

HOW CAN WE BETTER
PREPARE STUDENTS
FOR COLLEGE AND
CAREER?

TABLE OF CONTENTS

Abstract	3
What We'll Cover in This White Paper	3
What Are College- and Career-Ready Skills?	4
How Do College- and Career-Ready Skills Relate to Career and Economic Success for Students?	6
How Can You Increase College- and Career-Readiness Skills?	7
Conclusion	9
References	10



HALEY HUBERTY

M.Ed., Learning
and Technology



PENELOPE MOODY

M.Ed., Elementary
Education



PHILIP MAYHOFFER

M.A., Educational Psychology

ABSTRACT

Each year teachers and administrators are tasked with the huge responsibility of ensuring every instructional minute is utilized and every standard is accounted for. While student success is measured by mastery of academic standards and meeting graduation requirements, teachers know that a student's lifelong success depends on more than just content knowledge.

Teachers and administrators are struggling to prepare students with necessary skills like collaboration, perseverance, and problem-solving for life beyond the classroom; additionally, educators are struggling to find resources to direct students toward careers that interest them and allow them to achieve economic independence.

With a growing list of standards and tighter time constraints, how do we, as educators, ensure students are leaving high school with a mastery of academic content as well as the mastery of essential college- and career-ready skills?

This white paper serves to show how project-based learning with a STEAM focus can be combined into a comprehensive solution to build college- and career-readiness skills and ensure students are successful no matter what their post-secondary experiences look like.

WHAT WE'LL COVER IN THIS WHITE PAPER

- What Are College- and Career-Ready Skills?
- How Do College- and Career-Ready Skills Relate to Career and Economic Success for Students?
- How Can You Increase College- and Career-Readiness Skills?

WHAT ARE COLLEGE- AND CAREER-READY SKILLS?

“The child’s individual liberty must be so guided that through his activity he may arrive at independence ... the child who does not do, does not know how to do.”

—The Montessori Method

College- and career-ready skills include knowledge, skills, and behaviors that have been identified essential for high school graduates to enter college and the workforce and compete in the global economy⁸.

Many of the college- and career-ready skills are built around behaviors that help students solve problems and interact with others, and these skills have become increasingly valuable as our lives are more intertwined with the dynamic global economy.

College- and career-ready skills are often referred to as soft-skills or 21st-Century skills, and can be broadly grouped into four major categories: professional, interpersonal, communication, and entrepreneurial⁵ (see Figure 1).

These skills are important not only for students who visibly struggle with school but inadequacies have also been observed in academically high-achieving students who underachieve in college because they have not been taught the necessary skills to work through challenging situations².

Post-secondary students surveyed in a 2009 study indicated the major factors contributing

to their underachievement, aside from any deficiency in content knowledge, included a lack of time-management skills and lack of self-discipline and motivation².

It’s also been observed that U.S. high school students are demonstrating an increased lack of proficiency in math and science, but interestingly when employers were surveyed their concern did not lie in lack of content knowledge, but rather they considered inadequate problem-solving skills to be the most serious skill deficiency in their current employees⁷.

With feedback from college and employers, this significant lack of soft-skills has gained the attention of stakeholders in secondary education, and educators are finding ways to add learning that includes these skills in parts of their instructional day through district career development initiatives and electives directed at social-emotional learning and personal development, but it’s not enough to close the gap.

ENTREPRENEURIAL

- Critical thinking and problem-solving
- Creativity and innovation
- Inquiry and analysis
- Risk-taking



PERSONAL

- Initiative and self-direction
- Personal responsibility and self-management
- Adaptability and flexibility
- Personal awareness
- Learn independently
- Perseverance



CIVIC/INTERPERSONAL

- Core academic foundation
- Collaboration and teamwork
- Communication
- Global and cultural awareness
- Ethics and integrity



PROFESSIONAL

- Time management
- Career literacy
- Grit and resilience
- Work ethic; dependable and reliable
- Self-advocacy



FIGURE 1. The four main groups of college- and career-ready skills outlined by the Colorado Department of Education. Adapted from Reference 5.

HOW DO COLLEGE- AND CAREER-READY SKILLS RELATE TO CAREER AND ECONOMIC SUCCESS FOR STUDENTS?

Data has shown a lack of college- and career-ready skills can have more than an impact on self-esteem; some impacts can have long-lasting effects.

The U.S. Department of Education estimates that over a third of incoming freshman in college require some type of remedial courses and this type of re-teaching can come at a significant cost to students and their families. Furthermore, it can negatively impact the duration and graduation rates of students¹⁰.

It's often hard to determine whether students require remedial courses because they lack of content knowledge alone. Lack of self-motivation, time-management, and flexibility contribute to students' poor performance too, and these are the skills that can be

hardest to teach as they require students to apply the skills to different situations for transfer.

