



METAARI

Advanced Learning Technology Research

The 2020-2025 US Mobile Learning Market

Learning in the Bright 5G Air: Revenues in the US Spike to \$5.3 Billion by 2025

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About Metaari

Metaari (formerly Ambient Insight) is an ethics-based quantitative market research firm that identifies revenue opportunities for advanced learning technology suppliers. Metaari publishes quantitative syndicated reports that break out revenues by customer segment (demand-side analysis) and by product category (supply-side analysis). Our forecasts are based on our industry-leading learning technology taxonomy and our educational game framework.

We track the learning technology markets in 126 countries. We have the most complete view of the international learning technology market in the industry. Metaari focusses solely on advanced learning technology research on products that utilize mobility, psychometrics, neuroscience, game mechanics, robotics, location intelligence, cognitive computing, artificial intelligence, virtual reality, and augmented reality.

About the Analyst

Sam S. Adkins is the CEO and Chief Researcher at Metaari. Sam has been providing market research on the learning technology industries for over twenty years and has been involved with digital training technology for over thirty-five years. Sam is an expert at identifying revenue opportunities for global learning technology suppliers.



Dubai, United Arab Emirates, 2013 (Photography by Tyson Greer)

Sam was the co-founder and Chief Research Officer for Ambient Insight between 2004 and 2016 before rebranding the company to Metaari in early 2017.

Sam was a business development manager for Microsoft's Training and Certification group. During his eight years at Microsoft, he managed the Advanced Knowledge Engineering team that built the world's first commercial online learning business (The Microsoft Online Learning Institute). Prior to that, he was a Senior Instructional Designer at United Airlines.

Before United Airlines, Sam was the manager of the Instructional Animation and Graphics Lab at AT&T's central computer-based training (CBT) facility for four years.

Sam Adkins and Tyson Greer founded Ambient Insight in 2004. Ambient Insight ceased operations in late 2016 and rebranded as a new company named Metaari that launched in January 2017.

" Ambient Insight had been in operation for twelve years and we have a well-respected brand and a very successful company," comments Adkins. "The global learning technology market has changed dramatically in the last few years and the new advanced learning products coming on the market essentially represent a 'brave new world' in education. We want to be an active part of this new world and launched our new company to focus on these incredible innovations."



Executive Overview: 5G is a Game Changer

The five-year compound annual growth rate (CAGR) for Mobile Learning in the US is a healthy 20.6% and the revenues will more than double to over \$5.3 billion by 2025.

The US will be the top buying country across the forecast period. In the 2020 market, China was the second-largest buying country. By 2025, Indonesia will be the second-largest buying country followed by India. China will drop to fourth place. The five-year compound annual growth rate (CAGR) for Mobile Learning in the US is 20.6%.

In stark contrast, the growth rate in China is 5.4%. For a variety of socio-economic reasons (particularly regulatory uncertainty), revenues for Mobile Learning in China will start to decline in 2024.

There are a number of factors inhibiting the market for Mobile Learning in China. The primary inhibitor is the growing number of regulations being imposed by the government including the laws limiting screen time for children and laws prohibiting unapproved apps in the schools. There are also strict guidelines on the type of content allowed in the country. Game developers must get government approval to sell products in China. The government has made it quite difficult for developers to get to market.

In the current market, consumers account for the vast majority of revenues due to the near insatiable demand for early childhood learning apps, language learning apps, and cognitive fitness products. This will change over the forecast period with the corporate buyers outspending consumers by 2025.

The spike in revenues in the corporate segment is due to the high demand for pre-employment assessment apps, field-based performance support, and remote expert apps.

The US Mobile Learning market is being driven by a tailwind of catalysts including the roll out of very fast 5G wireless networks, next-generation location-based technology, smartphone-enabled virtual reality, mobile augmented reality, and artificial intelligence-based apps. ***The rollout of commercial 5G networks is having a dramatic impact on the global Mobile Learning market; 5G is essentially a fundamentally new delivery platform.***

Over 650 suppliers operating in the US are cited in this report to help international suppliers identify local partners, distributors, resellers, and potential merger and acquisition (M&A) targets in the US.

