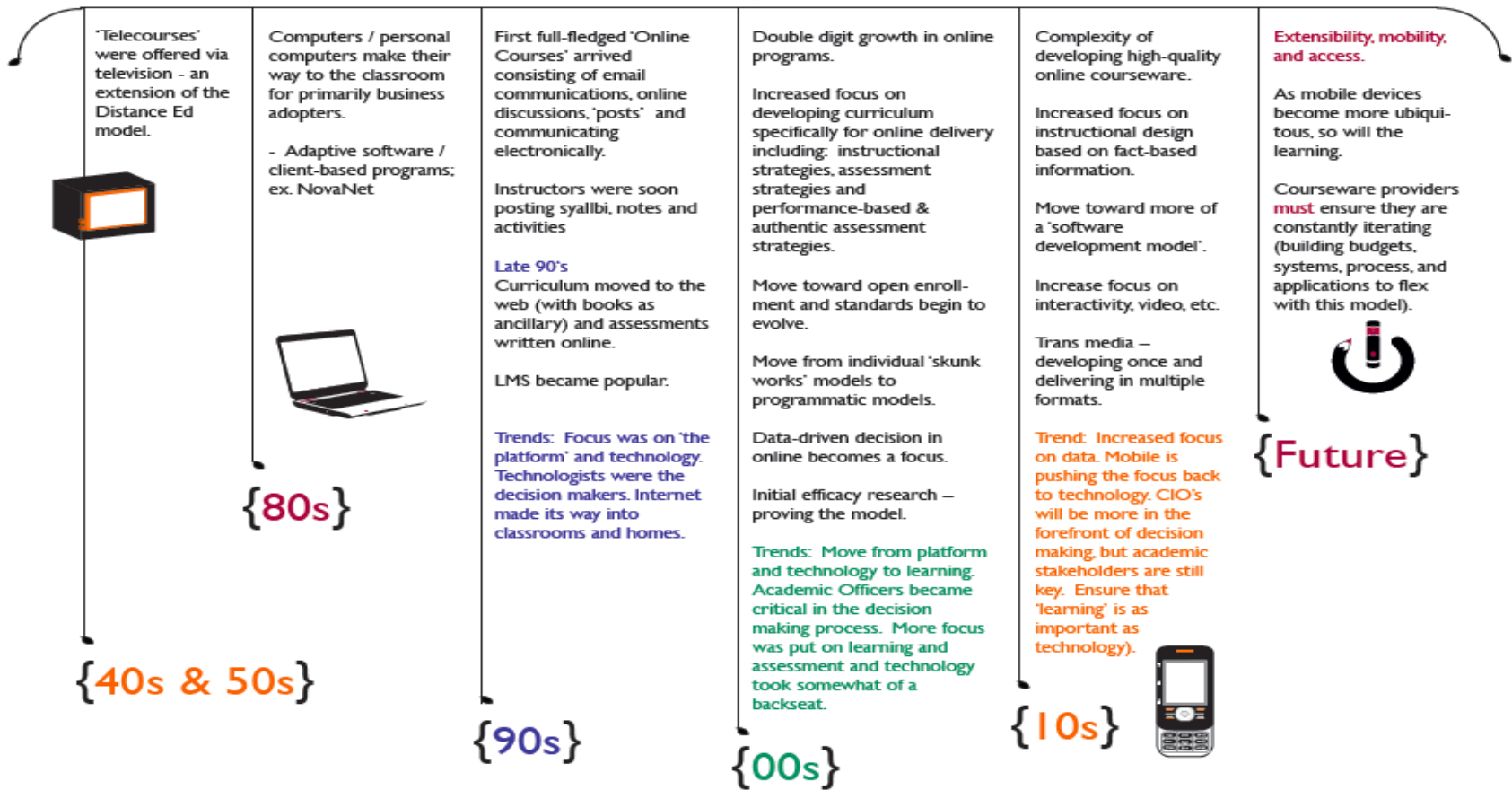
Deep dive list of 13 players invited (based on learning outcomes) to participate in a course evaluation utilizing the Kaplan Learning Innovation Course Rubric