Students deterred from post-secondary experiences due to under preparedness or students who dropout of college programs due to poor performance face a future with fewer job opportunities, lower lifetime earnings, and a greater likelihood of being unemployed and underemployed than their peers who receive a college degree⁹.

It is estimated that 80% of jobs require some form of post-secondary education or credentials⁴; therefore, it is critical that all students leave their K-12 education prepared with the 21st-century skills necessary for them to navigate and succeed in college and career experiences.

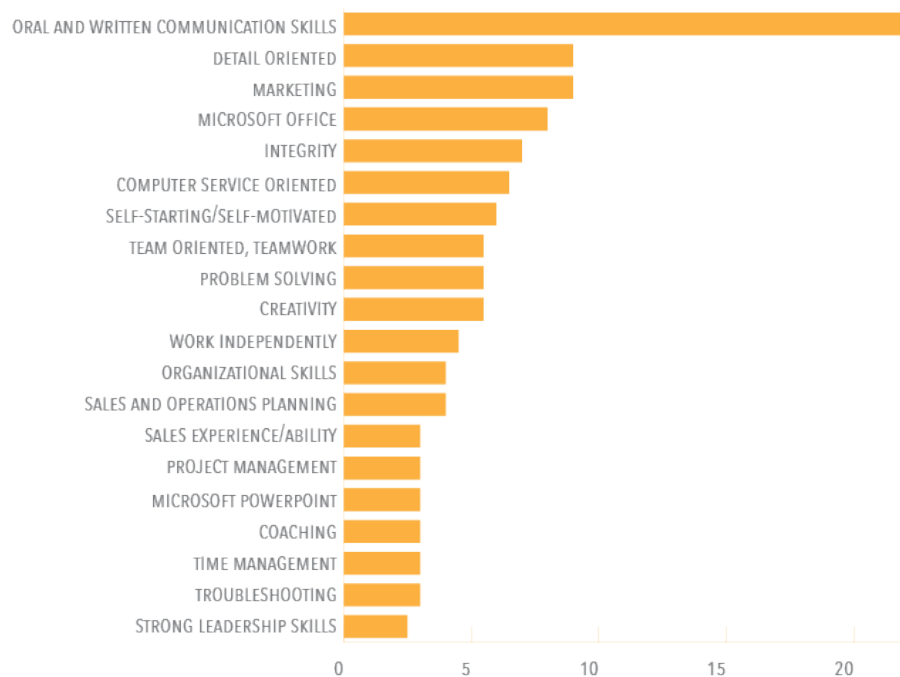


Figure 2. U.S. Bureau of Labor and Statistics data for most desired skills in labor force as reported by businesses. Adapted from Reference 1.

HOW CAN YOU INCREASE COLLEGE- AND CAREER-READINESS SKILLS?

In 2015, the Every Student Succeeds Act (ESSA) was signed into law, shifting the emphasis of achievement from core academic classes to a “well-rounded” education⁶.

At the state level, schools gained the power to determine the instructional methods used to educate students, including personalized learning⁶. Even before ESSA became a law, initiatives were created to ensure that all students leave formal education prepared to be successful in the 21st century.

The Partnership for 21st Century Skills, known as P21, partners with schools, organizations, and educators to promote a comprehensive education that includes academic content and college- and career-ready skills³.

P21’s Framework for 21st Century Learning is built on five key support systems that support a comprehensive education: standards, assessment, curriculum and instruction, professional development, and learning environments.

As more educators focus on preparing students for life beyond the classroom, the result is often a pieced-together framework of various approaches and methods.

In almost every school district, meetings are held to discuss project-based learning, STEAM

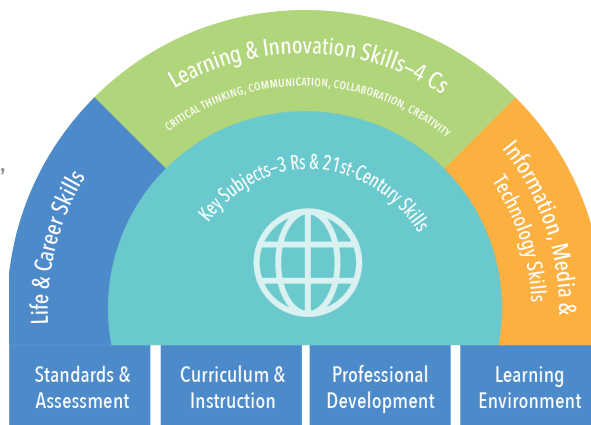


Figure 3. Framework for 21st Century Learning explained. Adapted from Reference 2.

education, engineering design, personalized learning, and other instructional practices that foster the development of 21st-century skills.

