

# 1 Becoming a Master of Learning

## Key Features

- Identify Future Ready Learning initiative
- Understand the technology-specific academic standards
- Compare and contrast 20th-century and 21st-century education
- Describe ISTE Standards for Students
- Synthesize the SAMR Model of Technology Integration
- Describe the features of G Suite for Education
- Formulate an understanding of when and how to use Google Tools

*“If we teach today’s students as we taught yesterday’s, we rob them of tomorrow.”*

—John Dewey

**P**reparing students for college and careers in the 21st century is our goal as educators. What are these skills? How do we foster them? How do we keep students interested? Most of all, how do we ensure relevancy and authenticity as we approach the 20% mark of the 21st century? Middle school is a time in a young adolescent’s life where he or she must gain skills that incorporate self-direction, self-discovery, and self-discipline. However, this does not just include the physical world anymore. Educators, community members, and parents must all engage our young adolescents in respectful and appropriate interactions in the digital world. Becoming a digital citizen involves not only respecting the global connected world, but also participating in this still-young new world. After all, Google has only been a company since 1998, and now more than 40 million students use the tools to engage in content mastery, increased productivity, and open dialogue with their teachers and peers around the globe.

## FUTURE READY LEARNING

In 2015, the U.S. Department of Education launched an initiative to support personalized digital learning called Future Ready Schools (Resource 1.1). This initiative established a framework focused

on Curriculum and Instruction, Community Engagement, Budget and Resources, Use of Space and Time, Infrastructure, Professional Learning, and Data and Privacy. These seven gears are at the crux of our modern (and future) educational environment. With a new set of content standards and a motivation to prepare for high school, college, and/or a career, we as educators must redefine and transform our practices. Middle school educators must be aware of national best practices to reform our schools in order to stay competitive, focus on change, and grow our adolescent youth. Aligning to this framework can assist teachers in becoming true masters of learning and being privy to national directions, possible grants, and other aspects of educational reform.

## INSTRUCTIONAL STANDARDS

The Common Core State Standards (CCSS) and various other state standards have been a catalyst for change in schools focused on college and career readiness. They force educators to rethink their instruction and provide opportunities for deeper learning by lending itself to collaboration, inquiry, and project design. In fact, these various standards as well as the Next Generation Science Standards (NGSS) are the first set of standards to specifically embed references to digital learning. What follows is a set of college- and career-ready CCSS anchor standards that explicitly references digital learning.

### Reading

- **R.CCR.7:** Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

### Writing

- **W.CCR.6:** Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
- **W.CCR.8:** Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

### Speaking & Listening

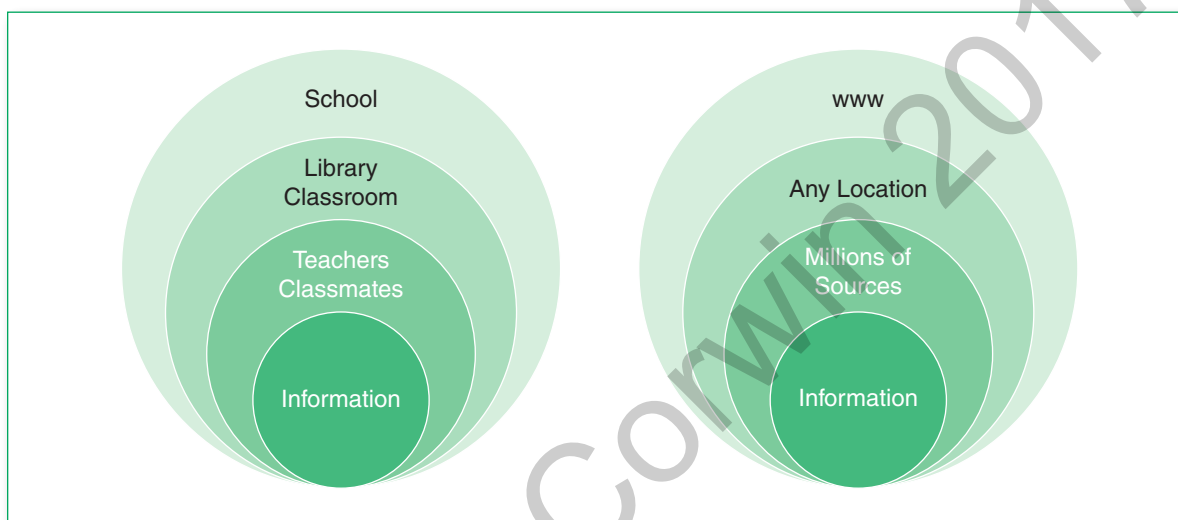
- **SL.CCR.2:** Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
- **SL.CCR.5:** Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