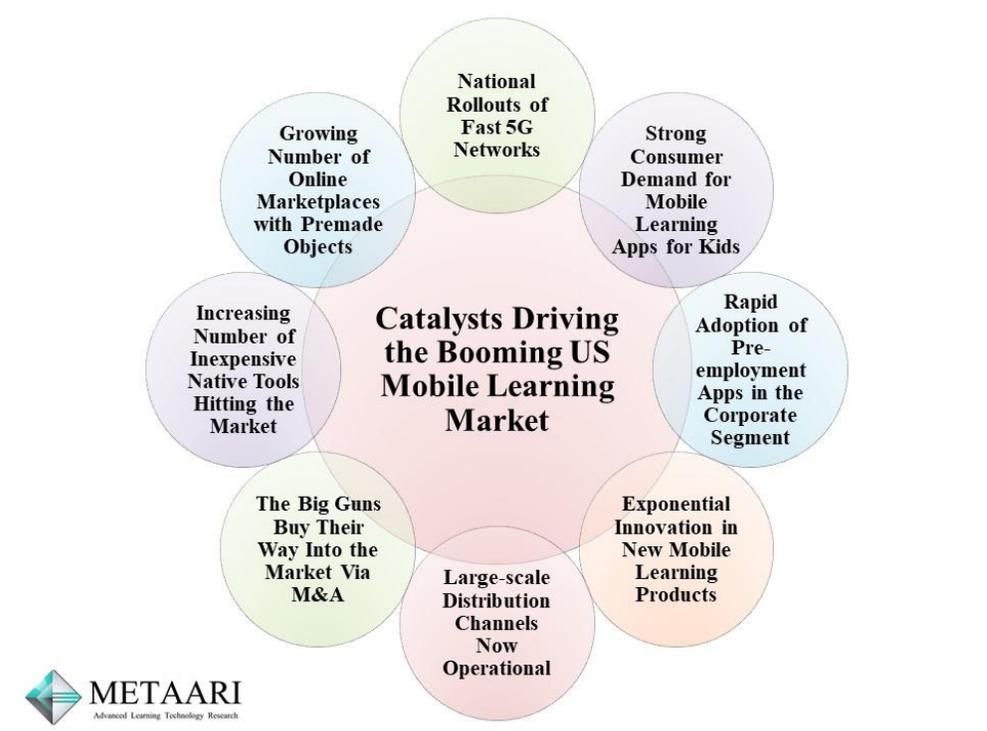
Primary Catalysts Driving the US Mobile Learning Market

The primary catalysts in the Mobile Learning market in the US include:

- Blindingly fast 5G networks reinvent the learning landscape
- Strong consumer demand for Mobile Learning content for kids
- Rapid adoption of pre-employment assessment and evaluation apps in the corporate segment
- Exponential innovation in new Mobile Learning product types
- The availability of large-scale national distribution channels
- The surge in merger and acquisition (M&E) as the large tech companies "buy their way in" to the Mobile Learning market
- The expanding availability of inexpensive and easy-to use native development tools
- The growing number of marketplaces that sell (or give away) premade digital 3D objects, 3D virtual lifeforms, and even virtual worlds

There is a range of secondary catalyst driving the US Mobile Learning market including the rollout of Wi-Fi 6, advances in AI, the rapid evolution of mobile devices, and the exponential innovation in AR and VR technologies.

Figure 1 – The Primary Catalysts in the Booming 2020-2025 US Mobile Learning Market



A host of new commercial Mobile Learning products are now on the market including smart Location-based Learning apps, industrial augmented mobile decision support products, and more recently, smartphone-enabled virtual reality (VR) education apps. These next generation products are altering the competitive landscape and represent significant new revenues for content suppliers.

Until recently, corporations were slow adopters of Mobile Learning, largely because there was no business need in companies that employ information workers. Self-paced eLearning is still the dominant learning technology type used to train information workers; they spend the bulk of their day on computers.

Mobile Learning has finally gained traction in the US corporate segment due in large part to the growing adoption of augmented mobile performance and decision support products in particular industrial verticals like warehousing, manufacturing, energy, aviation, automotive, and in clinical and field-based companies. Corporations are adopting pre-employment evaluation and assessment games in the US (and across the planet). New suppliers continue to come on the market at a rapid pace and they are attracting a significant amount of investment capital.

Yet, it is the advent of the new blindingly fast 5G networks that will alter the Mobile Learning landscape forever. Of all the catalysts, 5G will dramatically alter the competitive landscape over the forecast period. Ericsson predicts that by 2024, "5G subscriptions will reach 1.9 billion, and that coverage could blanket up to 65% of the world's population."

In February 2019, the GSM Association forecast that "5G is on track to account for 15% of global mobile connections by 2025 and to contribute €1.94 trillion (\$220 trillion USD) to the worldwide economy over the next 15 years." The trade association predicted that there would be at least 1.4 billion 5G subscriptions by 2025. ***They predicted that half of all subscriptions in the US and 30% in China would be 5G by 2025.*** "We will connect more than a billion new people to the mobile internet over the next few years, spurring adoption of mobile-based tools and solutions in areas such as agriculture, education and healthcare."

