

Essential Skills Report

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Executive Summary

In 2016, KC Rising released the Common Sector Competencies report, clarifying the skills valued by employers to help teachers and school districts align teaching and learning with the demands of the workplace. Many schools embraced the Common Sector Competencies, and teachers put into practice instruction to build and enhance these skills. As implementation grew, educators asked for help in prioritizing the 23 Common Sector Competencies.

Representatives from industry and education worked with learners to further refine and clarify the competencies. As part of that collaborative effort, a research team from the Urban Education Research Center convened young professionals who had entered the workplace in the previous one to five years to provide real world feedback on what it takes to enter and succeed in the world of work. They confirmed six categories of competencies as Essential Skills. These are:

- **Communication** – The ability to adapt within various channels, to connect effectively with clients, co-workers, supervisors, and other collaborators.
- **Collaboration** – Cohesive teamwork that recognizes and leverages the skills and knowledge of colleagues across a range of disciplines.
- **Critical Thinking** – Problem-solving that synthesizes information, anticipates new challenges and opportunities, and builds strategies toward workplace effectiveness.
- **Interpersonal Skills** – Treating others with empathy and respect, building trusting relationships, and creating a sense of belonging and shared purpose.
- **Proactivity** – Taking the initiative to seek out and act on opportunities to learn, innovate, and add value to an organization.
- **Executive Function** – The self-accountability needed to work independently, manage tasks and resources to meet deadlines, and deal with ambiguity.

As recent high school and college students, the young professionals also provided much-needed information about the various in-school and out-of-school experiences that gave them real advantages. Descriptions of formative experiences confirmed that Essential Skills are largely being acquired outside the high school and college environment, contributing to inequities. They also verified the existence of a skills gap between how important a skill is in the workplace and how prepared they felt upon entering the workforce. Self-reports on preparedness suggest perceived gaps may widen by gender and race.

This study validates the importance of the Common Sector Competencies and the instincts of educators to focus on building a set of core skills. A set of recommendations is included to enhance Essential Skill building systematically and systemically so that quality and access are improved and skill mastery is measured and documented. It will take the continued resolve and intentionality of educators and industry working together to better prepare learners with the Essential Skills needed to succeed in the future.

Acknowledgments

This work is a product of collaboration. Special recognition goes to DeBruce Foundation for underwriting the study and report. Also, thank you to our study partners and employers, without whom this study would not have been possible.

Study Partners

These organizations helped shape the study, guide the process, encourage participation, and share findings:

- DeBruce Foundation
- Ewing Marion Kauffman Foundation
- KC Rising
- KC STEM Alliance
- PREP-KC
- Real World Learning
- Urban Education Research Center
- Workforce Partnership

Employers

This work is aligned with KC Rising, a regional economic development initiative formed in 2015 to help KC grow faster and more intentionally. KC Rising is business-led, metrics-driven, and focused on the long term.

KC Rising's goal: achieving a regional prosperity for all by aligning and accelerating community effort. KC Rising measures progress against 10 benchmark metros that we typically compete against. The goal is for KC to rise in rank among these metro regions to boost the economy for everyone.

To accomplish this, KC Rising relies on a distributed implementation model, allowing for a multitude of leaders and teams to work together. Guided by a steering committee composed of business and education leaders, as well as regional elected officials, KC Rising concentrates its efforts on systemic progress within seven pillars of prosperity: enterprise, industry, inclusion, connectivity, culture, neighborhoods, and education.

The Essential Skills Study will advance KC Rising's shared vision by supporting the Education pillar.

KC Rising's Education Platform

Learners of all ages need access to continuous, innovative education to meet evolving workforce needs.



Because the rate of technological advancement and change in our global economy continues to increase, more than half of today's schoolchildren will soon have careers in occupations that don't currently exist. Meanwhile, businesses struggle to find the talented workers they need to fill high-quality jobs now and create more in the future.

To effectively address this gap, talent and potential must be recognized, maximized, and met with resources and attention across the learning continuum. A foundation of technical knowledge, along with Critical Thinking and Communication skills, allows learners of all ages to remain competitive. Building an agile culture of enduring, well-rounded education will keep involved citizens inventing, creating, and thriving.

Industry-led cooperation, alongside flexible credentialing, creates trailblazing regional talent-to-work pipelines by connecting classroom and real-world learning with hiring. This system should strive to remain nimble and responsive as our economy evolves. KC is proudly at the forefront of this movement, with engaged stakeholders focused on measurable outcomes. We must continue to reimagine, disrupt, and transform.

01

Why do essential skills matter?

An elusive “skills gap” is mentioned in almost every conversation about our nation’s workforce – but what exactly is this gap, and what can we do about it?