Furthermore, the college- and career-ready standards imply cross-curricular connections. Take for example students learning about viruses in seventh-grade science. Students must effectively research the science behind viruses at the microscopic level, but they also must explore how viruses have affected society. Students can then develop a video via a third-party Google app, such as WeVideo, to demonstrate their understanding of how viruses attack cells, and how we can learn from our previous experiences through history about how to protect ourselves and each other from potential harm. Students have to learn the science, write a script, present the information, and publish a video through collaborating with others. This powerful project involves deeper learning at all levels, but most importantly, it shifts the role of the teacher from the distributor of content to the facilitator of learning.

## PEDAGOGY

Prior to the age of Internet research, the teacher was the content authority in the room, and the library was the place to access a fixed set of content and information. Things have changed now with primary sources, encyclopedia, textbooks, and news being available at our fingertips. Literacy has shifted from just being able to read, write, and communicate, to being able to comfortably do these things with technology. Figure 1.1 provides a visual of this shift of access to information.

**Figure 1.1** 20th- Versus 21st-Century Knowledge Taxonomy in Schools

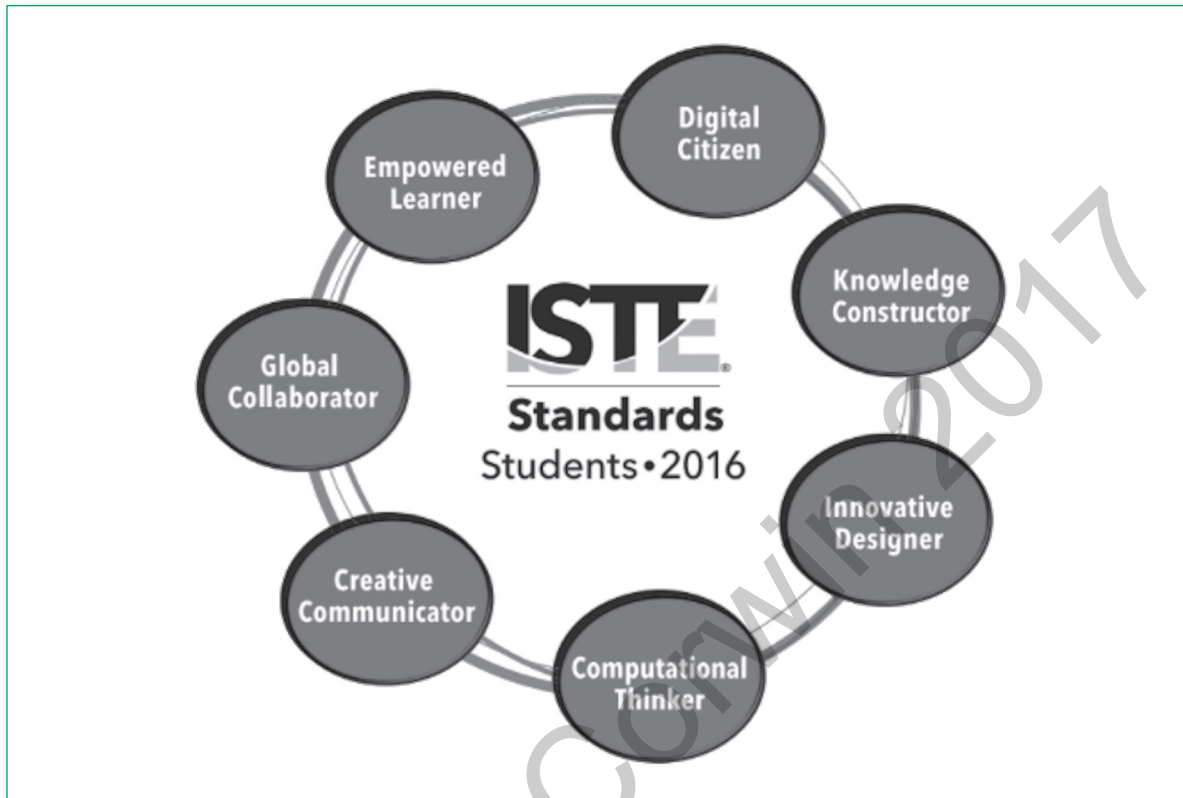


So how do teachers shift their art and practice to support this new way of accessing knowledge? There are several frameworks to align to. First, the International Society for Technology in Education (ISTE) has developed a set of standards shown in Figure 1.2 that focuses on elements of a new approach to