HQCW Environmental Scan Findings

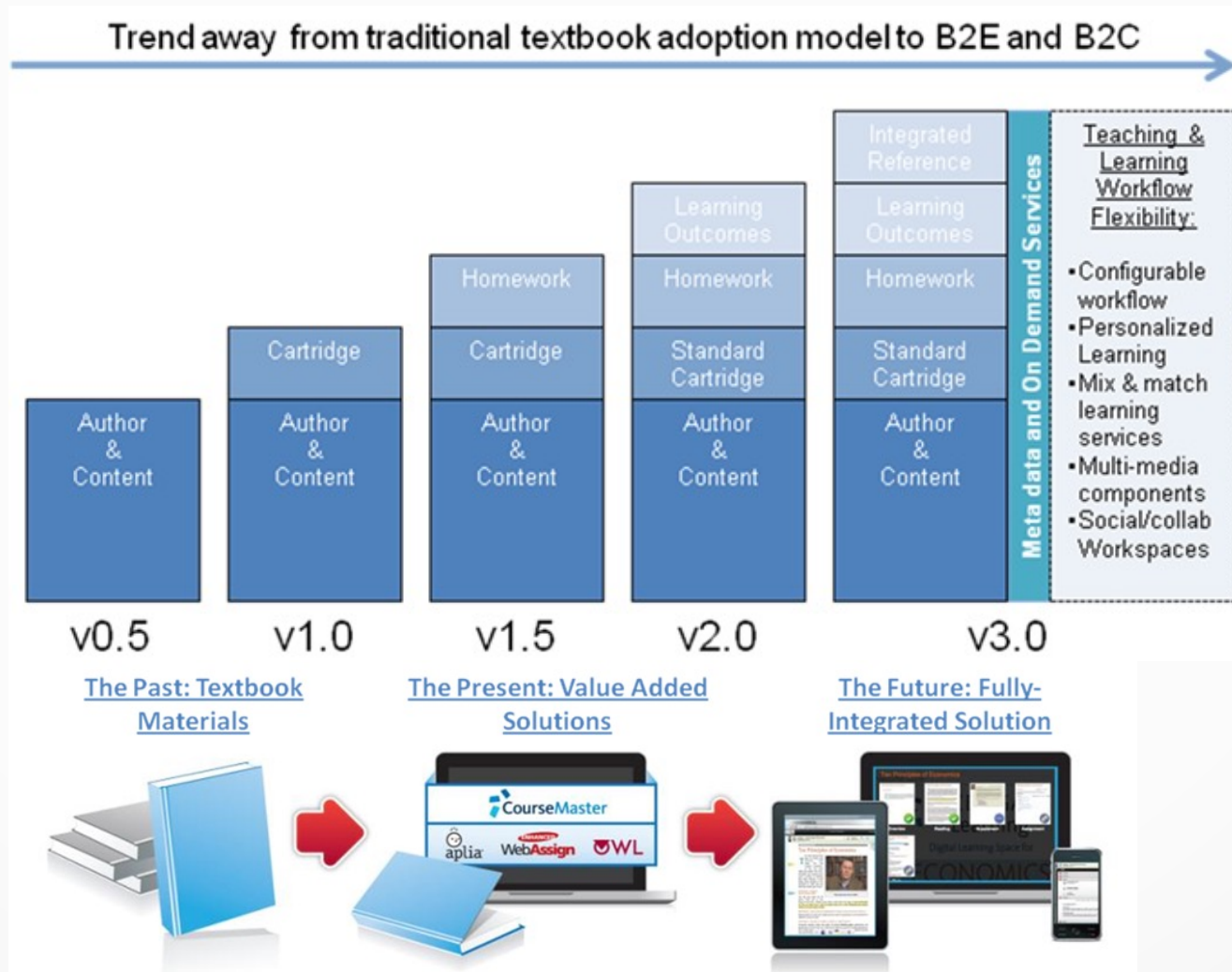
The Market Landscape

Historical evolution of digital courseware market



Source: Pearson Education

Historical evolution of digital courseware



Source: Cengage Learning

Myriad players with varied offerings

Digital courseware

Tools / Platforms

Services

Digital courses / courseware



Social/Interaction/ Collaboration

Rich media

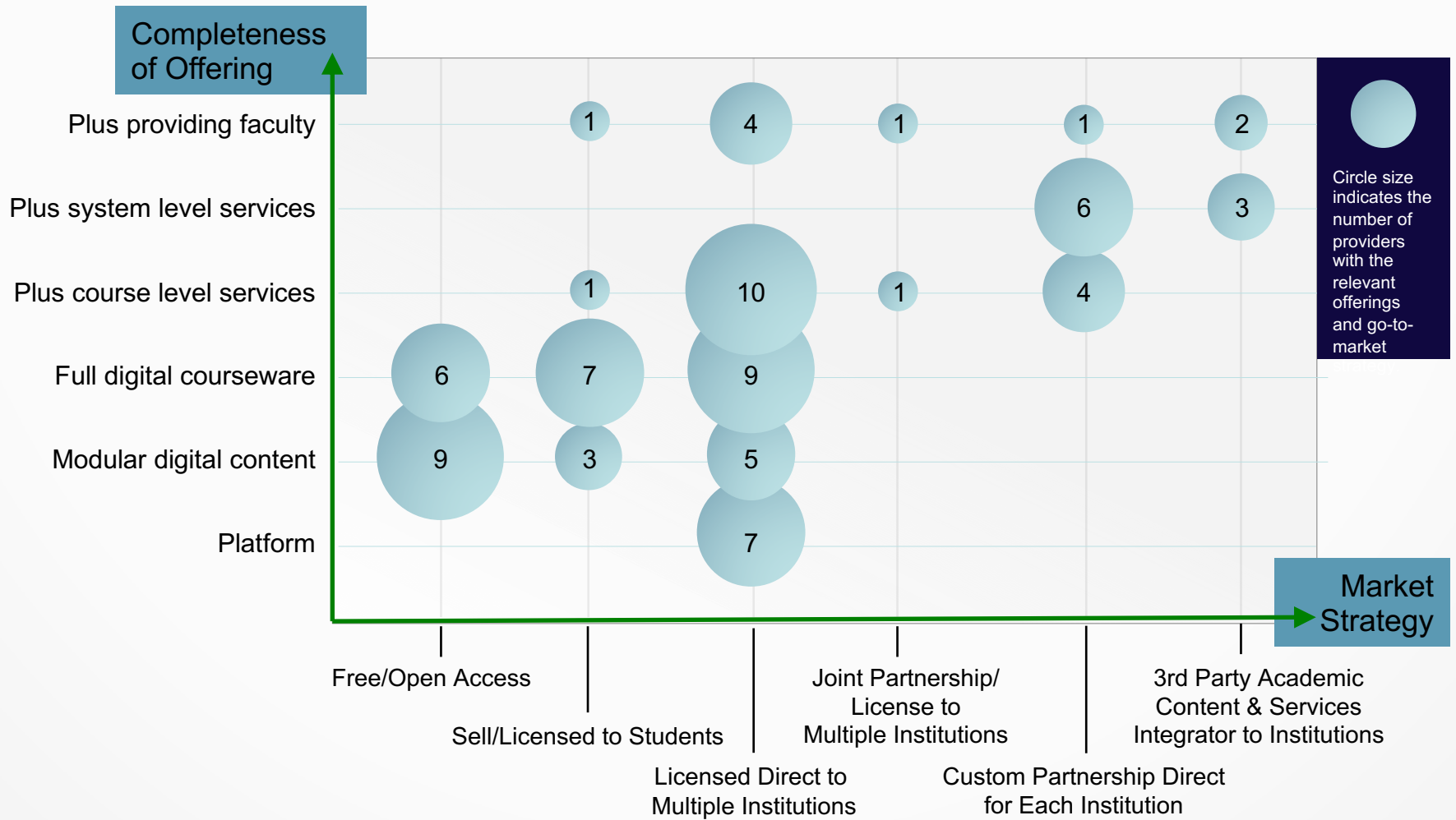


Standards



Note: This is an illustrative, not exhaustive list of companies

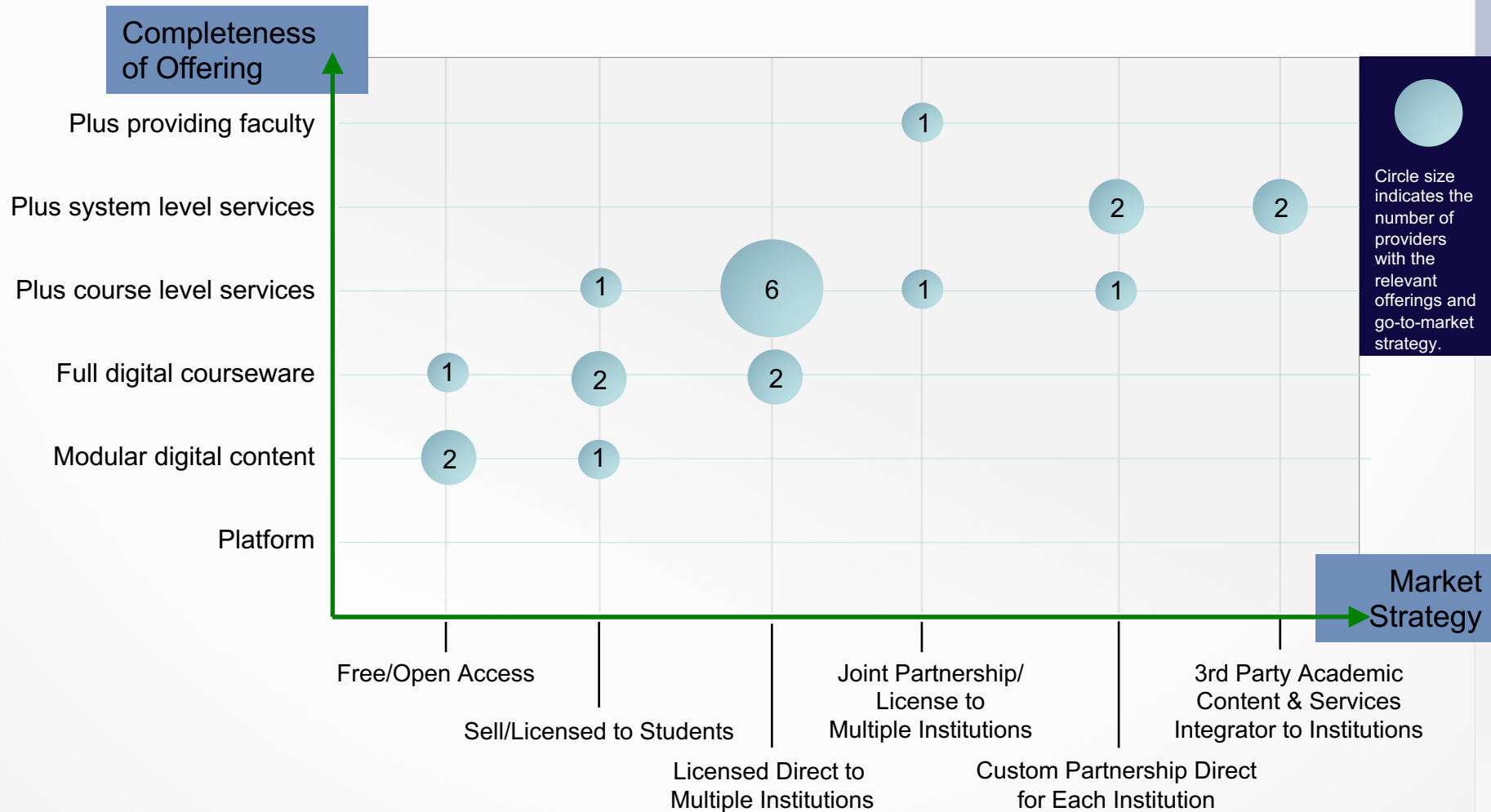
80 Providers Investigated



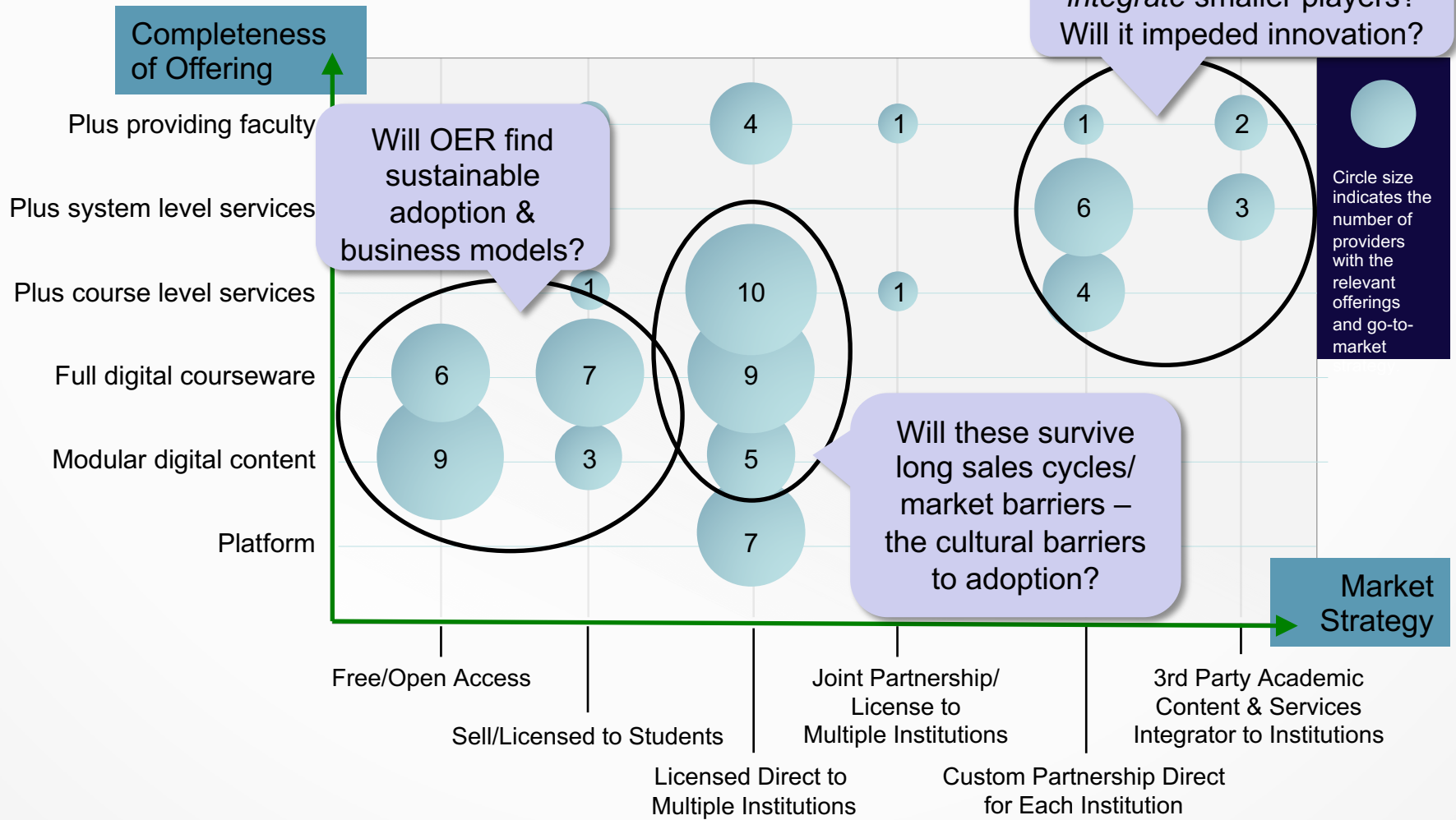
HQCW Environmental Scan Findings

The Key Players' Survey Findings

Survey Responses – 23 Providers



All providers investigated



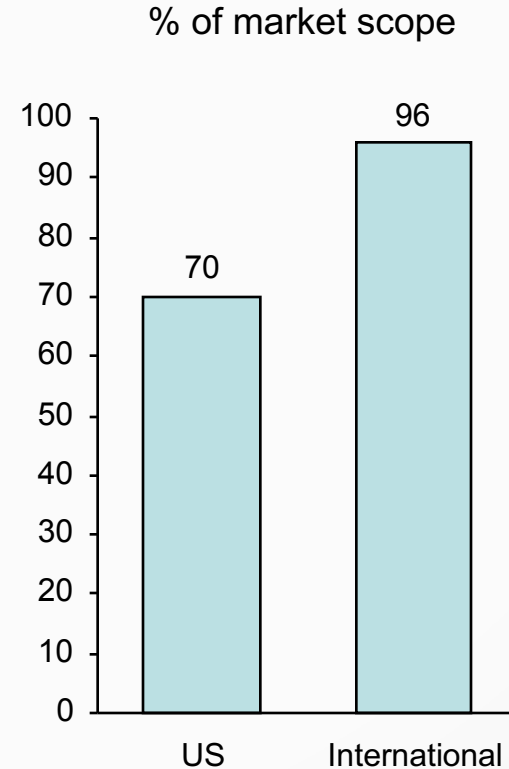
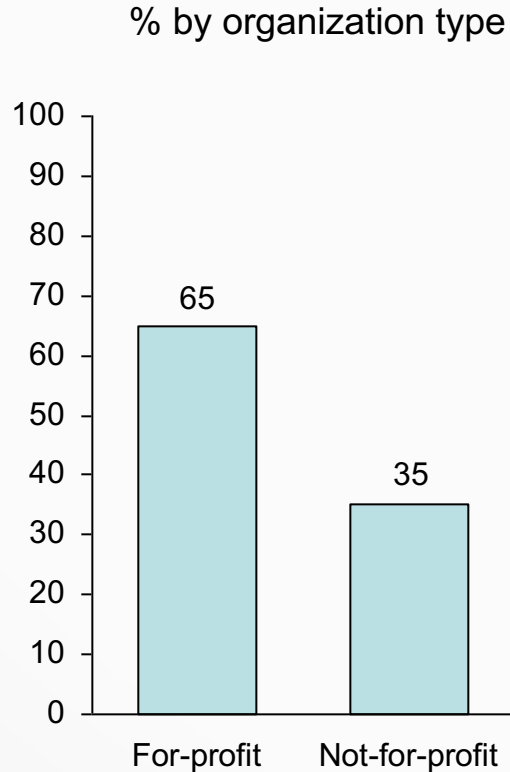
Provider Detail

| Market strategy | Completeness of offering | Number | Companies |
|--|----------------------------|--------|---|
| Free-open access | Modular digital content | 9 | Academic Earth, Connexions, Khan Academy, Learning Games Network, Learning Resource Exchange, Merlot, Open Content Alliance, Curriki, PhET |
| Free-open access | Full digital courseware | 6 | BYU Independent Study Open, Omnicademy, OU UK Open CourseWare, Saylor.org, Sofia, OpenCourseware Consortium |
| Sell/licensed to students | Modular digital content | 3 | Flat World Knowledge, Brain POP, Froguts |
| Sell/licensed to students | Full digital courseware | 7 | Kaplan OpenCourseWare, StraighterLine, Western Governors University, U of People, Disney English, Englishtown, The Math Emporium |
| Sell/licensed to students | Plus course level services | 1 | Livemocha |
| Sell/licensed to students | Plus providing faculty | 1 | Florida Virtual School |
| Licensed direct to multiple institutions | Platform | 7 | Brainhoney.com (Agilix), Claroline, Dokeos, eFront Learning (Epignosis), geo Learning, Moddle Rooms, Sakai |
| Licensed direct to multiple institutions | Modular digital content | 5 | 3FX, Grockit, Joomla, Lynda.com, MacMillan |
| Licensed direct to multiple institutions | Full digital courseware | 9 | ALEKS, AMSER (Applied Math & Science Repository), APEX Learning, Carnegie Mellon OLI, Coast Learning Systems, LON-CAPA, Rosetta Stone, Schoolcraft Publishing, MindEdge, Inc. |
| Licensed direct to multiple institutions | Plus course level services | 10 | Archipelago Learning (Northstar Learning), BFW Publishing (MacMillan), Carnegie Learning, Dallas TeleLearning Online, MIT OCW and OCW Scholar, Monterey Institute (HippoCampus & NROC included), Thinkwell, UC College Prep, Vantage Learning, Wiley Higher Education |
| Licensed direct to multiple institutions | Plus providing faculty | 4 | Learning Tree International, Michigan Virtual University, Idaho Digital Learning, Virtual Virginia |
| Joint partnership / license to multiple institutions | Plus course level services | 1 | McGraw Hill Learning |
| Joint partnership / license to multiple institutions | Plus providing faculty | 1 | Blackboard/K12 |
| Custom partnership direct for each institution | Plus course level services | 4 | Bisk Education, Cengage Learning, Vector Learning (Care2Learn), Toolwire |
| Custom partnership direct for each institution | Plus system level services | 6 | 2tor, Embanet-Compass Knowledge, Higher Ed Holdings, ProTrain, Skillsoft, SunGard Higher Education |
| Custom partnership direct for each institution | Plus providing faculty | 1 | Eleutian |
| 3rd Party Academic Content & Services | | | |
| Integrator to Institutions | Plus system level services | 3 | NIIT (Cognitive Arts & Element K), Pearson Education, TATA Interactive Systems |
| 4th Party Academic Content & Services | | | |
| Integrator to Institutions | Plus providing faculty | 2 | Colloquy, Giant Campus |

Observations on key players in the digital courseware space:

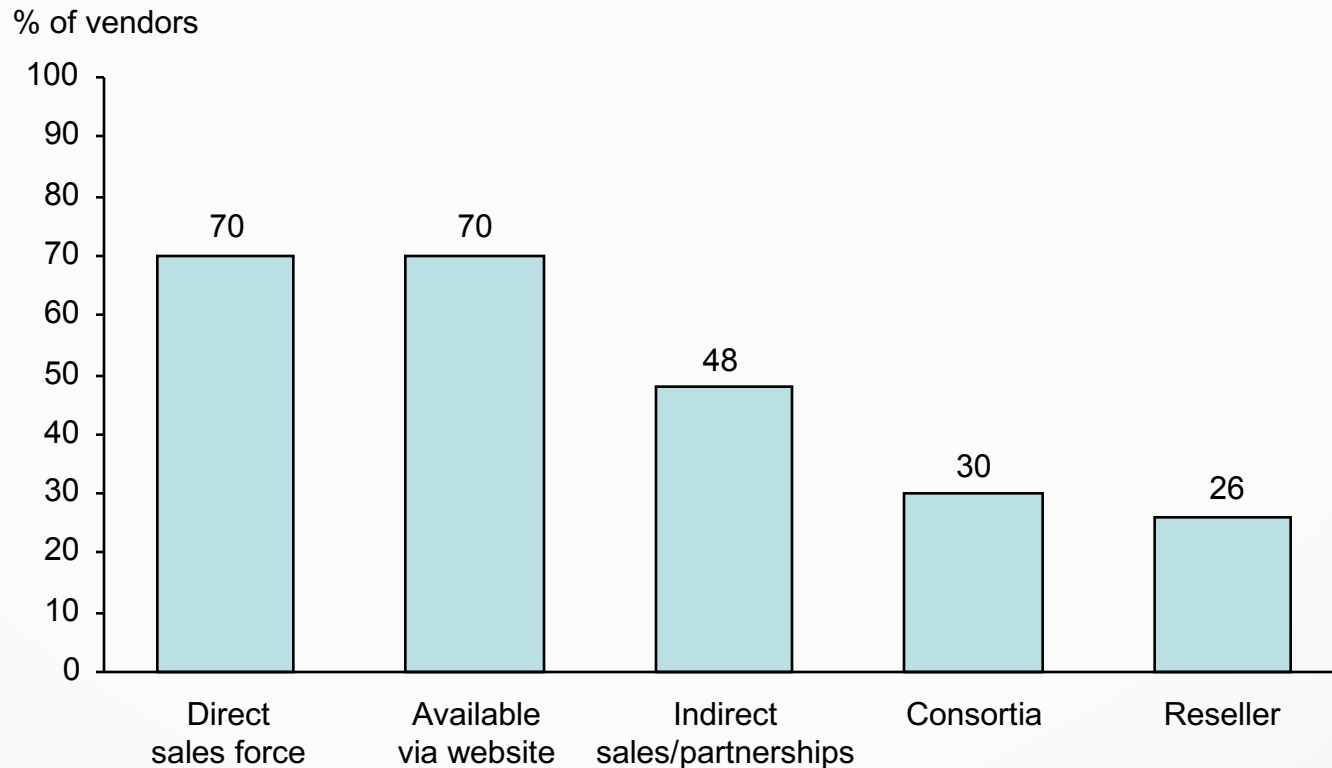
- Relatively few digital courseware providers currently have proof of learning outcomes
- The number of open courseware or consortium providers appears to be on the increase
- Video as a medium is gaining increased popularity
- The importance of either instructor or peer interaction/feedback is integral to most digital courseware deliveries
- Use of social media (Web 2.0) tools as part of digital courseware is growing
- The concept of communities and tutors/proctors was evident in many of the digital courseware offerings
- Most companies (aside from the publishers) are start-up and early stage private firms
- Availability of courseware, learning objects and supplemental course materials for free or for minimal cost was evident to meet the increased demands of low-income young adults who are seeking a post-secondary education

HQCW Key player respondents were primarily for-profit digital courseware providers who market both within the US and internationally



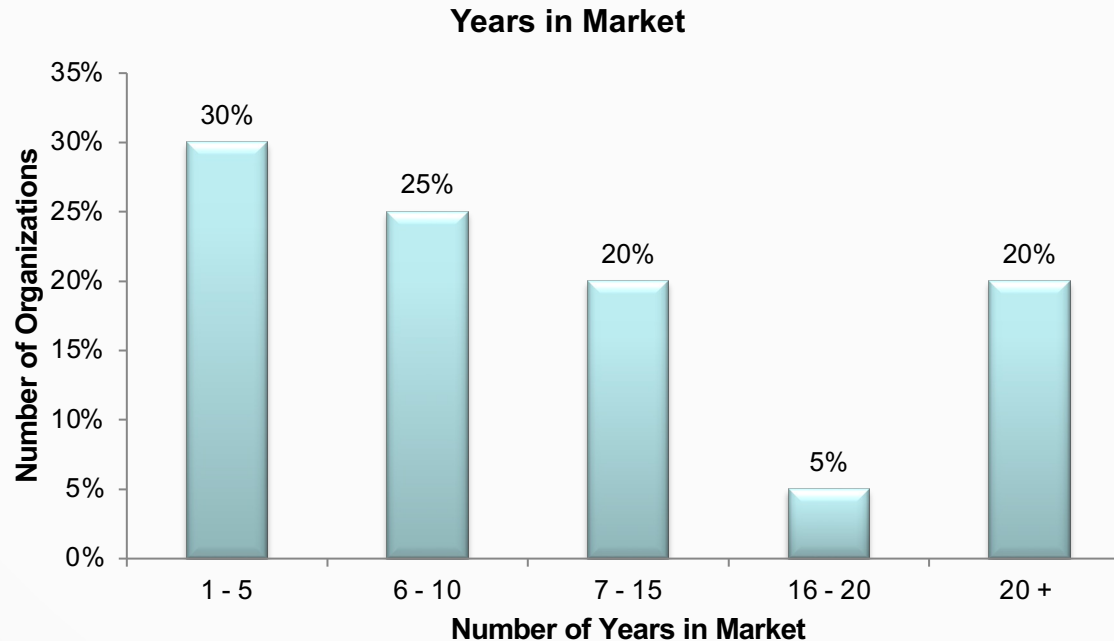
Vendors use many ways to market their digital courseware, primarily through a direct sales force and making it available via the website

How do you market your digital courseware?

