growing
digital

Cultivate digital growth and help your students thrive.
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The power to grow and learn is all in the mind. Or at least it starts there, according to Stanford psychologist Dr. Carol Dweck. Her decades of cross-cultural research show that having a growth mindset—believing that one’s intelligence, creativity, and other strengths are not fixed, but can be developed—drives students to reach their fullest potential.

But this concept doesn’t just apply to your students. To succeed in a highly competitive marketplace, your entire university must adopt a mindset of digital growth. As the classic model of higher education evolves to become more interactive, flexible, and rooted in principles of digital literacy, institutions that favor a growth mindset will recognize the potential and welcome the challenges associated with these changes.

Consider students applying to college today. Most of them were born into a world of always-on mobile, web, and social tools, where communication is evermore immediate and interactive. These digital natives are less likely to set boundaries on when, where, and how they learn—so the institutions they attend shouldn’t limit access to digital tools to on campus only. To engage students fully, teaching and learning must expand beyond the classroom and integrate digital communication options such as creative tools, video resources, mobile apps, and online content.
“The student of the future is what we call a maker, somebody who not only understands the problem, but also produces solutions to it.”

JAN H OLMVIK
Associate Professor of English
Co-Director of the Center of Excellence in Next Generation Computing and Creativity
Clemson University

Infusing your classrooms, curriculum, and educational tools with digital options is the baseline for growing digital literacy. But teaching and learning in a digitally sophisticated world has to go beyond access to and basic proficiency with digital tools. Students must learn to apply digital resources creatively throughout their educational experiences, using the tools to solve problems, produce innovative projects, and enhance communication—so they can prepare for the real-world challenges of an increasingly digital workplace.

Digital literacy defined.

Look up “digital literacy” online and you’ll find nearly as many definitions as search results. In the context of higher education, think of digital literacy as a process with three stages.

1. **Understand** what digital tools are out there and what they can do.
2. **Develop** skills for using a wide range of digital tools.
3. **Apply** digital skills creatively to solve problems and enhance communication.

Digitally literate students and faculty know how, why, and when to use digital tools. They can spot the opportunities and take advantage of them when developing courses or adding a new level of creative expression to a project.
Universities with a digital growth mindset are focused on increasing digital literacy in teaching and learning so that students can succeed after graduation in a variety of careers—whether they’re analyzing data for a Big 4 accounting firm or creating podcasts for an online news show. These universities know that the teaching of critical thinking skills—a long-standing pillar of a college education—must be adapted to be relevant for the digital workplace. Otherwise, college might not seem like a much better prospect than a trade-specific certification, or on-the-job training. In fact, given the rising costs of tuition and soaring debt, 74% of students considered alternatives to higher education in 2014.4

Still, Americans with a bachelor’s degree earn 56% more on average than those without a degree.5 And students who can enter the workforce with a market-ready level of digital literacy will have a considerable career advantage. It can even be a deciding factor in their choice of university.
Students tend to favor institutions that promote digital literacy because they believe the relevant skills will give them a critical advantage after graduation. This view is increasingly validated in the business world. For instance, Forbes magazine lists “Introduction to Digital Media” as one of the nine courses every college student should take advantage of. The ability to create digital media and understand fundamental principles of design is now a universal door opener “in a range of careers, from marketing to content creation (and of course design itself).”

So to be competitive, all college grads in today’s workforce should be equipped with the ability to persuade, communicate, and tell a story in a digitally compelling way. “Consider what communication looks like today. It’s increasingly visual and increasingly digital,” says Tacy Trowbridge, worldwide lead of education programs at Adobe. “For students to have a voice, they have to be able to design and develop presentations that include compelling digital elements.”

“Empowering students to communicate effectively in a business environment is a critical component of digital literacy,” says Jim Bottum, CIO and vice provost for computing and information technology at Clemson University. “The goal is to equip students with the skills, knowledge, and capabilities to be ambidextrous in the digital world we live in,” he says.

“Today, we generate and consume content in entirely new ways. People expect video, audio, images, and more. Because of this new paradigm, employers seek out graduates who are digitally literate and understand how to communicate in media-rich ways that can be consumed across multiple platforms.”