teaching. These standards can develop a foundation for practices in the classroom. Each focus area of student standards implies relevant and timely skills needed for success in the 21st century. By using these standards as a guide, teachers have the ability to ensure students engage in activities that promote student agency, innovation, and appropriate use of interactive and communicative technologies. Furthermore, middle school students can use the indicators ISTE provides in the standards (Resource 1.2) to begin (or continue) their pathways toward college and career readiness.

Think about the virus project above and how you as a teacher would develop a lesson plan. Would you provide direct instruction? Would you involve global collaboration, such as having real doctors or historians view the videos and offer feedback or have students in a different state or country share some connections to viruses that are dominant near them? No matter how you would write this up, most likely it would be a lesson design that would have been impossible to accomplish 10+ years ago. This is where you as an instructional designer have the power to completely transform your classroom. However, it takes time.

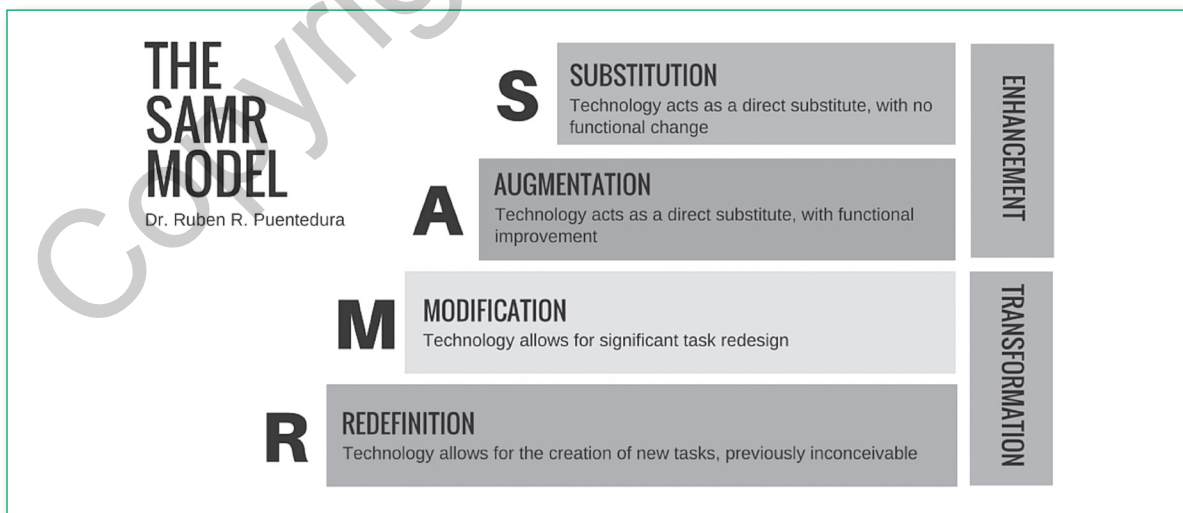
Dr. Ruben Puentedura, an educational researcher, developed a framework of how we use technology and media to transform instruction and redefine learning. The SAMR Model (Substitution, Augmentation, Modification, and Redefinition) is now used to design high-quality, standards-based lessons that use technology as a catalyst for redefining the learning-integrated lessons. The acronym provides a spectrum of how we can use technology to transform learning practices. See Figure 1.3 for how SAMR is used to define technology integration and the stages that lead to transformation.