The launch of Apple's ARKit and Google's ARCore SDKs in 2017 is a major catalyst for Mobile Learning going forward. ***There will be billions of phones with native AR support in just 2-3 years.***

What You Will Find in This Report

There are four sections in this report: an executive overview with a brief discussion of the primary catalysts, a detail analysis of the catalysts, a demand-side analysis by eight buying segments, and a supply-side analysis for four Mobile Learning products and services.

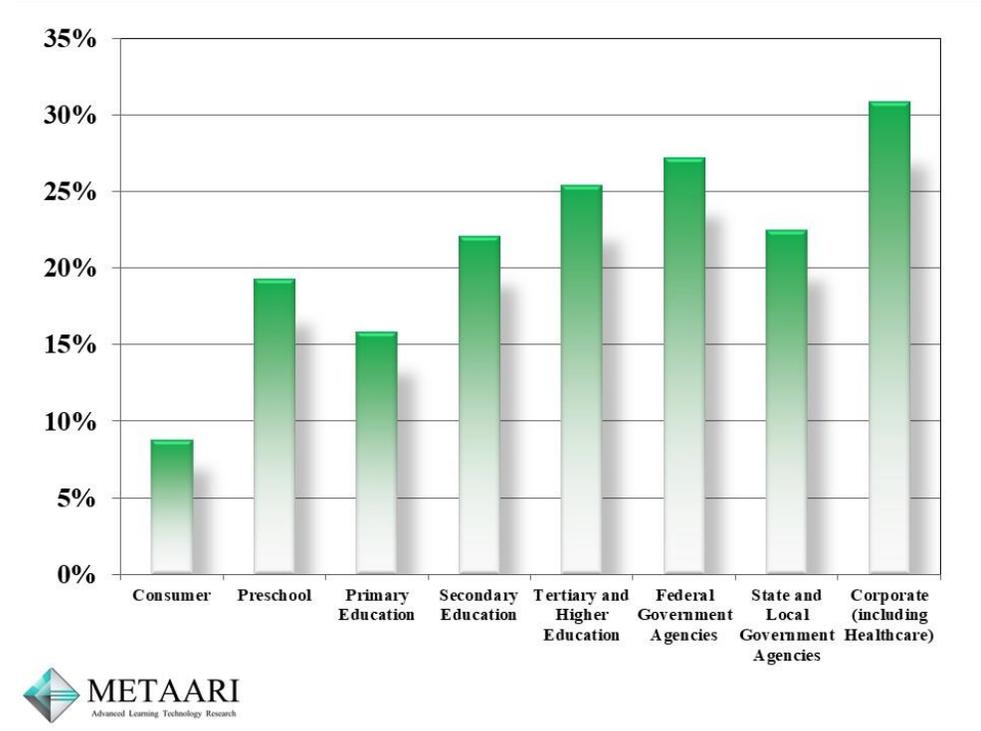
Over 650 suppliers competing in the US are cited in this report. This will help international suppliers identify local partners, distributors, resellers, and potential merger and acquisition (M&A) targets.

This report includes revenues for training and education content for handheld devices, wearables, and untethered headsets. It does not include revenues for content designed for tethered devices. Revenues for hardware devices are not included in this report.

Who are the Buyers?

There are eight Mobile Learning buying segments analyzed in this report: consumers, three academic sub-segments (preschools, primary schools, and secondary schools), tertiary & higher education institutions, federal government agencies, state & local government agencies, and corporations & businesses.

Figure 2 - 2020-2025 US Mobile Learning Growth Rates for Eight Buyer Segments



Consumers were the top buyers in the 2020 US Mobile Learning market. By 2025, corporations will be the top buying segment followed by consumers. Consumers have "the lowest" growth rate for Mobile learning in the US at 8.8%. Yet, this is very high growth rate for a mature market.

Lessons Learned: Pivoting to the Business Segment

It has become apparent that the consumer demand for both AR and VR is quite weak. Devices are still relatively expensive, and except for games, content is a weak link in the consumer story. The major headset developers are pivoting away from the consumer segment and are now marketing their products to corporations and government agencies.

Cornerstone OnDemand is a legacy eLearning provider and announced in November 2019 that they were partnering with Oculus "to help shared clients utilize data to build better virtual reality (VR) training experiences. Through the partnership, shared clients of Cornerstone and Oculus for Business, launched earlier this year to make it easier for companies to bring headsets, including the Quest, into the workplace."