Digitally literate college graduates will also be able to differentiate themselves in the job market and build a compelling personal brand. Equipped with the ability to use digital media creatively, the most digitally savvy grads are weaving images, video, and audio into their portfolios and résumés—and finding new ways to stand out from the crowd. By telling their stories digitally, they’re demonstrating that they’ve learned to approach problems creatively—a skill employers value highly. The market-ready, digitally literate grad will also “have some facility with learning new technology,” says Trowbridge. “Everything will look different in five years, so it’s not about becoming an expert in one tool now, but learning to think about how you can apply different kinds of tools for effective communication.”

Matthew Sigelman, chief executive at the job market analytics company Burning Glass Technologies, knows which skills employers value most—his company data mines 3.5 million job ads per day. “Employers really value soft skills that are the bedrock of a liberal arts education,” he says, and a new analysis suggests “applicants with additional, specific skills, such as knowledge of Java or other programming languages, or proficiency with graphic design tools like InDesign or Adobe Creative Cloud” will significantly increase both their job and salary prospects.

Branching out: The digital personal brand.

Like many recent grads, Lea Anna Cardwell found it difficult to demonstrate her unique worth to potential employers after earning her bachelor’s degree. “On paper I was a great student,” she says, “but I had nothing to show for that, no tangible evidence.” That all changed when she decided to pursue an MA in Professional Communication at Clemson University.

Cardwell immediately took advantage of the comprehensive digital creative desktop and mobile apps that Clemson offers to all students, faculty, and staff. She built an online portfolio highlighting her projects that helped her secure an internship with Adobe in Corporate Public Relations. When Cardwell’s internship manager reviewed her online portfolio, “it gave her more insight to who I was as a person, what my work style was like, what my interests were, and how I was going to fit into the team,” Cardwell says. “That really helped her make her decision, which I was very proud of.”

Upon graduating from Clemson, Cardwell upgraded her personal brand by applying digital tools to create tangible digital work samples using a range of tools. “I want to show that I can write; I can shoot photos; I can edit photography; I can compile a video.”

Source: Writing Her Own Future With A Digital Skill Set

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Institutions that embrace digital transformation know that anything can be taught and learned—especially when students have the tools they need for success. In fact, some of today’s most innovative institutions foster digital literacy by making digital creative tools available campus-wide for free. Empowering everyone to add creative digital elements to their work encourages them to explore new ways of producing and sharing their ideas. In other words, it can stimulate a growth mindset—students and instructors may realize they have more creative potential and that it can be developed with open access to the right tools and support.

Clemson University has made access to digital creative tools a centerpiece of its educational offering. In addition to their fully equipped digital studio, the university provides industry-standard creative desktop and mobile apps to all students, faculty, and staff. This includes tools for digital publishing, audio, website design, page design and layout design, video editing and production, and image editing. By making the tools easily available to everyone on campus, Clemson University has extended the concept of creativity to every discipline, not just arts and design.

“We want creativity here to be for everyone,” says Jan Holmevik, associate professor of English and co-director of the Center of Excellence in Next Generation Computing and Creativity at Clemson University. “As an instructor, I can now incorporate more advanced concepts and production into my classes. For students, they are now empowered with the tools to make their work as good as it can be, and they gain valuable production skills that will help them get better jobs when they graduate.”

Let creativity flourish across every discipline.

Giving everyone on campus access to digital creative tools has helped creativity flourish across the curriculum at Clemson University.

- Students use interactive apps, PDF portfolios, or documentaries to deliver grant proposals and dissertations, and they have greater range to show the research behind their concepts.
- Political science majors use graphics, video, and audio to enhance or even replace written essays with presentations that express their ideas creatively.
- Architectural students give people the ability to virtually enter and explore every room in a proposed building, and they create stunning websites that put new structures in context.
Like Clemson, Abilene Christian University has shifted digital literacy into a higher gear by offering comprehensive digital tools campus-wide. The curriculum also integrates aspects of digital literacy early on. For example, all freshman composition classes include a visual digital essay component.

Both students and faculty at Abilene Christian learn to master their digital tools with storytelling assignments that teach them to use one of the more complex tools, such as video editing software. “It gives them a level of confidence so they’ll feel they have the skills to use that tool for other assignments later in the curriculum,” says professor of English Kyle Dickson.

Multidisciplinary courses that fuse digital storytelling with science are gaining popularity in higher education. For instance, the Jimmy Iovine and Andre Young Academy at USC is a cross-curricular undergraduate program that integrates engineering, business, and design. Students gain a solid foundation in business and marketing principles while creating everything from 3D prototypes to mobile apps. “Students get a different experience because some of what they learn bridges all these disciplines,” says Trowbridge. “They need to apply new digital skills, communicate interactively, understand how designers think, and apply that knowledge in an engineering or business context.”