Figure 1.2 ISTE Standards 2016



ISTE Standards for Students, ©2016, ISTE® (International Society for Technology in Education), iste.org. All rights reserved.

Figure 1.3 The SAMR Model



Ruben Puentedura. The SAMR Model. [https://commons.wikimedia.org/wiki/File:The\\_SAMR\\_Model.jpg](https://commons.wikimedia.org/wiki/File:The_SAMR_Model.jpg). Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)

For example, creating digital flash cards with tools such as Quizlet allows you to substitute the old-fashioned index cards for easier access to study tools. This example lends itself to only enhancement of the activity (substitution or augmentation). However, using the same flash card tool (Quizlet), students can search, build, and share their own flash cards, while also including images with their peers in class and in other countries allowing for global collaboration and collaborative study techniques. The latter task allows redefined approaches to instruction.

As we look to apply any technology, we must think about how it allows for tasks that were once inconceivable, as we know our students will be in careers in the next 10–20 years that are also inconceivable today. As we explore G Suite in middle school, we will provide applications specific for the transformative aspect of the SAMR Model since education today should innovate for tomorrow!

### Technology-Infused Teaching Tip

Try searching for SAMR resources on Twitter (Resource 1.3 <https://goo.gl/1i9qEO>)! You will find a great deal of images, examples, and methods to apply in your classroom. Twitter is also a great tool to connect with teachers and classrooms. Whether you are looking to build your personal learning network (PLN) or create more global opportunities for your students, Twitter will open the door for extended learning for both you and your students.

## FEATURES OF G SUITE FOR EDUCATION

### Why G Suite?

Have you ever read a book and wanted to know if it is based on a true story or not? Or, perhaps you were watching a documentary about John F. Kennedy and wanted to know what his parents did for a living. Well, if you ask 9 out of 10 people, they would use the commonly used phrase—*google it!* Recently, while walking through a sixth-grade history class, students were discussing World War II. One student wanted to know why Hawaii was the first place attacked in America. The teacher, instead of just explaining the geographic location of Hawaii, asked students to load Google Maps, navigate to Hawaii, and use the measurement tools to measure the distance from Hawaii to Japan. They then compared that distance from mainland USA. Without any explanation, students just nodded, and one said, “This makes total sense!”

Google.com in 1997 was officially registered as a website. From then on, it became increasingly utilized at first as a search engine and then more readily as other relevant applications including mail, maps, news, and office productivity. The simplicity, ease of use, and benefits of the tools became internationally recognized as the go-to company for information. Google has provided many benefits to education as well. They provide G Suite for Education, a *free* suite of district-managed applications that are safeguarded by district IT staff and have always been focused on student safety, privacy, and security. All users who are logged into G Suite for Education have ad-free searching and unlimited storage of any type of data in Google Drive, including images, videos, and documents. Perhaps Google wants to create the next generation of Google users, but regardless, if the tool works, if it helps with student engagement, productivity, and creativity, it will enable student achievement! Teaching the importance of evaluating tools and consumerism can be also embedded in the breadth of the entire curriculum.

## Hardware

G Suite for Education apps are unique because they operate on any device that is connected to the Internet. Users may access their content in Google Drive and create Docs, Sheets, and Slides from any laptop, tablet, or smartphone. For example, students could work on an interdisciplinary writing project comparing and contrasting ideas from a historical document in history class on their classroom PC. Later when students move to English class, they will be able to finalize the writing portion for grammar and syntax on the classroom's Mac. Finally, at lunch, students can share the work with a partner on their smartphones and work collaboratively to edit the final work.

## Chromebooks

Chromebooks are laptop computers that solely run Google apps and Google's operating system called Chrome OS. Many manufacturers make the Chromebook, but all run Google's free apps and other apps from the Chrome Web Store. Chromebooks are a different kind of laptop computer. The device has a small hard drive and is made to run in the cloud connected to the Internet. It is perfect for students because it is inexpensive, easy to use, and does not require updates. For example, our technology coordinator never has to update a single Chromebook since the initiative started. Each time the computer is turned on, it downloads in the background the newest version of Chrome OS. The devices have a small hard drive for storing files locally, but this is not required or used very often because of the unlimited cloud storage of G Suite for Education's Google Drive.