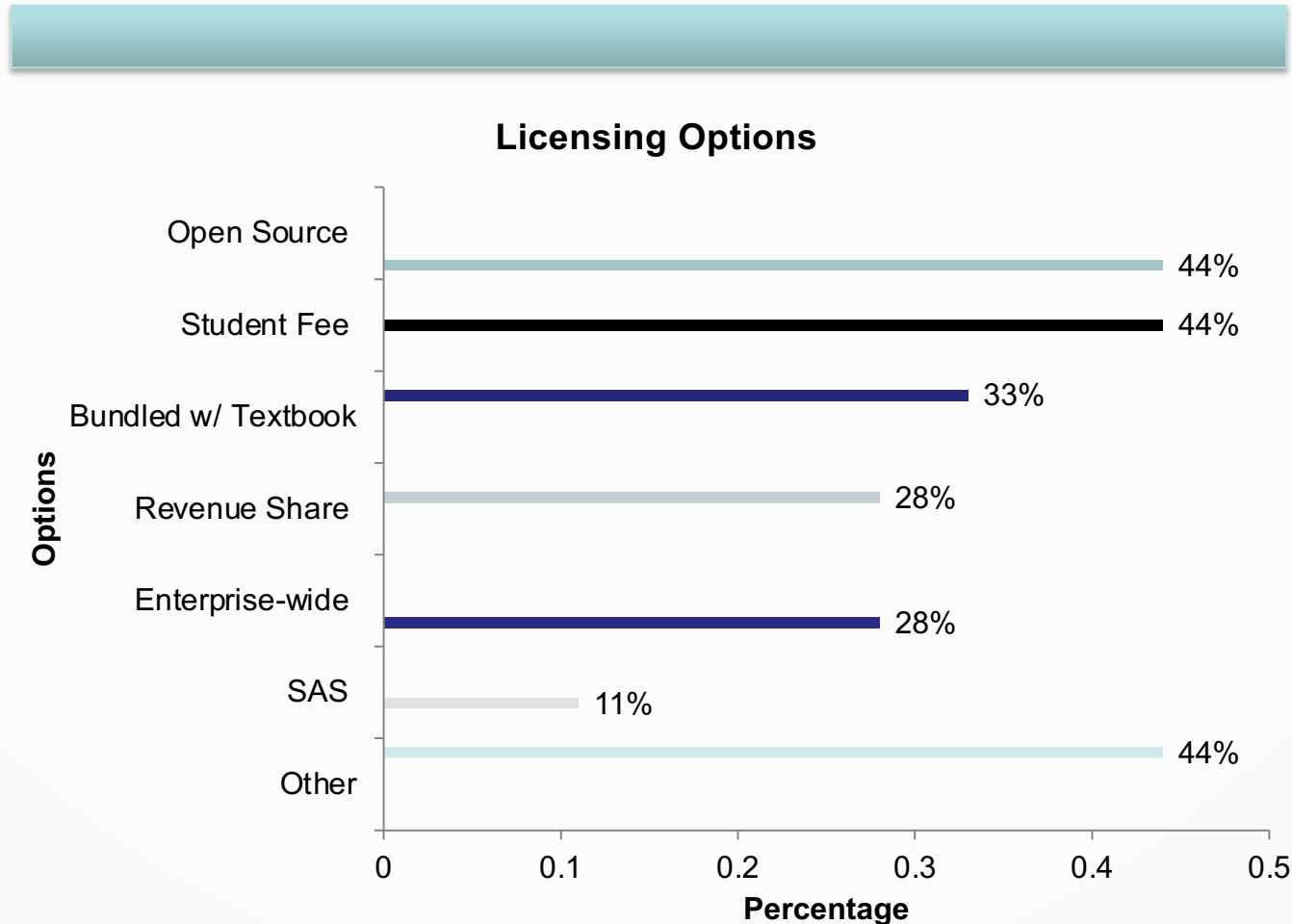


Survey Question: How many years have you served the HE market?

Majority of Respondents were less than 10 years

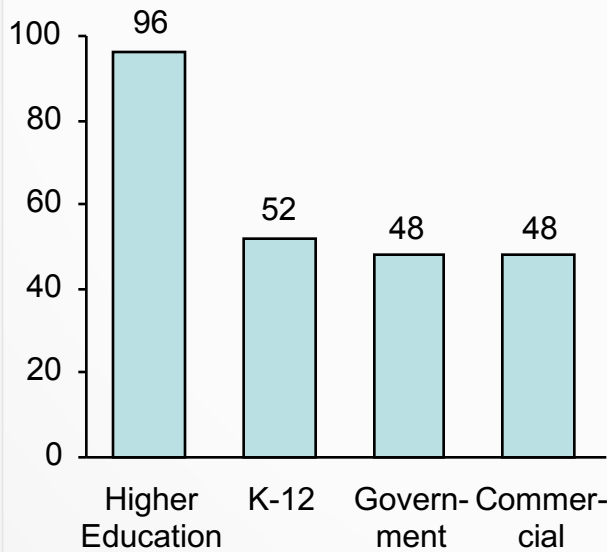


Survey Question #73: What are your licensing options for your digital courseware? (check all that apply)

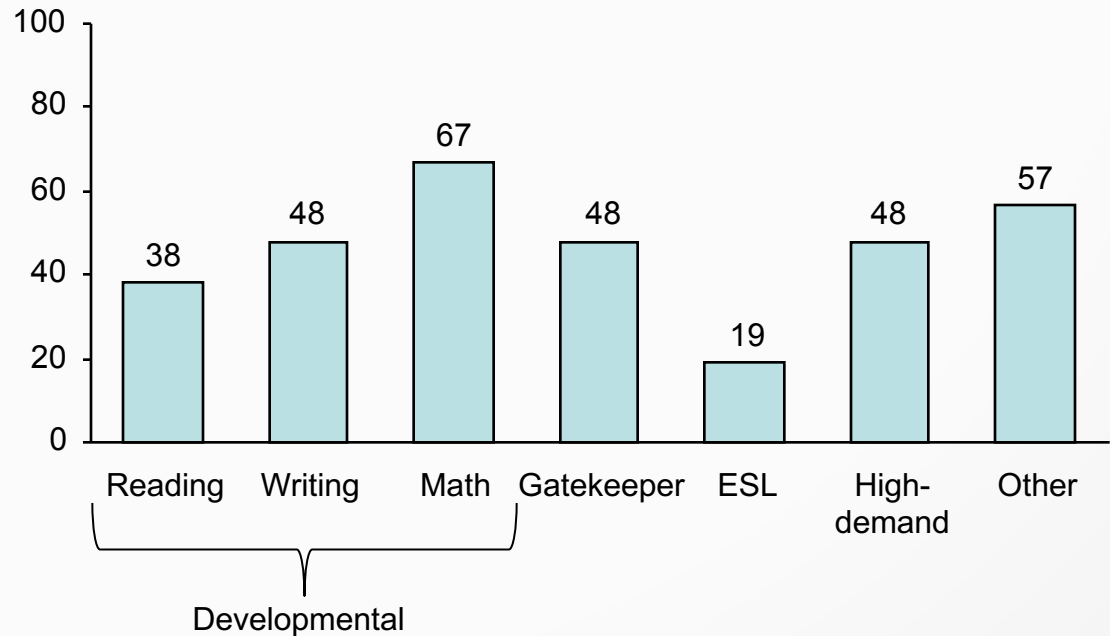


Most of the providers of HQCW offer a wide range of post-secondary digital courseware

Markets served by Providers (%)

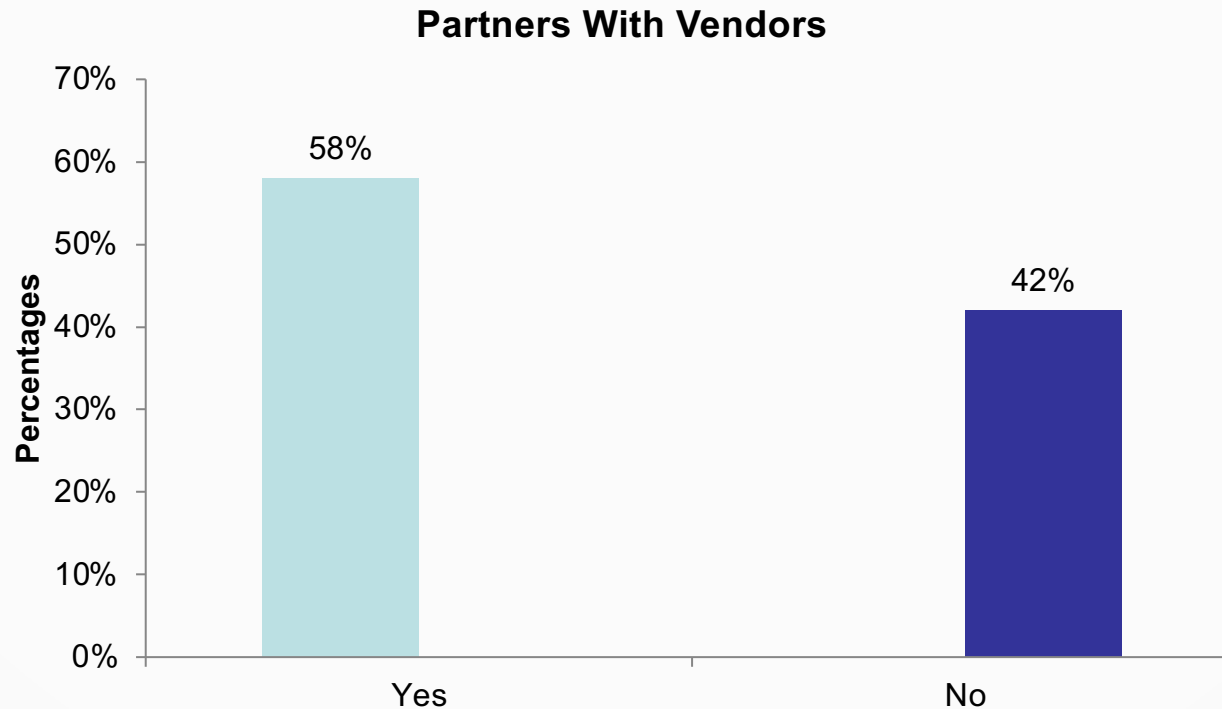


Post-secondary Digital Courseware Offerings by Provider (%)



Survey Question #66 : Are you partnering with any other vendor(s) to offer your postsecondary digital courseware?

About 60% of the providers do partner with other vendors

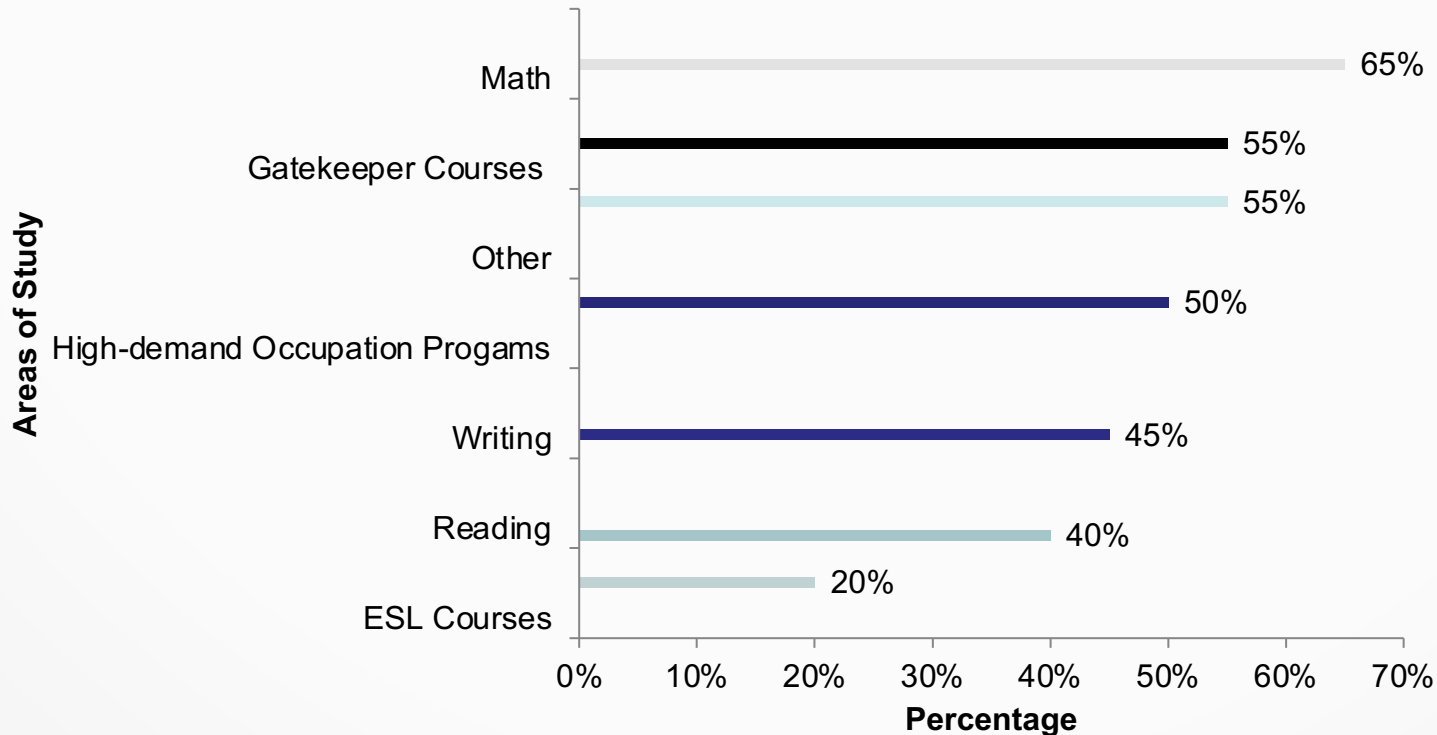


Note: McGraw Hill, ALEKS, Cengage, Houghton-Mifflin & others

Survey Question #13: Please indicate in what areas your organization offers postsecondary digital courseware (check all that apply)