Oculus launched Oculus for Business in April 2018. "Oculus for Business offers a secure and reliable VR solution for enterprise customers. The offering includes software to set up and manage VR deployments, a tailored in-headset experience and enterprise-grade customer support. Oculus for Business was designed for professional settings and enterprise needs. Making learning and collaboration tasks more immersive helps employees focus on the tasks at hand."

Google launched their Google Glass Enterprise Edition 2 in May 2019. They also announced that support for their consumer device, Glass Explorer Edition will be discontinued in 2022. The company has essentially admitted that their consumer push has been unsuccessful with some analysts calling it an outright failure. The Glass Enterprise Edition is being used by more than 50 businesses in the US, including AGCO, DHL, Dignity Health, NSF International, Sutter Health, Boeing, and Volkswagen.

HTC launched their VIVE Enterprise Solutions business unit in July 2019. "Recognizing that hardware alone isn't enough, this new business organization combines software, hardware, professional services, business solutions, and support to address four key areas where enterprises are

investing today: Training and Simulation, Design and Visualization, Virtual Collaboration, and Location-Based Entertainment and Attractions." HTC launched their untethered VR headset called the Vive Focus Plus in early 2019. Despite the fact that HTC claims that the Focus Plus is a popular headset with consumers in China, the company did not release a consumer version in the US.

In December 2019, Magic Leap announced a pivot from the consumer segment to the corporate segment and announced a new set of services for corporate clients. At that time, they announced that they had only sold on 6,000 of their AR headsets in the first six months after launch, far from the 100,000 they wanted to sell in the first six months. They now offer a "slightly updated version of its mixed reality headset and a set of spatial computing services specially designed to help corporations collaborate in virtual spaces. ***The first mixed reality services fall into four basic buckets: collaboration, location-based experiences, 3D visualization, and training (also called Learn and Assist).***"

Microsoft has always marketed the HoloLens to corporations (particularly the industrial vertical and the healthcare sectors) and government agencies.

- "The final group of apps are designed to train employees for specific tasks while they're in the actual work environment and able to work hands-free, as opposed to in a classroom or training space. For instance, a remote trainer or expert might show a worker how to repair a machine in a manufacturing facility. Enterprises have used VR and AR to train employees, but this really takes it to the next level."
- Magic Leap provides the development tools and other resources for enterprise customers to build their custom versions of the apps. The new Magic Leap Enterprise Suite, priced at \$2,995, includes the Magic Leap 1, an updated version of Magic Leap One Creator Edition, as well as two years of access to enterprise-level support, Device Manager, that lets administrators manage hardware and software remotely.

Magic Leap is referring to their new enterprise bundle as a spatial computing platform. "To make the most of the spatial computing platform for collaboration, visualization, training, and location-based experiences, Magic Leap has partnered with Arvizio, EON Reality, Immersion Analytics, Immersiv, Flow Immersive, Nomtek, Minsar, Obsess, PTC, RoOomy, Spatial, Spatiate, Taqtile, Verses, and VIM to create applications in these core areas."

Corporations have the highest growth rate at 30.9% followed very closely by federal agencies at 27.2%. The demand for Mobile Learning in the corporate segments is being driven by the rapid uptake of pre-employment evaluation and assessment apps (usually in the form of games), field-based performance support, and remote expertise apps.

The PreK-12 segment is broken out by the three sub-segments because the buying behavior and the user demographics are quite different in each cohort. The combined growth rate for the preschool segment is 19.3% and revenues will more than double over the forecast period. The preschool segments are quite similar to the consumer buying behavior with early childhood learning app and language learning apps for kids in high demand. Learning content in the preschools are mapped to basic academic subjects such as numbers, letters, and sounds. The content maps to developmental stages of the young kids. Mobile Learning games have been proven to be quite effective at teaching young children social and emotion learning (SEL) skills in the preschools.

The growth rate for Mobile Learning in the primary and secondary academic sub-segments are 15.8% and 22.1%, respectively. The types of Mobile Learning apps and games used in the primary and secondary sub-segments are very different as they map to scaffolding curricula. For example, STEM games are more common in middle school and high school programs. Language learning apps and games are in wide use in language learning programs across all the academic sub-segments.

One major catalyst in the PreK-12 segment is the availability of cost-effective AR and VR Classroom Kits that come with untethered headsets preloaded with educational content. UK's ClassVR (an Avantis brand) is a major Classroom Kit supplier in the US. These kits almost always ship with Google Expeditions experiences. As of late 2019, there were over a thousand VR Google Expeditions and hundreds of AR Expeditions on the market. Other suppliers that sell Classroom Kits in the US include Aquila Education, Lenovo, Office Depot, Synnex, Tierney, and Troxell.