## Chromebook Management Console

All Chromebooks come with the option of pre-installed software called the Chromebook Management Console. This software allows the technology professionals at the school to manage each Chromebook to prepare for testing, force install certain Google apps, and block apps, websites, and other harmful Internet content. For example, when state-mandated testing season approaches, technology coordinators that have the Management Console installed can tell the Chromebooks to enter testing mode remotely. This means that the technology department does not have to physically prepare machines for security, updates, and other system configurations. Another example is end of the year preparation. At the end of the school year all Chromebooks will be turned into the technology department for repairs and maintenance. The process of updating, deleting student files, and restoring settings for the next year is a simple push of the button. The Chromebook Management Console may be purchased from vendors and preloaded on devices when ordered. Save headaches, man-hours, and money by installing this much-needed application.

## Choosing a Chromebook Device

As two practicing administrators, Michael and Jason are both overseeing 1:1 Chromebook initiatives for about 1,700 students K–12 and 500 students K–8, respectively. We know choosing the best Chromebook for your students could be daunting because of the many different models and manufacturers. Each Chromebook model has different features. We have broken down the process and have provided reviews to help you in your search. The information below has pointers on the things to look for in a Chromebook for student use.

- **Tough power adapter:** Schools with take-home initiatives seem to have a lot of issues with weak power adapters. For example, some Chromebooks have a thick power insert, as shown in the first image below. The power plug is thin and can be bent, rendering it useless. The power adapter plug in the second image is 5.5 mm thick and could not be easily bent. Accidents happen in the middle school classroom and at home. It is better to be prepared with a strong power adapter to keep repair costs down.



- Screen hinges: The screen hinges are vulnerable to breakage. Choose a Chromebook that has durable hinges that will last potentially 100 openings and closings per day.







- **Battery life:** Constant Internet surfing causes the battery life to drain on many devices. Choose a Chromebook with at least an 8-hour battery life.
- **Durability:** We both taught middle school for several years before becoming administrators. We have seen our fair share of fragile technology be destroyed by various methods of annihilation. Finding a Chromebook that is tough, durable, and has spill-resistant keyboards is essential for students of any grade.

Best excuse from our Technology Department for a broken Chromebook: “My cat jumped on my Chromebook and broke it.”

—Sixth-Grade Student

Best Chromebook survival story: “I put my Chromebook on top of my mom’s car when she was picking me up from school. . . . It fell off about 2 miles down the road. It is a little scratched up, but it still worked when we found it.”

—Eighth-Grade Student

## Technology-Infused Teaching Tip

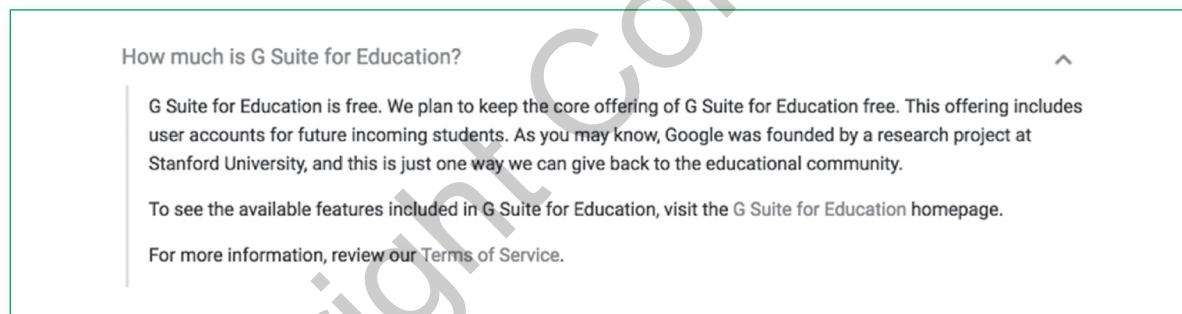
Students and parents can come up with some real MacGyver-like ways to fix a broken Chromebook. Look for duct tape, superglue, or mismatching screws as you generally inspect student devices.