Math and Gen ED/Gatekeeper courses are most prevalent offerings

Areas of Study Offered By Digital Courseware



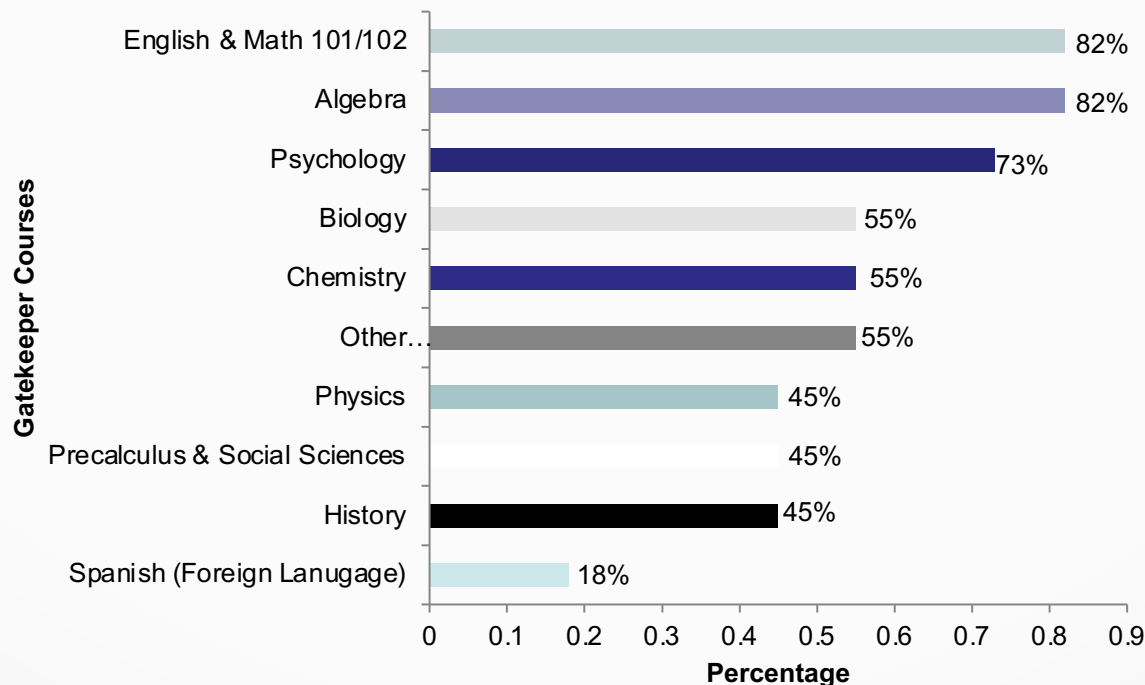
Other includes Accounting, Anatomy & Physiology, Business, Communication

Survey Question #14: Please identify the postsecondary Gatekeeper Courses your organization currently provides digital courseware for:

(Gatekeeper courses can be hurdles that slow or halt a student's progress toward a degree)

Basic Level English, Math, Sciences, Accounting and Psychology

Gatekeeper Courses Offered by Digital Courseware

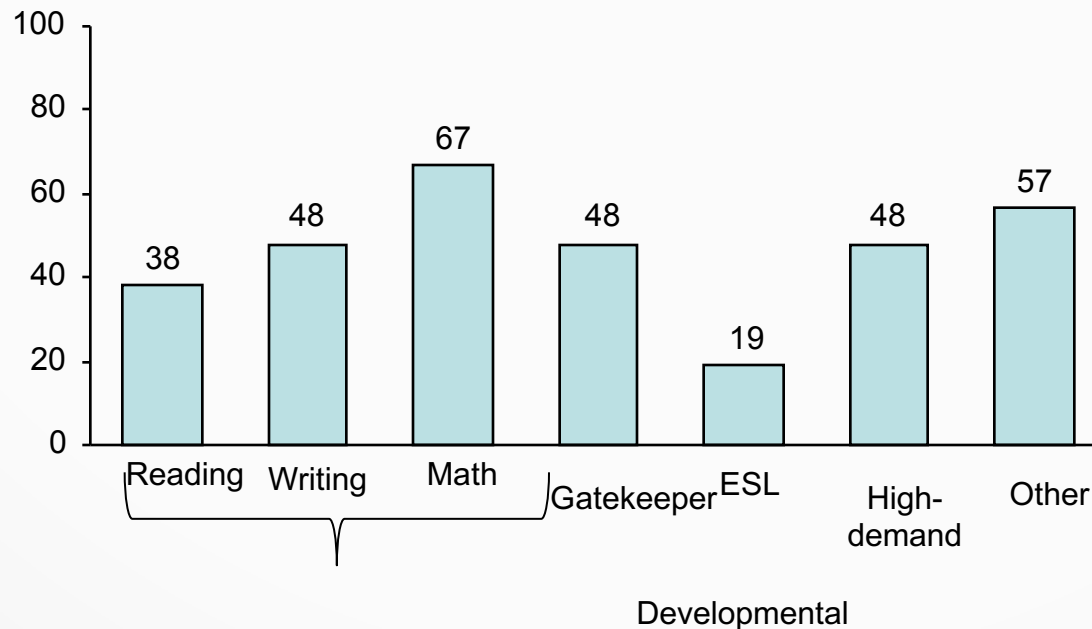


Other includes Accounting, Anatomy & Physiology, Business, Communication

Survey Question #16: Please indicate in what areas your organization has evidence of improved learning outcomes from the digital courseware you offer?

Developmental Math, Reading and Writing were reported as having most evidence of improved learning outcomes

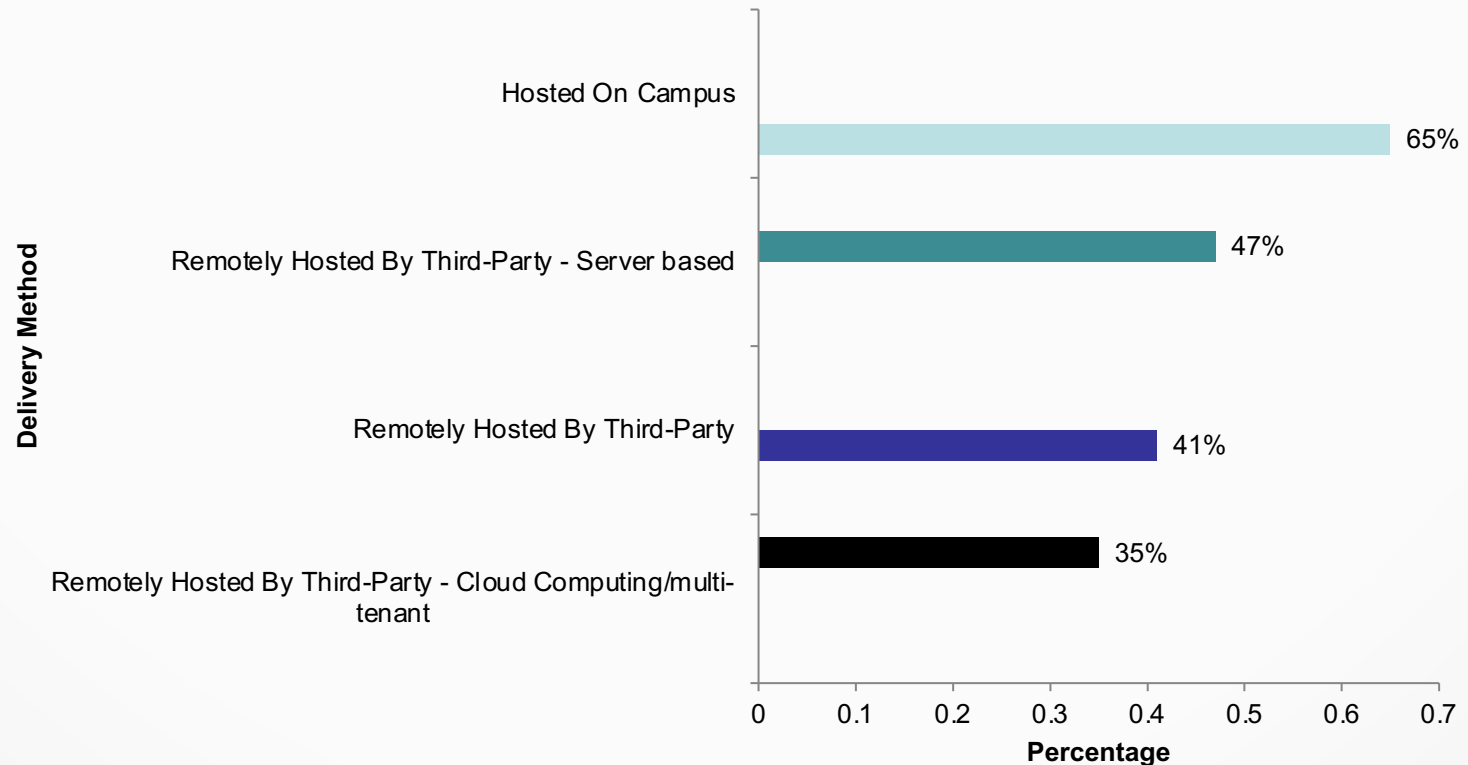
Post-secondary Digital Courseware Offerings by Provider (%)



Survey Question #67 : How is your digital courseware delivered? (check all that apply)

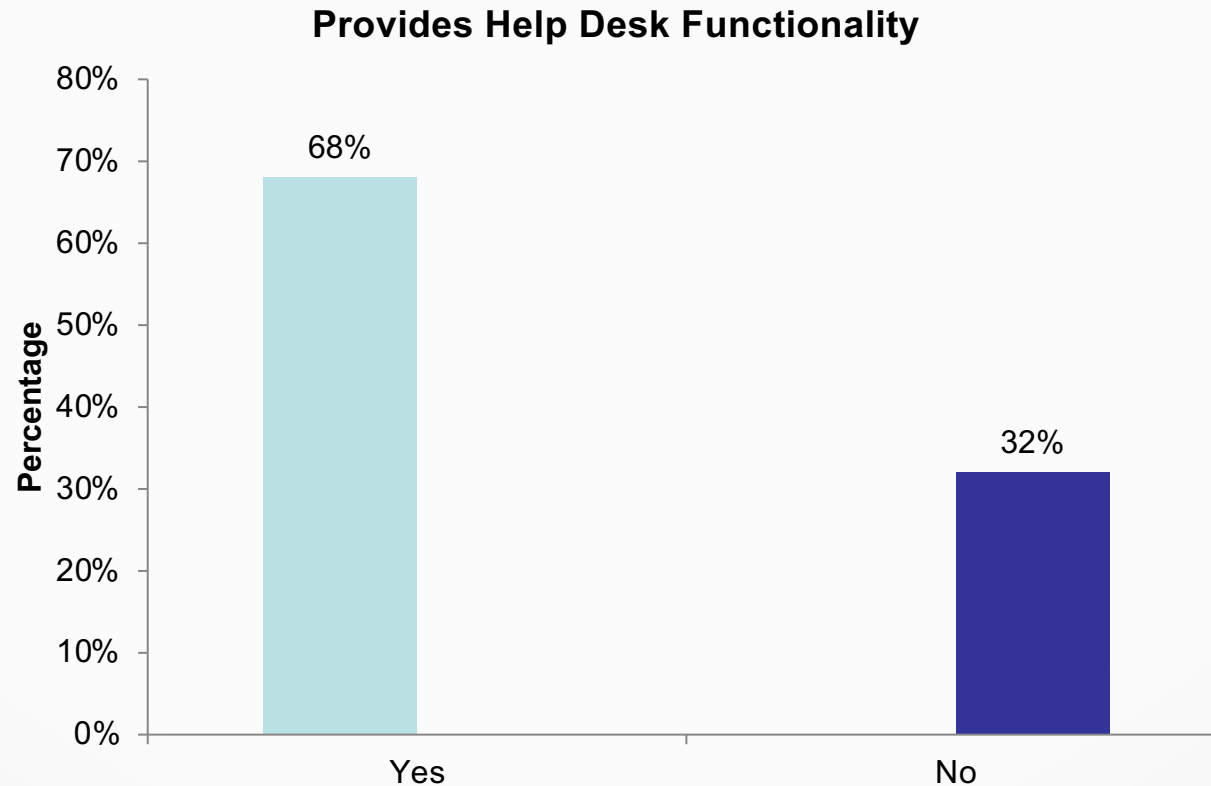
Hosted on campus was the most prevalent response

Courseware Delivery



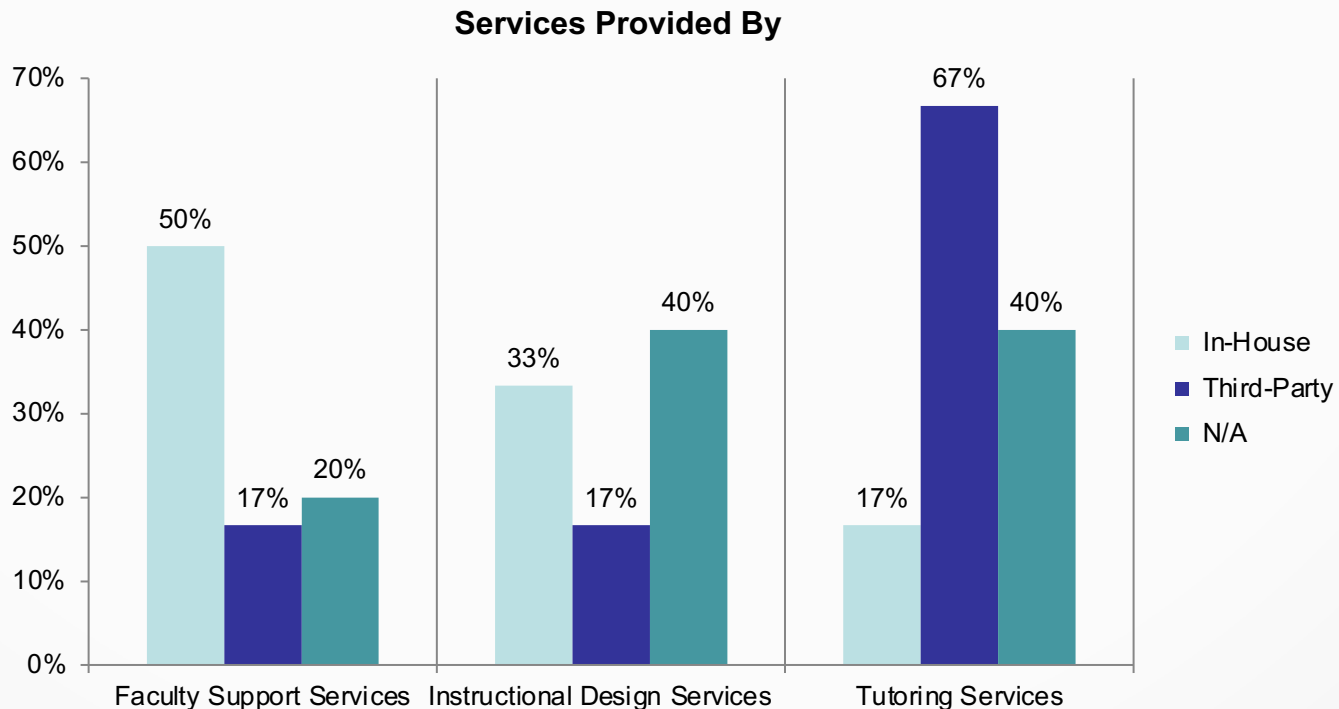
Survey Question #68 & #69: Do you provide Help Desk functionality for your digital courseware? If so, for whom?