These initiatives have been adopted across the nation to support these skills, but these instructional methods rely on consistent use, adequate professional development, changes to the learning environment, and aligned assessments.

The challenge that remains is identifying and implementing a comprehensive solution that changes the learning culture school-wide so students are prepared for post-secondary experiences.

Since 1987, Creative Learning Systems' team of educators has developed, tested, and improved to meet this growing nationwide need to support the development of college- and career-ready skills. Our SmartLab Learning solutions provide an approach that begins with an innovative learning space that has the technology and resources to support student-led, project-based learning with a STEAM focus.

Whereas many programs provide one or two key support systems, the SmartLab Learning approach delivers personalized, student-led activities, ongoing professional development, authentic assessments, and a space to serve as a catalyst for transforming learning in a school.

The engaging activities are student-facing and place students in the driver's seat. As the leaders of their own learning, students learn to use available resources, and locate additional resources to answer their own questions.

An integral part of the SmartLab Learning approach is collaboration. Students embrace their peers as valuable partners in the problem-solving process and work together to complete projects. Though the focus is on the learning process, students explore and use a wide variety of tools that increase in sophistication. Beyond that, students learn how to approach unfamiliar tools and figure out how to use them effectively.

Supporting students as they take greater ownership of their learning requires a shift away from the prevailing instructional practices of the last century. While many educators have navigated that shift on their own to transform learning in their classrooms and schools, that transformation can be short-lived without ongoing support and development.

Through extensive up-front training, and ongoing coaching, teachers working with our SmartLab educators receive the support they need to facilitate student-led learning confidently. The shift from teacher-directed to student-led learning allows teachers the time and opportunities to coach and guide students in the development of 21st-century skills.

Whether its in our SmartLab HQ—a dedicated learning environment—or in our mobile or in-classroom spaces, our professional development serves as an incubator for innovative learning that permeates into the whole school culture.

As students and teachers utilize the SmartLab Learning solutions, these innovative approaches to learning become common practices in all spaces throughout the school.

The widespread implementation of student-led and project-based learning gives students exponentially more opportunities to develop personal, professional, interpersonal, and entrepreneurial skills.

CONCLUSION

College- and career-ready skills begin well before students start making plans for the future. 21st-century skills, especially time management, self-direction, and problem-solving, are essential to success in whatever endeavors students pursue.

Providing opportunities for students to practice these skills in authentic ways is increasingly important to meet today's demands. Implementing an effective system that supports student development requires significant investment of time and resources.

Our SmartLab Learning solutions alleviate the responsibility of developing a comprehensive solution from scratch, and allows educators to focus on what matters most—their students.

ABOUT CREATIVE LEARNING SYSTEMS

Creative Learning Systems has pioneered the conversion of traditional learning environments to project-based learning experiences since 1987. Today, Creative Learning Systems partners with the most innovative school leaders nationwide to provide personalized, project-based learning experiences and environments that increase a student's capacity through engaged, active, and social problem solving.

With SmartLabs' suite of solutions, we have provided students with hands-on, project-based learning experiences that ignite their passion for science, technology, engineering, and math; helped them build lifelong communication, collaboration, and critical-thinking skills; and empowered them to approach challenges with creativity.

REFERENCES

1. Anderson, C., **Keys to the Future: Align Workforce Readiness Skills to Ensure Student Success.** (2016).
2. Balduf, M., **Underachievement among college students.** *Journal of Advanced Academics* 20, 274-294 (2009).
3. Battelle for Kids, **Framework for 21st Century Learning.** (2019).
4. Coalition for Career Development, **Career Readiness for All.** (2019).
5. Colorado Department of Education, **Essential Skills Needed for the Workforce of Educational Opportunities Beyond High School.** (2019) Retrieved from <https://www.cde.state.co.us/postsecondary/careerreadiness>.
6. Lee, M., **Every Student Succeeds Act (ESSA): What You Need to Know.** (n.d.) Retrieved from <https://www.understood.org/en/school-learning/your-childs-rights/basics-about-childs-rights/every-student-succeeds-act-essa-what-you-need-to-know>.
7. Morrison, T. et al., **Boiling point? Skills gap in U.S. manufacturing.** (Deloitte Development LLC and The Manufacturing Institute, 2011).
8. Mishkind, A., **Overview: State Definitions of College and Career Readiness.** (CCRS Center, 2014). Retrieved from <https://ccrscenter.org>.
9. National Science Board, **Science and Engineering Indicators 2018.** NSB-2018-1. (National Science Foundation 2018). Available at <https://www.nsf.gov/statistics/indicators/>.
10. U.S. Department of Education, **College- and Career-Ready Standards.** (n.d.) Retrieved from <https://www.ed.gov/k-12reforms/standards>.