At Westminster College, students are launching innovative projects with digital tools that sometimes have an impact far beyond the campus. For example, students working with the Great Salt Lake Institute are creating podcasts about the rich history and unique environmental qualities of the lake. They take camera equipment and boom mikes to record their episodes near the salt slabs, then they edit the audio, add sound effects, and publish each podcast. The Great Salt Lake podcast has even been picked up by a radio station, which recently aired the third episode.

In the psychology department, each student creates a video describing a psychological concept and posts it on the Online Psychology Symposium website, which uses wiki spaces and discussion boards to develop and explore the concepts collaboratively. And in the arts program, students collect data on local organizations, mostly in fine arts, to show how the arts impact the wider community. They track budgets, volunteers, employees, directors, and audience members, enter the data in a spreadsheet, then load the data into mapping software to create an interactive “Cultural Asset Map.”
Physical spaces on campus are also being transformed to foster collaboration and creative use of digital media. Forward-looking institutions are taking a strong lead in this arena—illustrating a digital growth mindset that enables students to perform at the top of their potential. Some schools have created fully equipped, dedicated digital studios. Others have transformed lobbies, atriums, and hallways into places where students can comfortably collaborate, recharge devices, and connect laptops to LCD monitors for sharing information.19

“A fertile place for digital ideas.

Clemson University’s Digital Studio provides a high-end model for building digital literacy skills in a physical maker space. Their comprehensive studio includes:

• Video and audio recording studios
• A living room–style area for laptops, large displays, and whiteboards
• Walls showcasing digital creative work by students at Clemson and around the world
• Experts on-site to answer questions
• Access to comprehensive digital tools for all students

“People need places to dream, to exchange ideas, and to learn from each other,” says Holmevik. “The new studio is that space. While universities around the country are building physical maker spaces that reach only a portion of the student population, at Clemson, our comprehensive digital maker space reaches all of our students.”20
In progressive academic libraries, informal learning spaces are also getting a digital facelift. For instance, in 2014, the DeLaMare Science and Engineering Library at the University of Nevada Reno remodeled their ground floor into “a more functional space for self-directed learning using new visualization hardware and software.”\(^1\) Students can use two large 3D printers and scanners, check out Arduino boards to develop interactive objects, try out an Oculus Rift virtual reality headset (and a development kit), experiment with Google Glass, and more.\(^2\) The transformation earned them a spot on *Make* magazine’s list of “Most Interesting Makerspaces in America.”

**Enrich learning with digital environments.**

Institutions with a digital growth mindset are remodeling the traditional classroom with digital elements to make learning more accessible, self-directed, and productive. These environments deliver the flexibility and anytime access to online resources that digital natives expect, and they can create a more engaging learning experience.

**Blended learning** combines online and face-to-face instruction to expand learning beyond the classroom. Online, educators make course materials available and facilitate discussions via both synchronous and asynchronous (in-class and after-class) forums. The blended learning environment allows students to practice critical thinking and collaboration in the online context, developing soft skills that will ultimately help them navigate the digital workplace.

**Flipped classrooms** take blended learning further and make it even more self-directed. Students absorb essential information before each class, studying online materials in video, audio, or eBook formats, or joining study groups in online communities. In class, students and faculty engage in more hands-on, interactive learning and deeper discussion.\(^3\) Collaboration is more easily fostered and valuable class time is freed up for problem solving—a real-world skill that’s in high demand in the workplace.

**Virtual classrooms** make live, interactive instruction available to students wherever they choose to connect. At Georgetown University, the Master of Science in Finance program delivers some classes with a sophisticated virtual solution that has the look and feel of a traditional classroom and enables live discussion between instructors and students, plus asynchronous discussion forums.\(^4\) This fully interactive experience prepares students to engage in digital communication at a high level and easily adjust to new ways of learning.
shift the landscape—and help digital literacy take root.

Despite an increasing number of examples of how digital literacy helps students thrive, many higher education institutions have a lot of catching up to do. One of the biggest obstacles to adopting an institution-wide digital growth mindset is not cost, but resistance from higher education instructors—and for good reason. “It has to do with how faculty are incented and rewarded to move along in their careers,” says Trowbridge. “Deviating from the more traditional path is risky and hard to do. Especially at large state universities, research and publication are rewarded, but innovative teaching, maybe not so much.” By adding incentives to reward a digital growth mindset—like tenure and promotion criteria that include more emphasis on teaching methods and outcomes—instutions can begin to shift this culture.