Lenovo launched their VR classroom kit in early 2018. "Lenovo Virtual Reality Classroom focuses on delivering a robust teaching and learning VR experience and aims to create a blended learning environment that is content-rich, immersive, and easy-to-use.

- Lenovo Virtual Reality Classroom contains pre-loaded software filled with rich content, and the package includes a commercial warranty, premier-level support and professional development." The

content includes over 700 Google Expeditions, ten STEM lesson plans from Scholastic, and three Jane Goodall "Wild Immersion" videos.

Both federal and state government agencies buy Mobile Learning content for government initiatives including language learning, tourism, literacy, healthcare, and, in some countries, for employee, first responders, military, security particularly cybersecurity) training, and vocational training. Mobile procedural learning apps are used for equipment maintenance.

The state and local government agencies have a robust growth rate of 22.5%. Many state and local agencies fund education systems but those expenditures are pulled out into the academic sub-segments in this report.

What Are They Buying?

The supply-side section provides revenue forecasts for four types of Mobile Learning products and services in the US including:

- Packaged retail education apps and edugames
- Mobile Learning as a Service (MLaaS)
- Custom content development services
- Authoring tools and platforms

Custom development services have the highest growth rate at 47.9%. Revenues will more than quadruple for this type of service over the forecast period. All the organizational buyers pay developers to create custom content. Corporations are the largest buyers of this type of service.

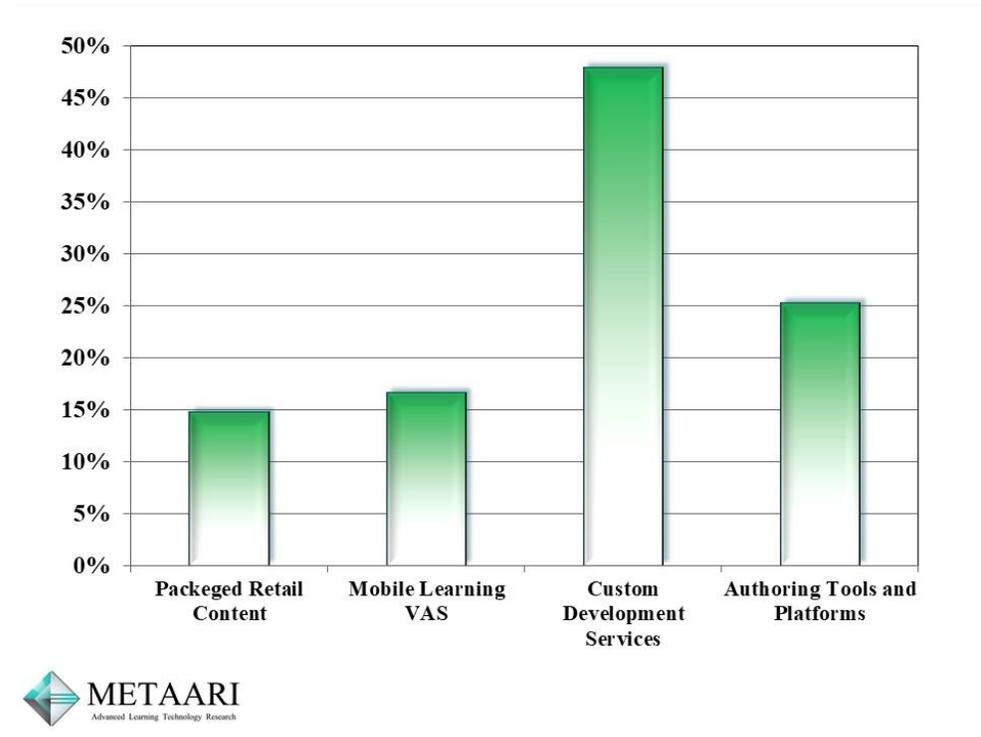
Mobile Value-added Services (VAS) are common across the globe *except in North America*. The mobile network operators (MNOs) are major distributors of Mobile Learning products outside the US. Yet, there is a small demand for Mobile Learning VAS in the US but the telecoms and MNOs are not involved. The Mobile Learning VAS product type is rapidly evolving into Mobile Learning as a Service (MLaaS) as 5G rolls out globally.

Metaari defines three types of "native" Mobile Learning products: Mobile Decision Support, Location-based Learning, and Mobile Learning VAS (value added service). The first two are usually sold as retail software apps and the third is sold on a subscription basis.