Seven of ten providers do and it's almost equally in support of faculty, students and administration



Survey Question #72: Do you provide tutoring services, faculty support services and/or instructional design services?

Half of the Respondents Provided In-House Faculty Support Less Instructional Design & 67% Contracted Out Tutoring Support for Digital Courseware

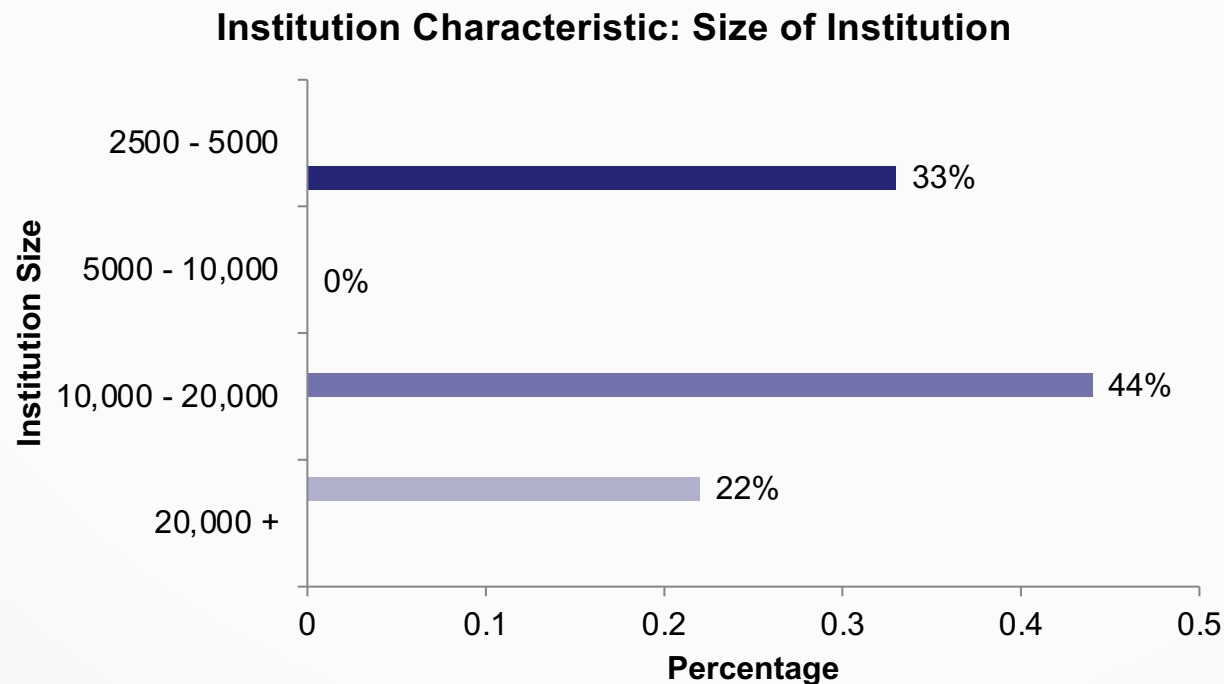


Survey Question #36: Is your organization's evidence of learning outcomes publicly available?



Survey Question #48 : You previously indicated, Institutional Size (Enrollment Size), as a characteristic of early adopters of third-party digital courseware; please specify what size: (check all that apply)

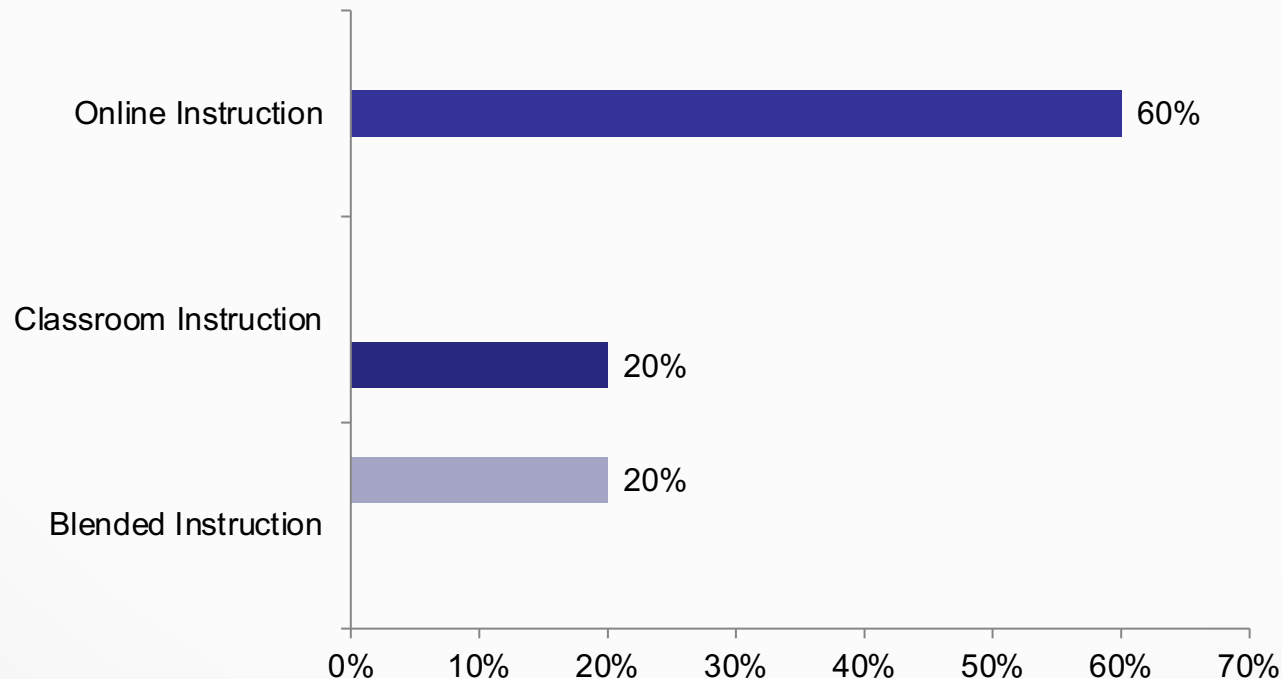
Results indicate Community Colleges & 4yr Public Institutions



Survey Question #49: You previously indicated, course type, as a characteristic of early adopters of third-party digital courseware; please specify what type:

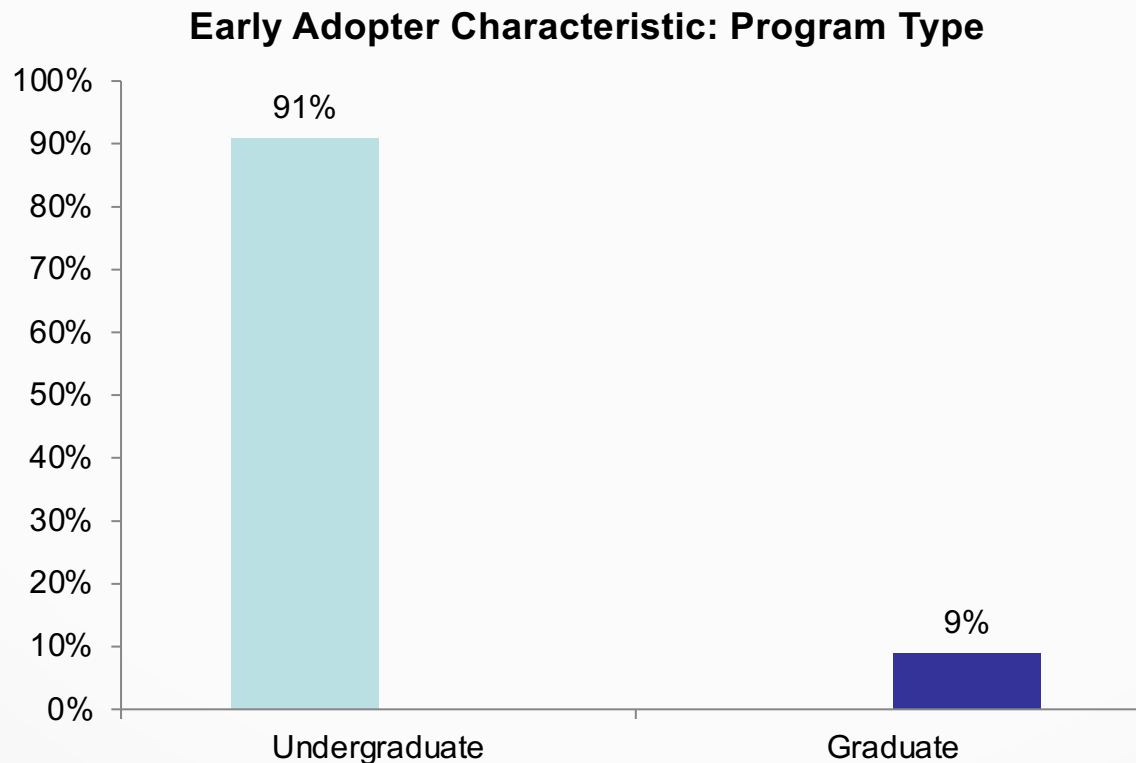
Online Courses use more third-party digital courseware

Early Adopter Characteristic: Course Type Use



Survey Question #50: You previously indicated, Type of Program, as a characteristic of early adopters of third-party digital courseware; please specify what type:

Undergraduate programs represented 90% of the time



Five megatrends are driving the evolution of the Higher Education space

Lower provider entry barriers

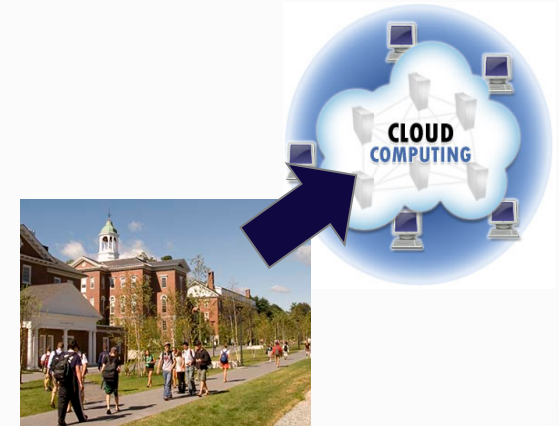
Deconstruction of the teaching craft

Shift of service delivery from campus to 'cloud'

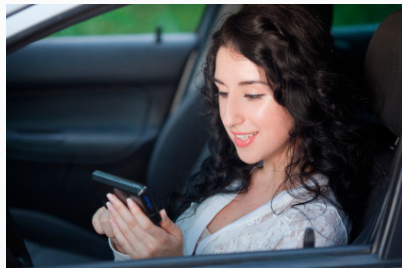
technology



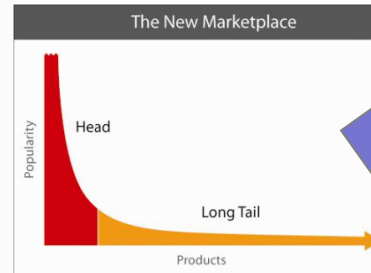
| DIGITAL COURSEWARE | IMPLEMENTATION RESOURCES |
|---|--|
| <ul style="list-style-type: none"> • Digital content, often in a variety of formats (PDF, audio, video, etc.) • Content is often created by subject matter experts (SMEs) and is often high quality • Content is often created by subject matter experts (SMEs) and is often high quality • Content is often created by subject matter experts (SMEs) and is often high quality | <ul style="list-style-type: none"> • Support resources to facilitate the use of digital courseware • Support resources to facilitate the use of digital courseware • Support resources to facilitate the use of digital courseware • Support resources to facilitate the use of digital courseware |
| TOOL PLATFORMS | |
| <ul style="list-style-type: none"> • Learning Management Systems (LMS) software • Learning Management Systems (LMS) software • Learning Management Systems (LMS) software • Learning Management Systems (LMS) software | |



Rise of the learner-consumer



The Long Tail and emergence of the Higher Education consolidator



HQCW Environmental Scan Findings

Discovery #1: Weak Evidence of Improved Learning Outcomes

Survey Results: Evidence of improvement of learning outcomes in post-secondary digital courseware is immature but most prevalent in developmental courseware especially math ...