## GOOGLE USER EXPERIENCE

So why Google? Thousands of schools, districts, nonprofits, government agencies, and businesses have adopted G Suite for Education as their core suite of tools. We know Microsoft Office has been the go-to industry-standard set of productivity tools for more than 20 years, but with the movement toward cloud computing and Google's jump-on easy-to-use collaborative web-based software, we are seeing a definite paradigm shift in industry standards. Who will win, we don't really know, but Google is a great place to start for several reasons.

- It is free, and Google said it plans to keep it free forever for education users as a donation to education (See Figure 1.4). (Resource 1.4)
- Unlimited storage
- Device neutrality
- Features like Hangouts and Google Voice
- The Google ecosystem has the same user experience for each of their apps. At the same time, Apple's iPad has millions of apps that all have different sets of user rules. The G Suite has the exact same user experience no matter what device you access it from. Google Docs works identically on a Mac, PC, or Chromebook.

**Figure 1.4** G Suite for Education Free Statement



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## WHY GOOGLE?

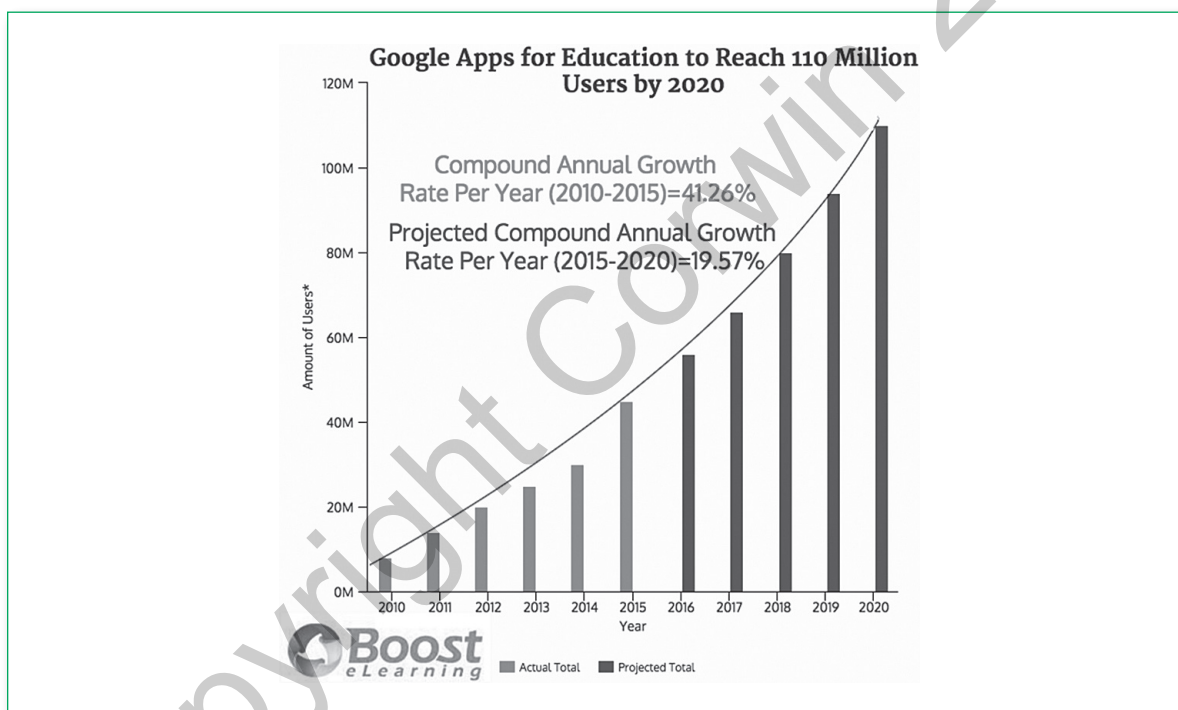
One reason why G Suite for Education is the best solution for implementing technology for today's classroom is because the service is device neutral. Device neutrality means that no matter what device the student is using, he or she will have access to G Suite for Education. On the other hand, Apple's word-processing software Pages can only be accessed on an Apple device. Using the programs available through G Suite for Education only requires access to the Internet and a web browser. With G Suite, students can access and produce their documents, files, and other work from any device (PC, Mac, Android tablet, or iPad). That is a large combination of devices to prepare students to work with. G Suite for Education helps students become ready for an ever-changing device market and to be nimble and ready for any device that their employer or college throws their way.