This report only includes native tools and platforms that are "mobile-first", if not mobile-only. Most legacy eLearning LMS products can handle mobile formats but they were not originally designed to do that: mobile is essentially tacked on. Some legacy suppliers have upgraded their tools to create so-called responsive content, usually in the form of HTML5. The content is authored once and is supposed to display properly on any device. Native Mobile Learning tools and platforms have a robust growth rate of 25.2% and revenues will more than double by 2025.

Mobile device-enabled (handhelds and wearables) decision support products are in wide use in clinical healthcare organizations, the military, and in public safety and first responder agencies. One of the major mobile decision support products used in healthcare is Wolters Kluwer's UpToDate tool *that is now used by over a million clinical healthcare workers across the planet*. Mobile decision support tools are used in first responder situations dealing with biohazards and environmental disasters.

Figure 3 - 2020-2025 US Mobile Learning Five-year Growth Rates by Four Product Types



The demand for custom Mobile Learning content development services is the highest of all product types at 47.9% and revenues will grow nearly five times over the forecasts period. The demand is being driven by

corporations, tourist venues, and healthcare sectors; all of which require custom solutions.

- There is now a strong demand for custom decision support and pre-employment assessment and evaluation apps in the corporate segments in the developed economies. Tourist and exhibition venues need highly customized apps with content mapped to specific locations. The apps are by definition Location-based Learning. Healthcare verticals require customized decision support solutions.

In the US, the Mobile Learning apps in the highest demand are early childhood learning games, language learning apps, and brain trainers. Mobile apps for kids are in high demand. Language learning app developers and brain training companies have started to launch versions of their products designed specifically for young children.

Test prep apps for standardized academic tests are in high demand in so-called exam cultures like South Korea, India, China, and Japan but not so much in the US. Test prep apps for medical licensure are in high demand and can command high price points. The growth rate for mobile test prep in the US is now flat.

The US growth rate for packaged retail mobile education content is 14.7%. The vast majority of Mobile Learning revenues in the US are generated by the sales of packaged content to consumers. This is changing fast as corporations rapidly migrate to a range of Mobile Learning content.

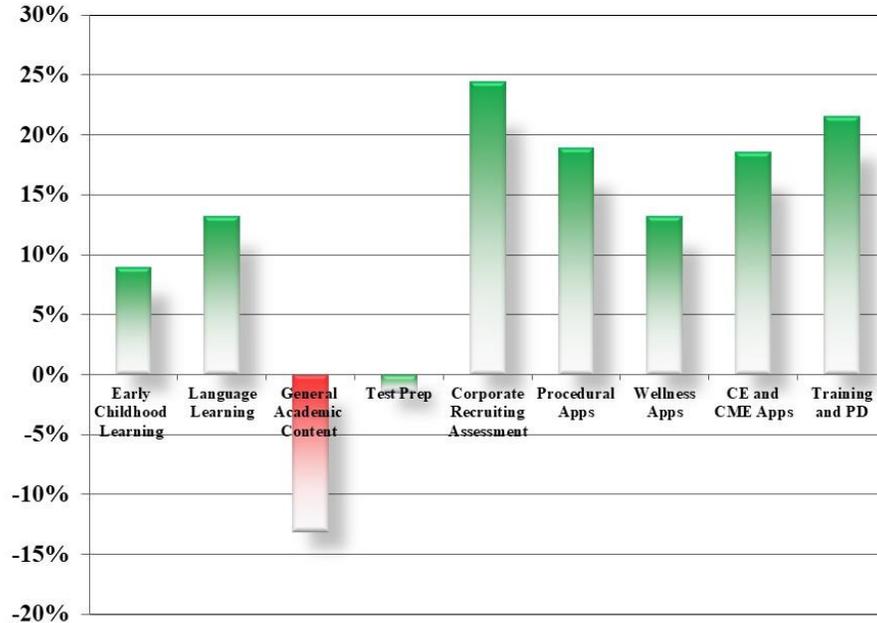
This report provides five-year forecasts for nine types of Mobile Learning content types for the US. Those content types are:

- Language learning
- Early childhood learning
- General education, study guides, and reference
- Test prep for standardized exams
- Corporate recruiting assessment apps and games
- How-to guides, procedural manuals, and decision support apps
- Medical, health, wellness, nutrition, and fitness apps (including brain trainers)
- Continuing Education (CE) and Continuing Medical Education (CME)
- Training and professional development

The presence of tablet deployments in the schools is essentially a vast new delivery channel for Mobile Learning content suppliers.