Providers with evidence of improvement of learning outcomes

DEVELOPMENTAL

| | |
|---------|--|
| Reading | Blackboard Inc, Cengage Learning, Learning Games Network, Pearson, ProTrain LLC, Tata Interactive Systems |
| Writing | Blackboard Inc, Cengage Learning, Learning Games Network, Pearson, ProTrain LLC, Tata Interactive Systems |
| Math | ALEKS Corporation, Blackboard Inc, Cengage Learning, John Wiley & Sons, Pearson, ProTrain LLC, Tata Interactive Systems, Thinkwell |

ESL

| | |
|-----|---|
| ESL | Learning Games Network, Livemocha, Tata Interactive Systems |
|-----|---|

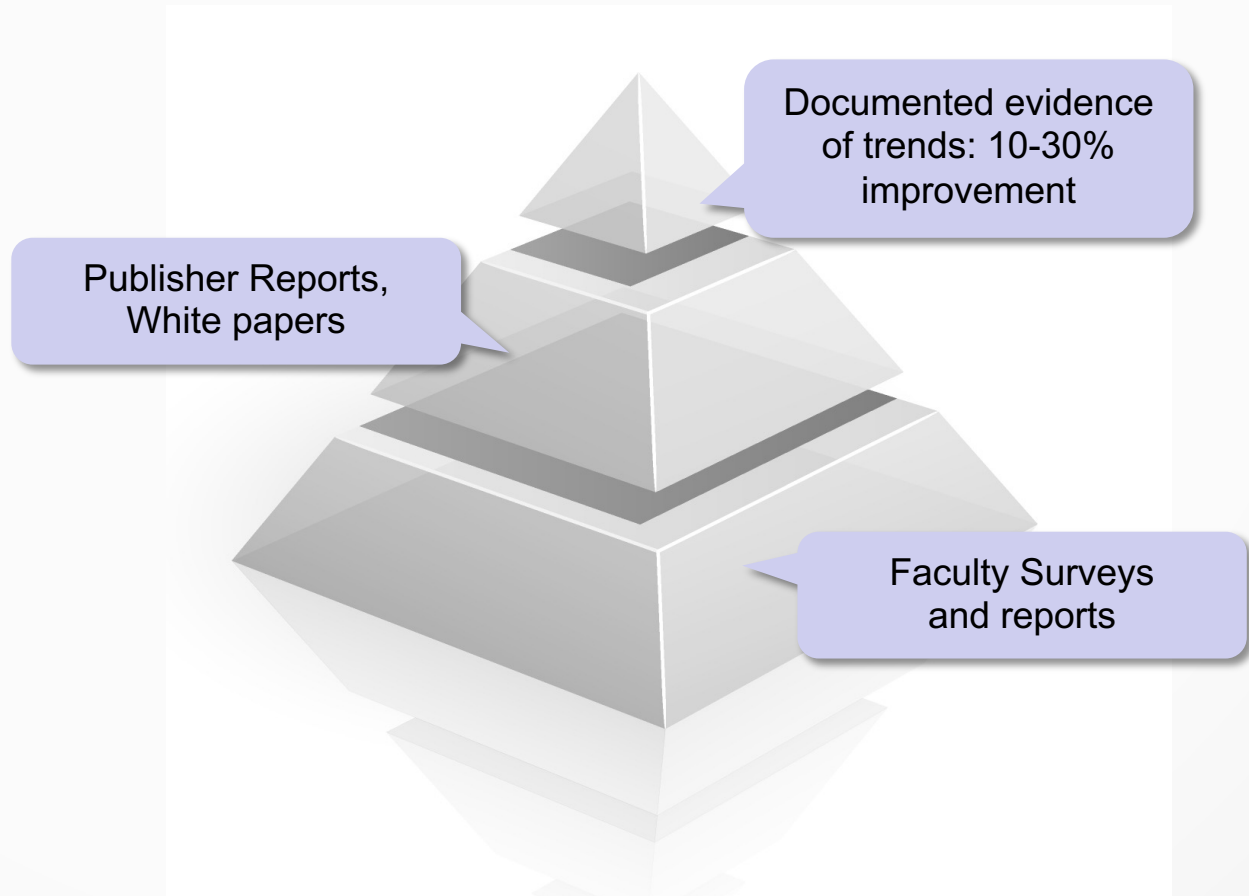
GATEKEEPER

| | |
|-------------------------------|---------------------|
| Physics | MITE |
| Biology | MITE |
| History | MITE |
| English & Math 101/102 | Math Emporium |
| Algebra | MITE, Math Emporium |
| Precalculus & Social Sciences | Math Emporium |

... and the availability of evidence of learning outcomes varies by provider

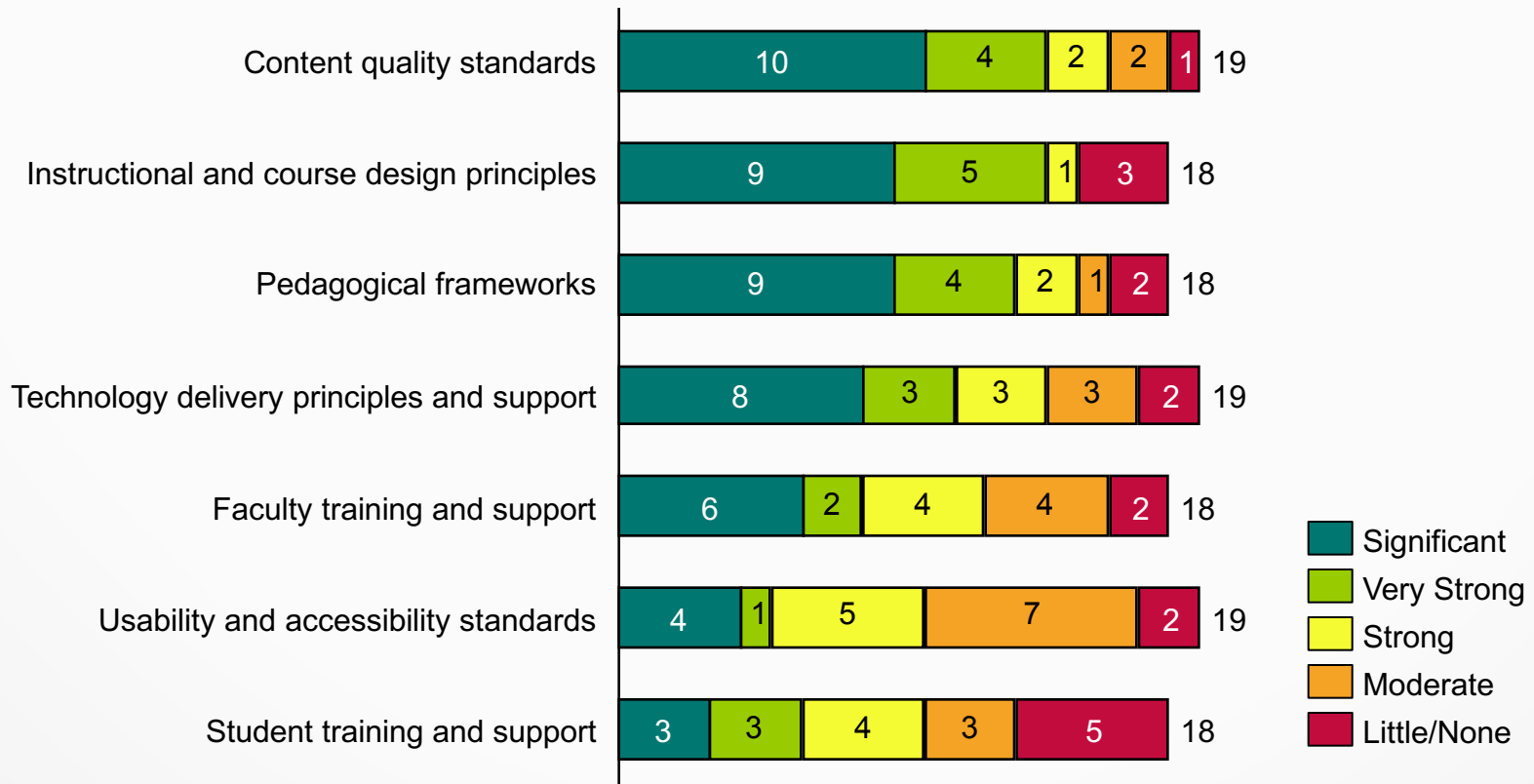
Type of evidence available for learning outcomes

- ALEKS Corporation
- Blackboard/K12
- Carnegie Learning
- Cengage Learning
- Connexions
- DCCCD
- Disney English
- Flat World Knowledge
- John Wiley and Sons
- Learning Games Network
- Livemocha
- McGraw-Hill
- MIT OpenCourseWare
- MITE
- Moodlerooms, Inc.
- Pearson
- StraighterLine
- Tata Interactive Systems
- The Saylor Foundation
- Thinkwell
- Virginia Tech Math Emporium



Survey Results: Content quality standards, instructional and course design principles, and pedagogical frameworks credited with driving learning outcomes

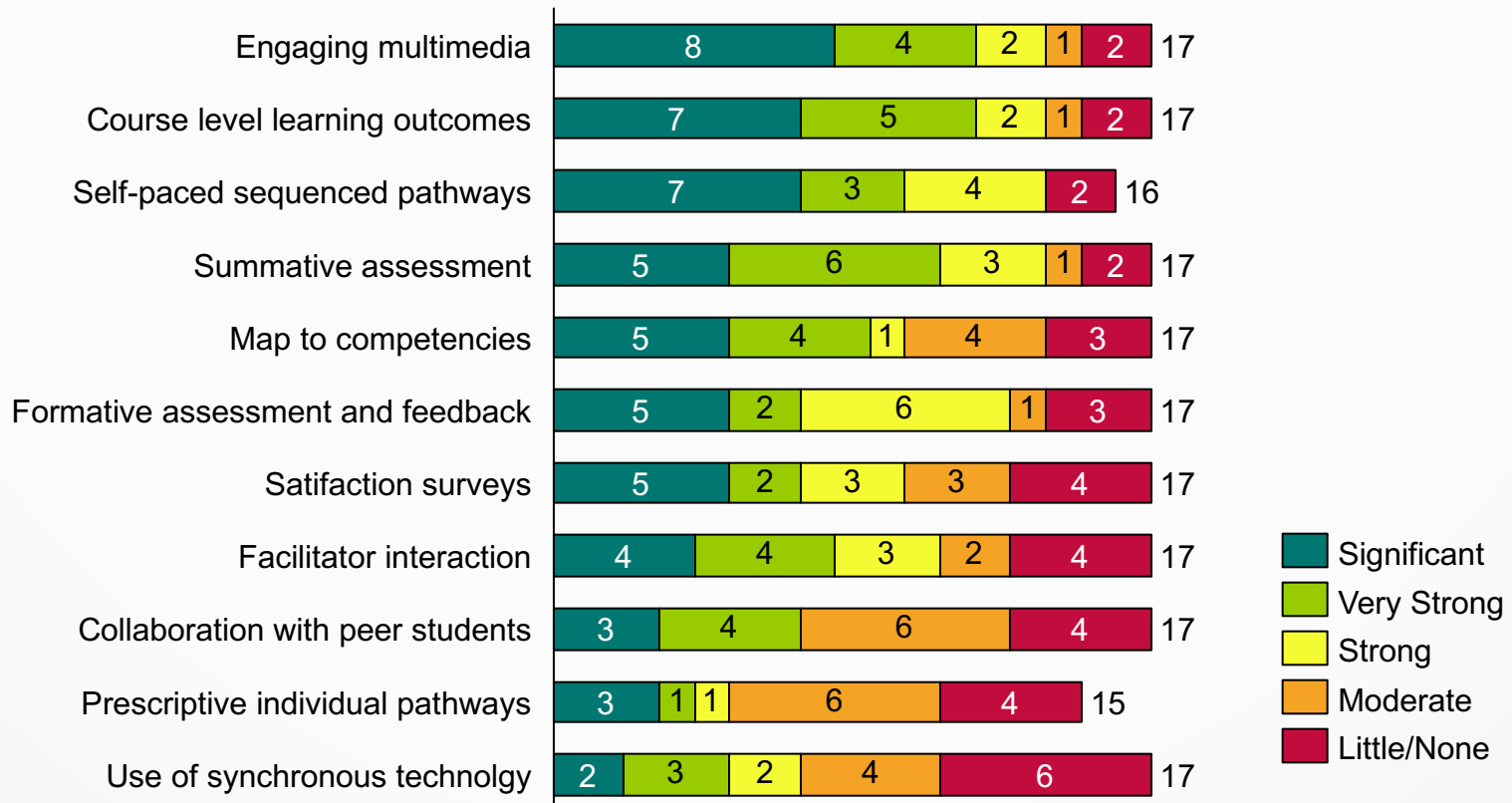
To what degree do you associate the learning outcomes of your digital courseware with the following seven best practice factors for learning development?



Note: These seven factors were identified by the USDLA (2010) as most widely used best practices in course design.

Survey Results: Engaging multimedia, course level learning outcomes and self-paced sequenced pathways credited with driving positive learning outcomes

To what degree do you associate the positive learning outcomes of your digital courseware with the following practices?



Recommendations to Improve Evidence



#1- How people learn??? (updated report)

- We recommend investing in an effort to create an updated and definitive work to inform our science, research, teaching, along with commercial investments in future high quality digital courseware
- The Gates Foundation should consider (co)sponsoring a highly visible updating of this seminal treatment in the context of what we actually know about human cognition, brain research, and the influencing impacts of information technology



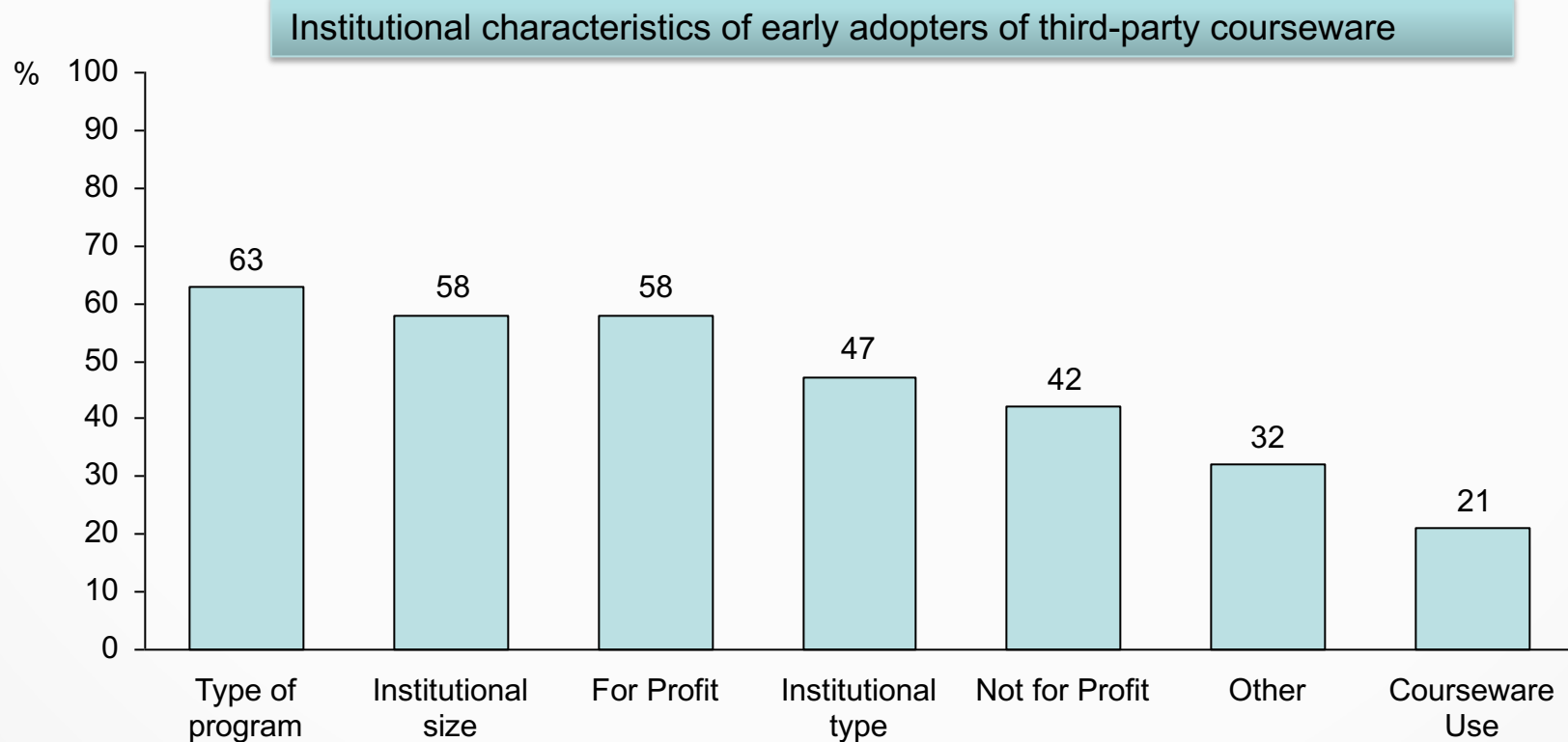
#5 - Annual best-of competition

- The Foundation should consider establishing an annual national competition for large scale, system-wide demonstrations of improved learning outcomes in gatekeeper courses in which institutions, technology partners, publishers, and others both apply for and get admitted into a selective club of national projects (co-)sponsored by the Foundation
- The process focuses on creating re-usable, high quality digital course content and ongoing learning analytics