Trowbridge adds that even teachers who want to incorporate digital literacy need a jump-start of inspiration and support. “Instructors need to understand how to get started, and why. They may have good intentions but don’t know what digital literacy looks like in their discipline. The next question is how do I get started in a way that doesn’t require me taking a 2-week course to be an expert, but helps me accomplish the key things?”

Westminster College instructional designer James Morris believes successful course design can help. And it all begins by understanding what instructors and students need. So when he consults with faculty members to design and develop their courses, he starts with two questions: What do learners need to be able to do? and How can the instructor assess their learning? “From there, we’ll look at instructional design approaches and then attach the right technology.”

The digital shift can begin with individual faculty, too. One geography professor at the University of Wisconsin–Madison focuses on developing digital communication skills. He has created a space in the library that gives students and faculty the opportunity to learn how to communicate ideas in more modern, sophisticated ways. Displays on the walls feature digital literacy projects, such as infographics students have created, and anyone on campus is free to drop in and discuss technology and creativity with a digital literacy expert. Creating a place where students and faculty can easily experiment, explore, and get help is one way instructors can seed change within their institutions.

Four ways to break ground.

There’s no shortcut to the digital growth mindset, but you can take steps that will make the concept and practice of digital literacy more widely accepted.

- **Align digital literacy with your core mission**—Help administrators understand how digital literacy fits in with your institution’s stated goals. Create presentations that outline how promoting digital literacy fits in with a drive for innovation, for instance. This groundwork can help you build a strong case for making digital literacy a priority.

- **Make room for exploration**—Organize a place where students and faculty can gather to try digital resources, share their experiences, and get help with digital projects. You might repurpose an underused area in the library or the student center as a new home for informal access to digital tools. It ultimately creates a community that can make digital literacy more accessible (and less intimidating) to everyone.

- **Create a support center for faculty**—Give faculty a place where they can comfortably learn how to incorporate digital literacy in their teaching. Ideally, teachers could drop in and learn to use digital resources, consult with instructional designers, and discuss ideas for adapting courses with more experienced colleagues.

- **Consider digital elements at the course design stage**—When developing courses, always ask, “Is there an opportunity to add a digital component? Will it enhance learning? Would it make the projects more interesting and challenging?” Just introducing the possibility each time can lead you to new ideas and opportunities.
Even institutions that have the most advanced digital literacy resources today will continue to face the need for change. A digital growth mindset is a practice, not an end in itself, and it’s one that requires continuous support and transformation. According to the NMC Horizon Report, ongoing digital training should be a top institutional priority. “It requires substantial leadership to create effective programs that enable busy educators to take time to learn new skills.”

New models of training and support are evolving, says Trowbridge. “In the old model, faculty took a class in a digital tool and figured out how to apply it in their classrooms.” Now it’s less about just learning a tool. Institutions are setting up spaces where faculty can come together and get support for developing a course or idea, or changing the way they’re working. “The trend is to create more of a drop-in center with technology and instructional design resources—so universities can help faculty figure out how to teach a concept and what technology to use to do that.”

Morris suggests that digital literacy stands a better chance of success “if the institution can create an incubator for ideas to flourish. In my experience, most successful programs and digital learning environments needed time and had naysayers at the beginning. We need to support creative ideas and try to remove any unnecessary red tape.”

Making digital literacy an integral part of the higher education experience—something students can take for granted wherever they attend college—won’t happen overnight. But there are plenty of good models for inspiration and increasing awareness of the crucial advantages digital literacy brings to both students and institutions. The seeds of a digital growth mindset in higher education have been planted, in which universities will embrace potential more than they protect tradition.

Janet Napolitano, president of the University of California, sees institutions rising to the challenges and cultivating a digital growth mindset. “Higher education in this country is not in crisis,” she declares. “Instead, it is in motion, and it always has been. Higher education evolves as knowledge expands, societies change, and new technologies are introduced. This does not mean that we should relax: There should be no comfort taken in maintaining the status quo.”
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4 Ibid.


6 “Higher education will never be the same!” Accenture Consulting.


11 Tacy Trowbridge.


13 “Writing Her Own Future With A Digital Skill Set,” Adobe video, August 28, 2015, https://www.youtube.com/watch?v=vSS2JZBzQfY.

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16 Karen McCavitt, senior group manager, Adobe Education marketing, personal interview, May 18, 2016.

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