Teaching and learning in the 21st century and beyond sets high expectations for both students and educators. One of the most challenging expectations for educators is finding the right way to integrate technology into the learning environment. Educators everywhere know that one thing is for sure: Technology integration into our lives and work environments will be ever-increasing. The kindergartner

that starts school this year will retire sometime between 2070 and 2080. The iPhone was first released in 2007. Think how much the world has changed in the past years since its debut. Fast forward to 2040, the year kindergartners of 2016 will be in the first years of their career. What skills will they need to thrive in the work environment of the day?

G Suite for Education provides nearly all of the tools to get educators on the path of using technology while implementing various college- and career-readiness standards. Google’s apps are free, easy to use, and are trusted by more than 40 million students and teachers worldwide and expected to reach 110 million users by 2020. The services Google offers follow the company’s motto of “do no harm.” Google is providing free software to schools that works on any device from anywhere. This contribution of any device gives students a diverse technology experience. They are providing the most sophisticated, easy-to-use software experience for free, because Google feels that it is the right thing to do for teachers and students.

**Figure 1.5** Growth of G Suite for Education (Formerly Google Apps for Education) Boost eLearning



*Source:* Alhadeff, V. (2015, July 1). Google Apps for Education Anticipated to Reach 110 Million Users by 2020. Retrieved from <http://www.pnewswire.com/news-releases/google-apps-for-education-anticipated-to-reach-110-million-users-by-2020-300107878.html>

*Note:* \*Includes teachers, students, and administrators.

This book is filled with exciting new ideas and processes for the middle school educator to get started with G Suite for Education, demonstrating how it can be used to meet and exceed the various college, career, and technology readiness standards. Hopefully, it can excite the veteran teacher to implement new strategies, while calming fears, and it will help the novice teacher get familiar with the much-needed technology integration components students need for success in high school and later in life. This book will offer step-by-step tutorials with screenshots to explain in detail how to get your students learning and working with these amazing 21st-century tools, as well as full lesson plans on the companion website.

Google has a vision for their users. Their aspirations were as follows:

The Google User Experience team aims to create designs that are useful, fast, simple, engaging, innovative, universal, profitable, beautiful, trustworthy, and personable. Achieving a harmonious balance of these 10 principles is a constant challenge. A product that gets the balance right is “Googley”—and will satisfy entire district deployments. G Suite is seamless to implement across any size school or district big or small. Furthermore, Google is committed to student safety, privacy, and data, ensuring no data will be shared nor used for advertising purposes, much different than traditional Google accounts. (Resource 1.5)

## SUMMARY

As you begin to think about transforming your middle school classroom experiences, how will you set the tone for our future generations? What makes your classroom “Googley”? Whether you see the need for applying these tools to various sets of standards such as Common Core or ISTE, or you want to really transform your classroom using the SAMR Model as a guide, one thing is for certain—our world is changing, and what we are preparing students for in their careers will be something we may never have a full grasp on. Google will be a service that will be essential for many decades to come.

Many of you are already immersing transformative practices into teaching and learning, but are you creating a sustainable system to allow for deeper learning and content acquisition that is relevant, rigorous, and applicable to students near and far? In order to do so, you must think of yourself as the master of learning, not necessarily the master of content. Throughout this book, you will immerse yourself in a set of tools to add to your toolbox to be the true facilitator of lifelong learning for the remaining four-fifths of the 21st century.

## RESOURCES

For more information about G Suite for Education, including

- lesson plans related to chapter content,
- domain setup for tech administrators’ videos,
- overviews and Google training materials,
- the authors’ favorite websites, and
- testimonials and interviews of schools currently using G Suite,

access Resources from this chapter on the companion website.



<http://resources.corwin.com/googlemeetsms>