HQCW Environmental Scan Findings

Discovery #2: Barriers to Adoption Limit Innovation

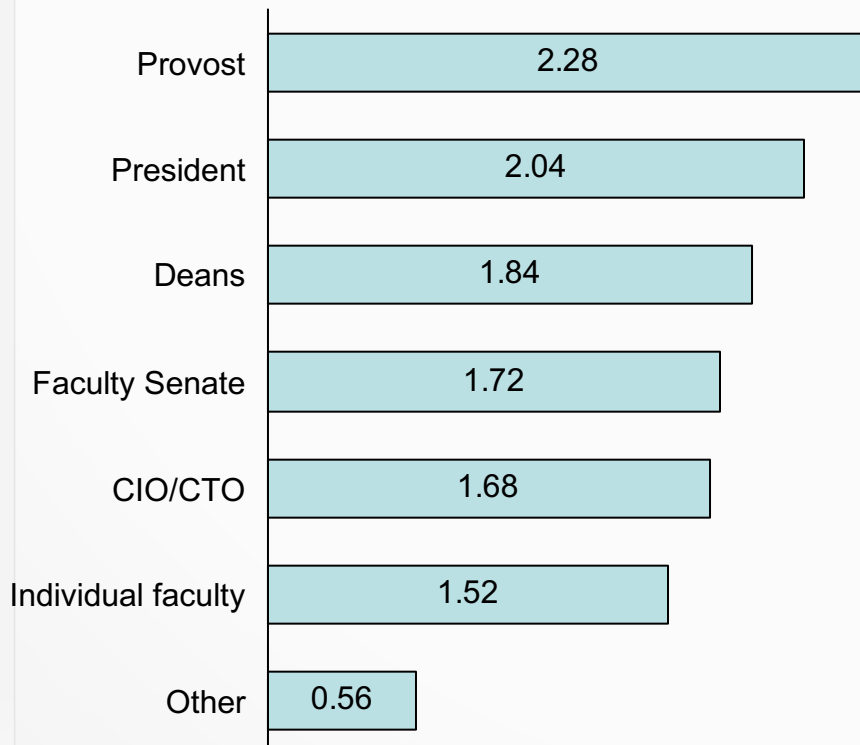
Survey Results: The type of program, institutional size and 'for-profit' are the three leading characteristics of early adopters of third-party courseware



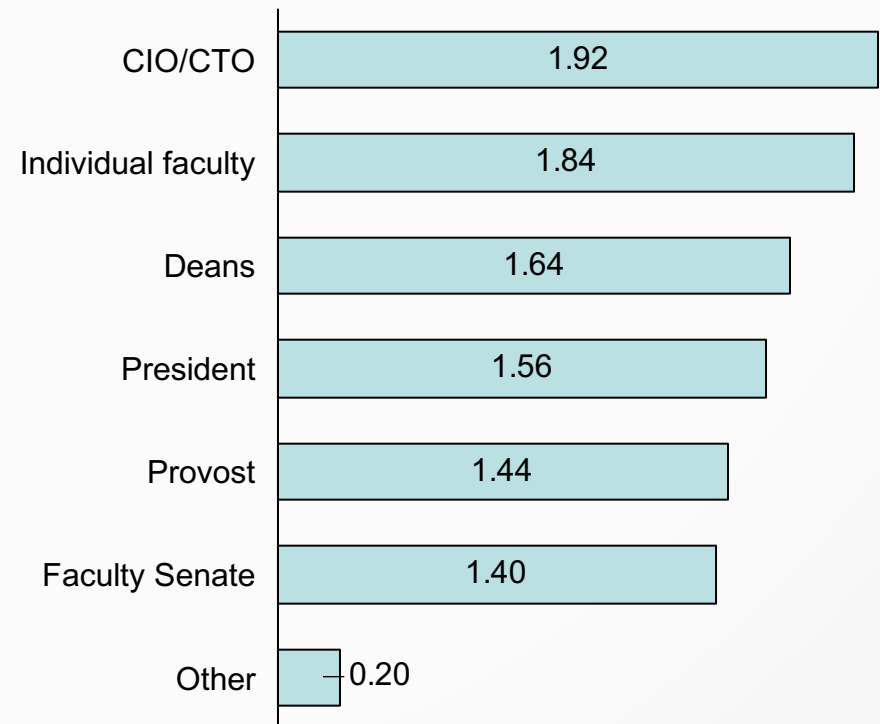
Note: Other includes: online & hybrid programs, white knight in position of decision maker (e.g., president, curricular director, etc), seems to be a resource allocation decision, type of course, random acts of innovation

Survey Results: Decision makers vary. Non-profits driven by provosts and presidents. For-profits driven by CIO/CTO and individual faculty

Roles that drive decision making in third-party digital courseware in non-profits

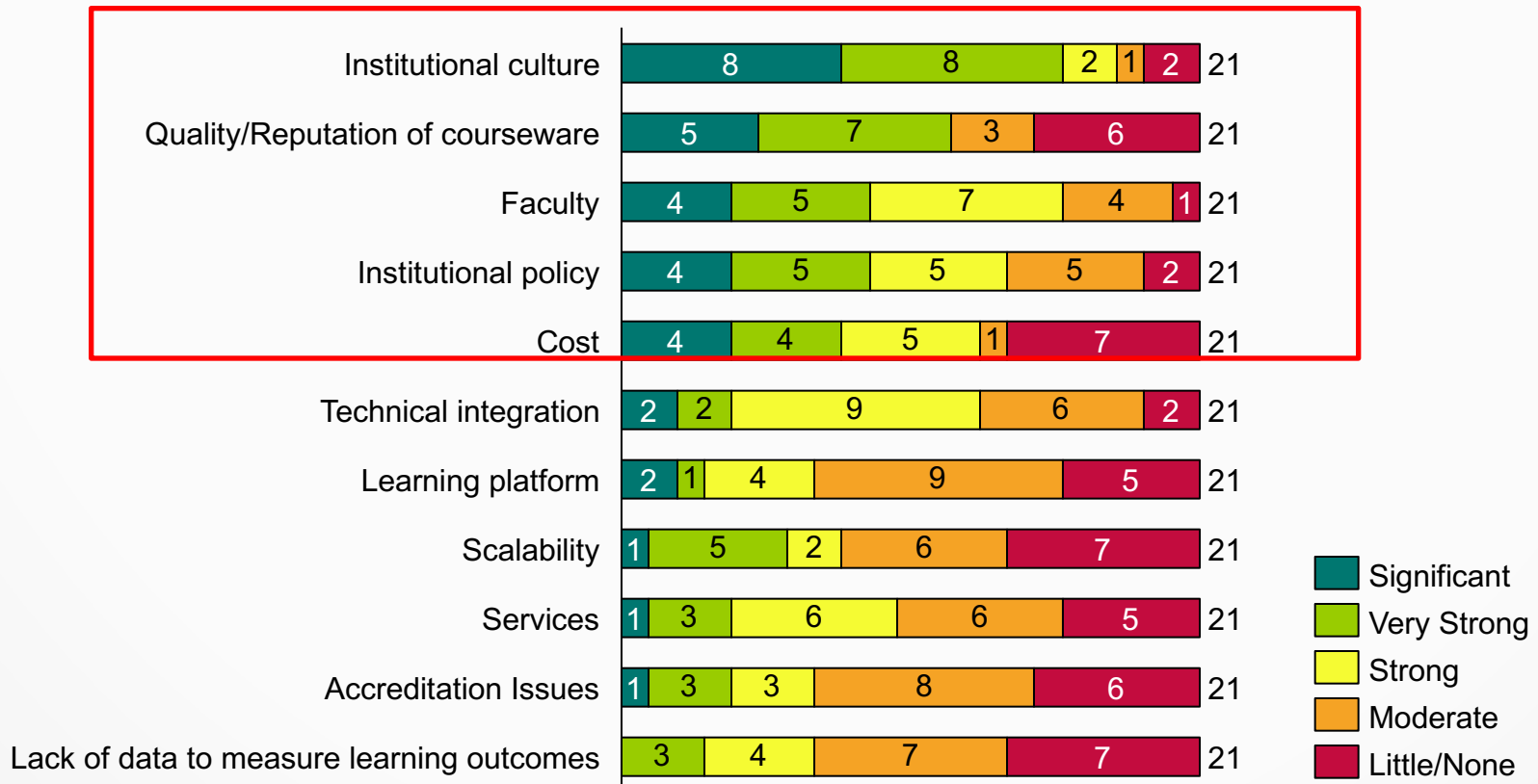


Roles that drive decision making in third-party digital courseware in for-profits



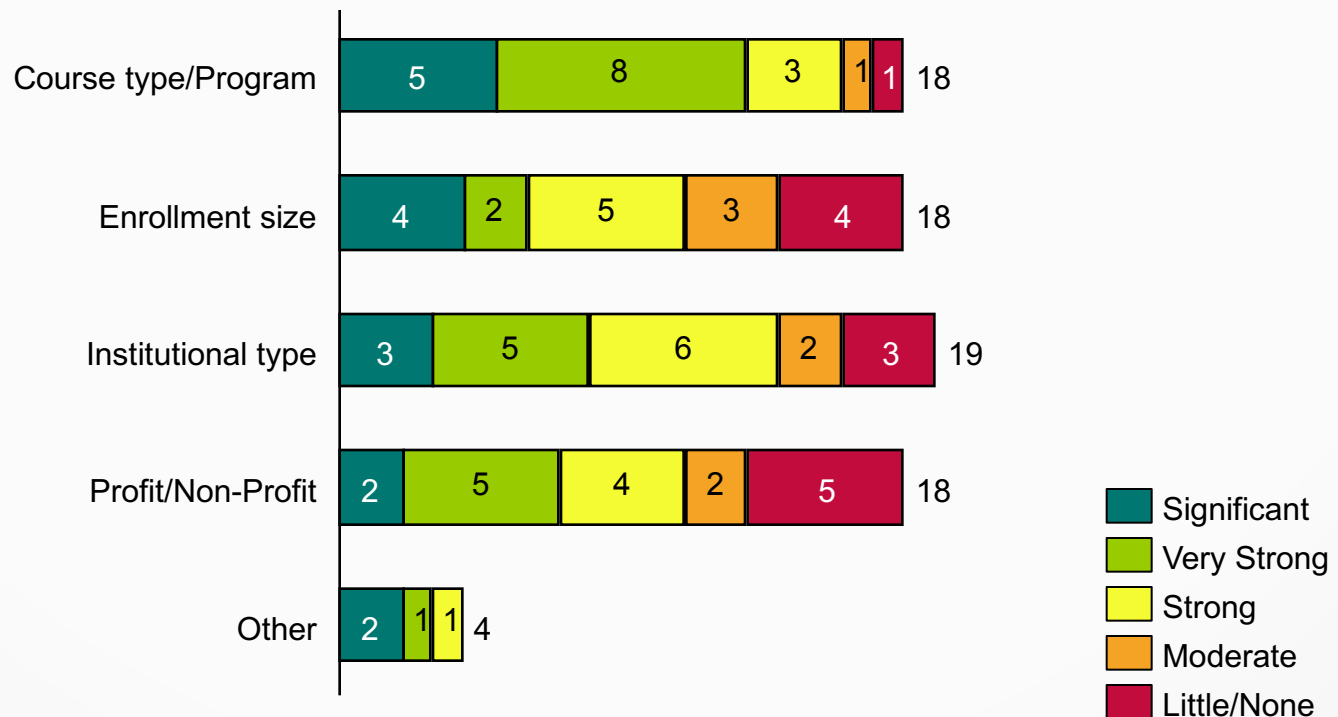
Survey Results: Barriers to adoption include institutional culture and the quality/reputation of the courseware

Institutional Barriers to Adoption



Survey Results: Course type/Program, enrollment size and institution type help providers identify institutions who may be potential adopters of digital courseware