This content is accessed using dedicated handheld devices, smartphones, tablets, untethered AR and VR headsets, smartphone-enabled VR headsets, smart glasses, wearables, handheld gaming devices, and personal learning devices (PLDs). PLDs are common in early childhood learning. The sole purpose of PLDs is educational.

Figure 4 - 2020-2025 US Mobile Learning Growth Rates for Nine Packaged Content Types



There are now hundreds of personal learning devices (PLDs) designed for young children on the market. They all come preloaded with early childhood learning content developed by third parties. ***The PLD manufacturer is essentially the distributor of third-party content.*** Very few of the PLD companies develop their own content (LeapFrog and VTech are major exceptions). The Samsung for Kids tablet bundle uses the content from the aggregator Fingerprint. This report does not include revenues for PLDs or for mobile devices but does include revenues for subscription content services delivered in the devices.

Device manufacturers and education publishers offer education bundles with digital content preloaded on general-purpose tablets. The device maker is the seller and markets the bundles to the government education agencies and local schools. Acer and Samsung are just two examples of device makers that provide these bundles. Conversely, the publishers form

partnerships with third-party device makers and sell educational bundles with the publisher's brand.

The growth rate for mobile early childhood learning games is 8.9%. These games generated the highest revenues in 2020. By 2025, the pre-employment assessment and evaluation apps will generate the highest revenues driven by corporate demand

Mobile language learning apps and games have a healthy growth rate of 13.2%. Language learning has migrated rapidly to mobile devices and away from PCs, laptops, and dedicated language labs used in the schools. In July 2019, Rosetta Stone's CEO stated in the press that "Over the past three years, mobile usage among Rosetta Stone customers has exploded going from being less than 10% to 85% of usage today."

The growth rate for mobile general academic content in the US is distinctly negative at -13.1% being inhibited but the vast amount of free content and the growing use of Open Educational Resources (OER) in the schools. This content type is also inhibited by the relatively new trend for higher education publishers to sell bulk licenses directly to universities and colleges that, in turn, embed the cost of the content in course fees at a fraction of the cost of print material. This is known as Inclusive Access (IA).

The growth rate for mobile exam and test prep is flat to negative at -1.5%. Flat growth rates mean that revenues will remain steady over the forecast period. Academic test prep is inhibited by the exam providers that are supplying free prep content. Yet, test prep products for professional and healthcare exams still command very high prices.

The growth rate for mobile pre-employment assessment and evaluation apps is the highest of all nine content types at 24.4%. The demand for the new pre-employment evaluation and assessment products is heavily concentrated in the corporate verticals. The customers are starting to use the products for performance assessment of existing employees as well. The demand is reflected in the number of startups that continue to come on the market. Investors have been pouring money into these new companies in the last two years. This type of Mobile Learning content will generate the highest revenues in the US by 2025.

Mobile training content and so-called professional development (PD) content has a healthy growth rate at 21.5%. A large percentage of mobile training content is designed for corporate employees in the field.

Professional development is a term used mainly in the PreK-12 academic segment and maps to the district requirements for teachers.

Continuing education (CE) and continuing medical education (CME) have a high growth rate of 17.3%. Essentially, there is a captive audience for content developers as CE and CME are mandatory in a range of professions. In the US, there are over 50 professions that require licenses to work and they are identified in this report. The content is highly standardized and except for the healthcare credentials, the barrier-to-entry are relatively low for new mobile exam prep startups.

Medical, wellness apps, and cognitive fitness games include clinical decision support for medical personnel, medical information apps (like symptom checkers) for consumers, educational content for kids with special needs, cognitive fitness apps, mindfulness (meditation) apps, mental trainers, and brain trainers. This Mobile Learning content type has a relatively high growth rate of 12.1% and revenues will nearly double for this content type over the forecast period.

Procedural apps include how-to guides and decision-support apps. These are in wide use in specific verticals particularly the heavy machinery and healthcare sectors. They are in wide use in the military and first responder agencies as well. The growth rate for the type of Mobile Learning content is 18.9% and revenues will nearly double over the forecast period.

The US municipal and state agencies disclose details on tablet initiatives including the budget, the number of tablets to be deployed, and the expenditures on digital content for the devices.

Sources of Data on the US Mobile Learning Market

The financial reports of publicly-traded online education suppliers are particularly useful in providing insight into buying behavior in specific regions and countries. Most of these learning technology companies focus on particular products, buying segments, and specific types of content so their financial reports provide targeted information on specific buying behavior patterns.

The major international educational publishers are active in most countries of the world and report their revenues quarterly and annually. Cengage, Pearson, McGraw-Hill, Cambridge University Press, Rosetta Stone, Houghton Mifflin Harcourt, Oxford University Press, Wiley, and Macmillan have significant market presence in the US. All of these educational publishers are rapidly expanding their content catalogs with Mobile Learning.