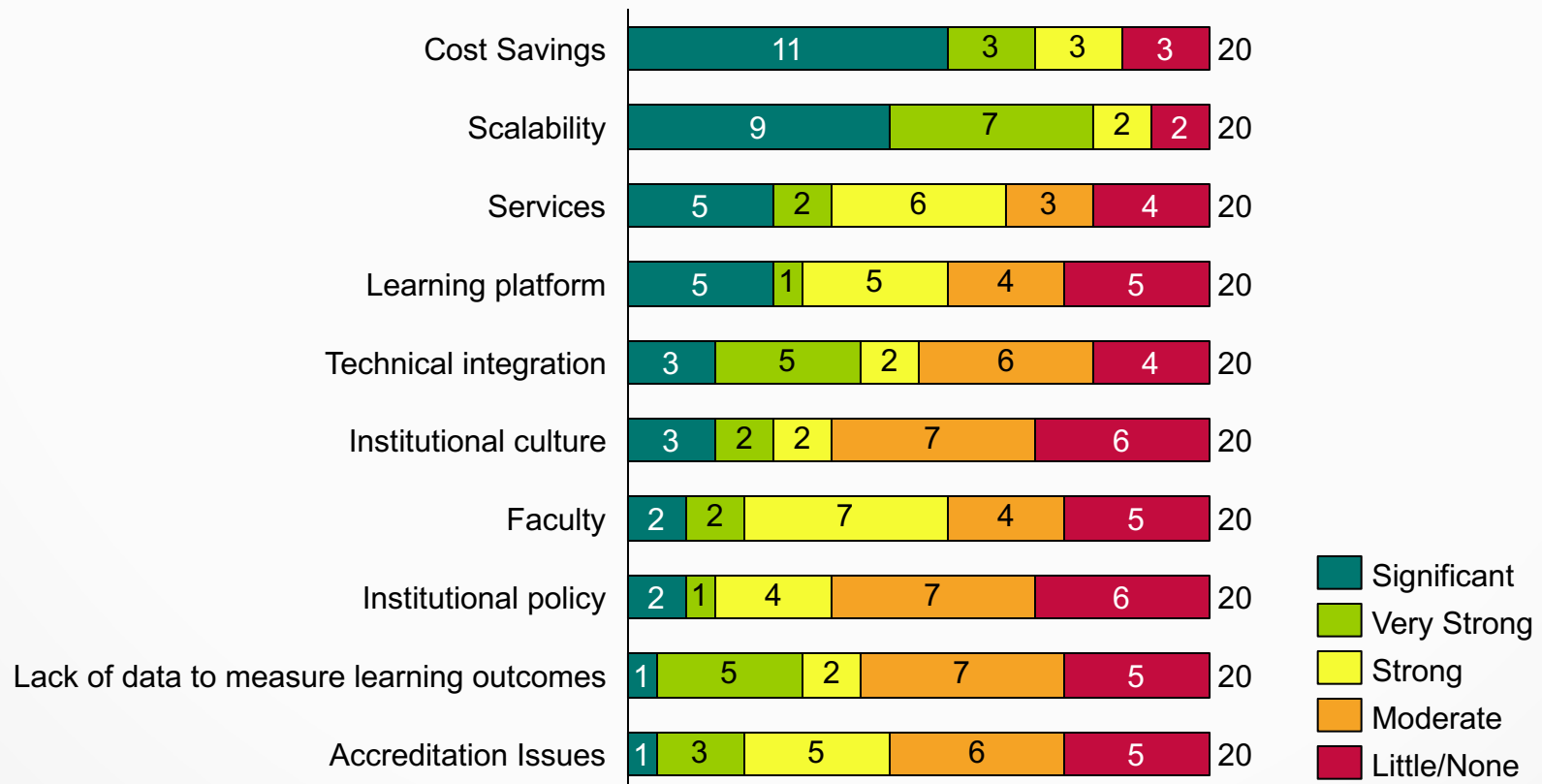
To what degree do these characteristics help you identify the institutions that may be potential adopters of your digital courseware?



Note: Other includes: gateway courses, campus infrastructure, non-credit/corporate division

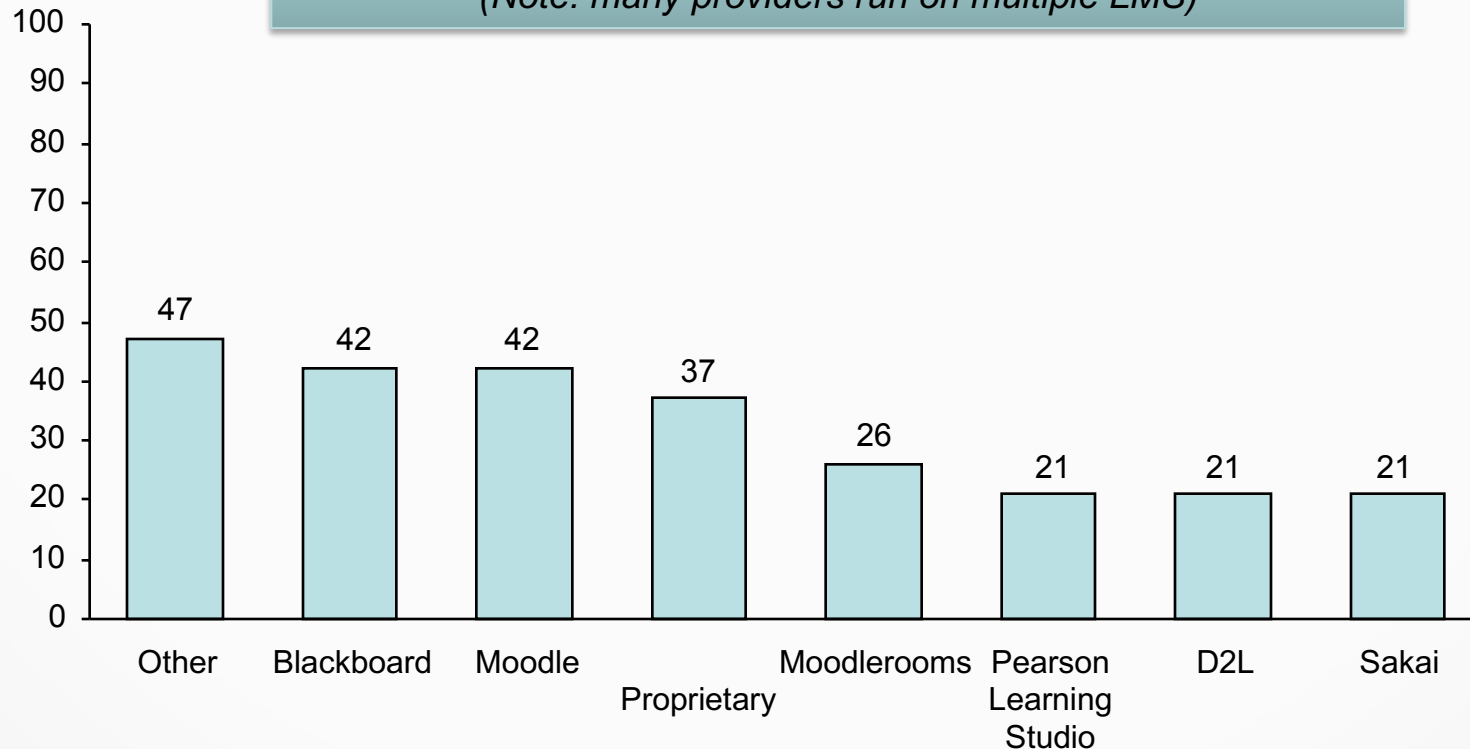
Survey Results: Greatest perceived market opportunities for providers include managing cost and increased scalability

Greatest perceived market opportunities



Survey Results: Many types of LMS platforms are utilized by providers – most popular are Blackboard and Moodle

% of digital courseware providers who use each of these LMS platforms used for delivery of digital courseware
(Note: many providers run on multiple LMS)

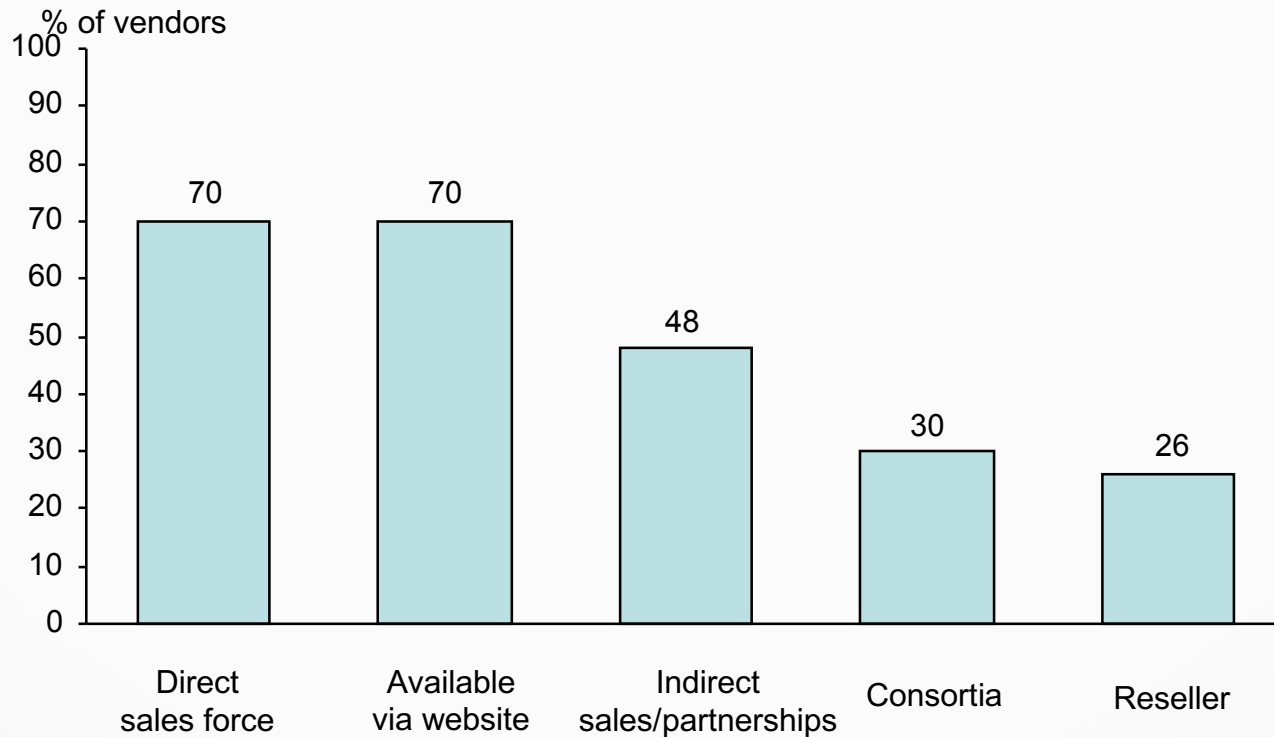


Risk for new entrants/innovation: LMS platform choice is a barrier for adoption by institutions who have standardized on a campus-wide LMS

Note: Other includes: Angel, ISLE, CourseCompass, WPS, Wordpress. Many providers run on multiple LMS (hence the sum of the % in each LMS does not add up to 100%)

Survey Results: Vendors use many ways to market their digital courseware, primarily through a direct sales force and making it available via the website

How do you market your digital courseware?



Risk for new entrants/innovation: cost of sales is very high due to long sales cycles & lack of talent with academic institutional level sales experience

Recommendations to Foster Innovation & Improve Vendor Relationships



#3 - Jumpstart Investment Fund

- The Foundation should consider establishing a JumpStart Investment Fund and strategy in personalized learning technologies to help bridge the gap between educational innovation opportunities and market readiness



#4 - Formal engagement with both large and small publishers

- The Foundation should develop a detailed strategy for engagement with the global post-secondary publishers of academic texts and learning materials
- Left to their own sensibilities and internal business model challenges the publishing industry may be unable to fully cross the chasm
- An incentive based approach to the industry targeting recommendations 2 & 3 may facilitate some of the players in that industry to transition to the digital learning era as they look to re-invent their core business models

HQCW Environmental Scan Findings

Discovery #3: Wide Variation in Quality Features – Deep Dives

Summary of deep dive results: Methodology in design of courseware is immature – more evidence-based learning research is needed

| | Blackboard | Carnegie Learning | Cengage Learning | CIMU OLI | Dallas TCO | Kaplan | LiveMocha | Math Emporium | McGraw-Hill | MITTE | Pearson | StraighterLine | Thinkwell | AVERAGE |
|---|------------|-------------------|------------------|----------|------------|--------|-----------|---------------|-------------|-------|---------|----------------|-----------|---------|
| 1. Learning Outcomes/Objectives | 0.6 | 1.0 | 1.0 | 0.6 | 0.8 | 0.8 | 0.8 | 0.9 | 0.6 | 1.0 | 0.8 | 0.5 | 1.0 | 0.8 |
| 2. Assessment | 0.8 | 0.8 | 1.0 | 0.7 | 0.3 | 0.8 | 0.6 | 1.0 | 0.2 | 0.8 | 1.0 | 0.7 | 0.7 | 0.7 |
| 3. Practice | 0.6 | 1.0 | 0.6 | 0.9 | 0.5 | 0.8 | 0.9 | 0.7 | 0.4 | 0.9 | 0.7 | 0.3 | 0.8 | 0.7 |
| 4. Presentation: Examples | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.8 | 1.0 | 1.0 | 0.7 | 1.0 | 0.8 | 0.7 | 1.0 | 0.9 |
| 5. Presentation: Information | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.8 | 1.0 | 0.9 | 0.5 | 1.0 | 0.7 | 0.3 | 1.0 | 0.9 |
| 6. Content Chunking and Sequencing | 0.9 | 1.0 | 1.0 | 0.9 | 1.0 | 0.8 | 1.0 | 0.9 | 0.9 | 1.0 | 0.6 | 0.9 | 1.0 | 0.9 |
| 7. Motivation | 0.5 | 0.1 | 0.5 | 0.4 | 0.3 | 0.5 | 0.7 | 0.4 | 0.4 | 0.4 | 0.1 | 0.5 | 0.3 | 0.4 |
| 8. Integration | 0.5 | 1.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.7 | 1.0 | 1.0 | 0.0 | 0.0 | 0.6 |
| 9. Overviews | 0.9 | 0.8 | 1.0 | 0.8 | 0.5 | 0.6 | 0.4 | 0.3 | 0.8 | 0.6 | 0.6 | 0.5 | 0.2 | 0.6 |
| 10. Multimedia | 1.0 | 0.6 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.6 | 1.0 | 0.9 | 0.4 | 1.0 | 1.0 | 0.8 |
| 11. Personalization | 0.3 | 0.7 | 0.0 | 0.3 | 0.0 | 0.2 | 0.7 | 0.3 | 0.1 | 0.7 | 0.7 | 0.0 | 0.3 | 0.3 |
| Total | 8.2 | 9.0 | 9.1 | 8.4 | 6.3 | 7.9 | 8.9 | 6.9 | 6.1 | 9.2 | 7.3 | 5.3 | 7.3 | 7.7 |

Learning preferences are on the rise but yet are not being addresses by providers in their current offerings... some are addressing personalization & motivation in their next releases

Note: Courses were not all rated by the same person, and the scores should not be considered comparable across courseware providers.

Recommendation to Foster High-Quality Features



#2 - Next gen digital courseware

- The Foundation should consider a two-track strategy
- The *first* approach should be informed by an effort to optimize text-based digital courseware. The short and mid-term markets will be both the mobile learning market as well as that part of the wireline learning space with limited connectivity – the digital divide
- The *second* track of work should focus on leveraging next generation ultra broadband and with it all of possibilities associated with rich media, 3D modeling, interactive and holographic learning opportunities

Recommendations Summary



How people learn (updated report)



Next gen digital courseware



Jumpstart investment fund



Formal engagement with both large and small publishers



Annual best-of competition