There are several analytics firms that track the top selling mobile apps in the major app stores in countries across the planet. All of them have an education category. App Annie is the best-known global app analytics firms; they provide extensive data on the top selling and top downloaded Mobile Learning apps in over 100 countries including the US. Their top 100 rankings provide insight on the demand for specific types of content. There are regional and country-centric mobile analytics firms as well.

There are global telecom industry trade associations like GSMA, CTIA (The Wireless Association), and the Telecommunications Industry Association (TIA) that offer a wealth of current data on the rapid evolution of mobile technology in countries across the world and market forecasts for specific products and services. GSMA has a dedicated team that tracks the uptake of Mobile Learning across the planet.

Tablets continue to be deployed in US schools at a fairly steady rate. When districts deploy tablets, they almost always disclose the number of tablets purchased, the grade levels they are being used in, and the funding allocated to the initiative. This provides Mobile Learning content developers with clear revenue opportunities and a growing delivery channel.

In July 2019, Rosetta Stone's CEO stated in the press that "Over the past three years, mobile usage among Rosetta Stone customers has exploded going from being less than 10% to 85% of usage today."

There are now dozens of portals across the planet that aggregate global news and information on VR and AR including the Virtual Reality Reporter, Next Reality, VRFocus, UploadVR, Haptical, Wareable, VR World, The Virtual Report.biz, Hypergrid Business Review, Digital Bodies, and Road to VR.

There are two major global trade associations for the AR and VR industries: The VR/AR Association and the Augmented Reality for Enterprise Alliance (AREA).

The VR/AR Association (VRARA) is "an international organization designed to foster collaboration between innovative companies and people in the virtual reality and augmented reality ecosystem that helps develop industry standards, connects member organizations, and promotes the services of member companies."

There are VRARA chapters all over the world. As of February 2018, there were chapters in 58 cities across the globe including 24 in North America, 20 in Europe, 12 in Asia Pacific, and two in the Middle East.

- These chapters provide "hyperlocal" information on the AR/VR markets in their areas. In March 2018, VRARA reported that they had grown membership by over 500% in one year and had over 4,000 registered organizations making it the largest ecosystem in the industry.

VRARA had 24 working committees that focus on specific verticals. "These Committees are working on best practices, guidelines, call-to-actions, standards, and projects to further accelerate the market." The committees are comprised of member companies that compete in specific verticals. There are working committees for education, training, healthcare, tourism, aerospace, and architecture/engineering/construction (AEC).

Training and education companies make up the majority of these committees. Each committee has a web page with links to companies competing in those verticals. It is a good way to gather competitive intelligence on companies developing mobile VR and AR educational products.

AR-based education products are spreading like wildfire in the industrial verticals and in the military. A good source of information on this trend is the Augmented Reality for Enterprise Alliance (AREA), "the only global member-based organization focusing on accelerating AR adoption through creating and expanding a vibrant technology ecosystem."

The AREA had 65 company members in early 2018. They have published the world's first standard functional specifications for augmented industrial application and their documentation places a great emphasis on the application of AR for training and real time on-site decision support. Their site includes information restricted to members but a wide range of market-related content available to the public.

Another good source of information is the Virtual Reality Venture Capital Alliance (VRVCA). "Formed in 2016, the VRVCA is a close-knit membership comprised of 47 of the top Virtual Reality Investors in the world. We believe that VR is a transformative technology that will revolutionize entire industries. We are working tirelessly to ensure that the VR startups today get the resources they need."

In December 2016, Google, HTC, Oculus, Samsung, Sony, and Acer launched the Global Virtual Reality Association (GVRA). "This group believes in VR's immense global potential and the opportunities ahead – it

The Inc 5000 list from Inc. Magazine is a good source of revenue information on edtech companies. Companies listed in the annual rankings all report their growth rate and annual revenues for the previous year.

will change the landscape of education, training, healthcare, and design, among many other areas." The group disseminates regional VR research reports.

There are local and state/provincial organizations that promote AR/VR and they provide local information on the industry. The Idaho Virtual Reality Council (IVRC) launched in 2016 and has a strong focus on the educational uses of AR and VR. The IVRC is "Idaho's first networking and education council for Idaho's leaders and innovators interested in virtual reality, augmented reality, and mixed reality. The goal of the IVRC is to bring together people, technologies, and companies to create a thriving VR industry. Networking events and educational seminars will help Idaho organizations to learn faster, cooperate on projects, and promote VR in Idaho."