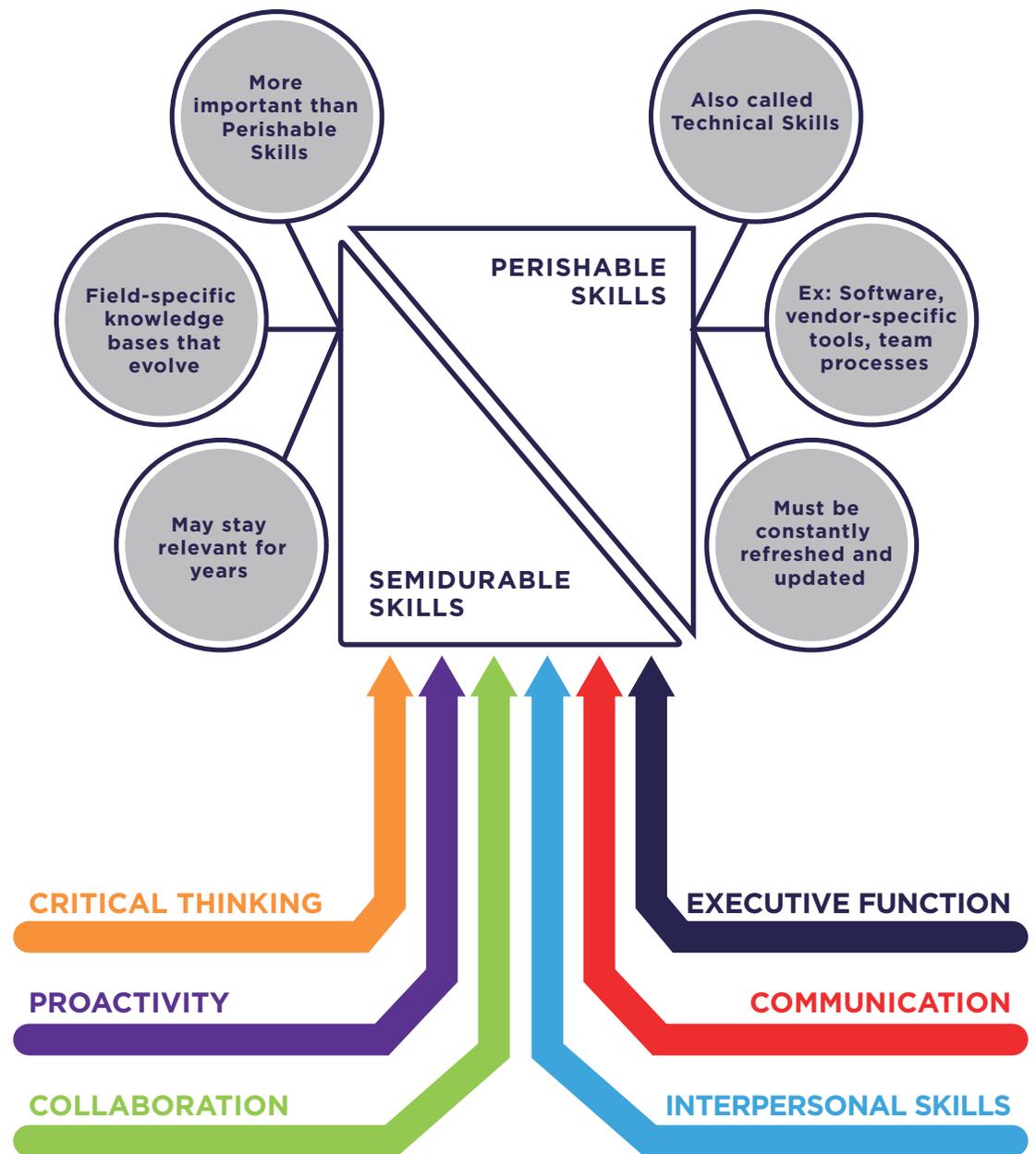
First, let’s define the skills in question. Technical Skills are based on foundational knowledge or expertise in a subject. Then, there are the uniquely human skills, often referred to as “soft skills.” This second set of skills has many names – power skills, future skills, timeless skills, or essential skills. In the KC region, the term Essential Skills has been adopted because these are the skills that are increasingly important, in fact necessary in the next economy. Already, Essential Skills are a differentiator in hiring, promotion, and retention of employees.

Workers with a high competency in Essential Skills are in increasing demand. Essential Skills empower transitions and open opportunity, and are key to unlocking economic mobility. In the 21st century economy, jobs follow skills.

With multiple factors in flux on the technical side, Essential Skills don't evolve as quickly. An October 2020 article published by Chief Learning Officer describes an "interdependence of human and technical skills" that demands a new skill-development framework. Experts estimate that most skills have a "half-life" of about five years, with the most technical capabilities at just 2 1/2 years. Therefore, a base of new Technical Skills must constantly be rebuilt as they lose relevance over time, while changes in Essential Skills occur over decades as opposed to months or years. The framework outlined in this report identifies three categories of skills:

- 1. Perishable Skills:** Technology skills, especially those related to specific vendors, platforms, or programming languages that are updated frequently.
- 2. Semidurable Skills:** Field-specific technologies, processes, or tools that frame a base knowledge. These are replaced as the field grows, expands, and evolves.
- 3. Durable Skills:** A base layer of mindsets and dispositions. Not just a "way of thinking," but tangible, teachable, and measurable skills.

Essential Skills serve as the roots that feed and nourish the development of Durable, Semidurable, and Technical Skills. An emphasis on the development of Essential Skills is important to the success of students as they transition into careers. These Essential Skills are the foundation of agility in an increasingly volatile world.



02

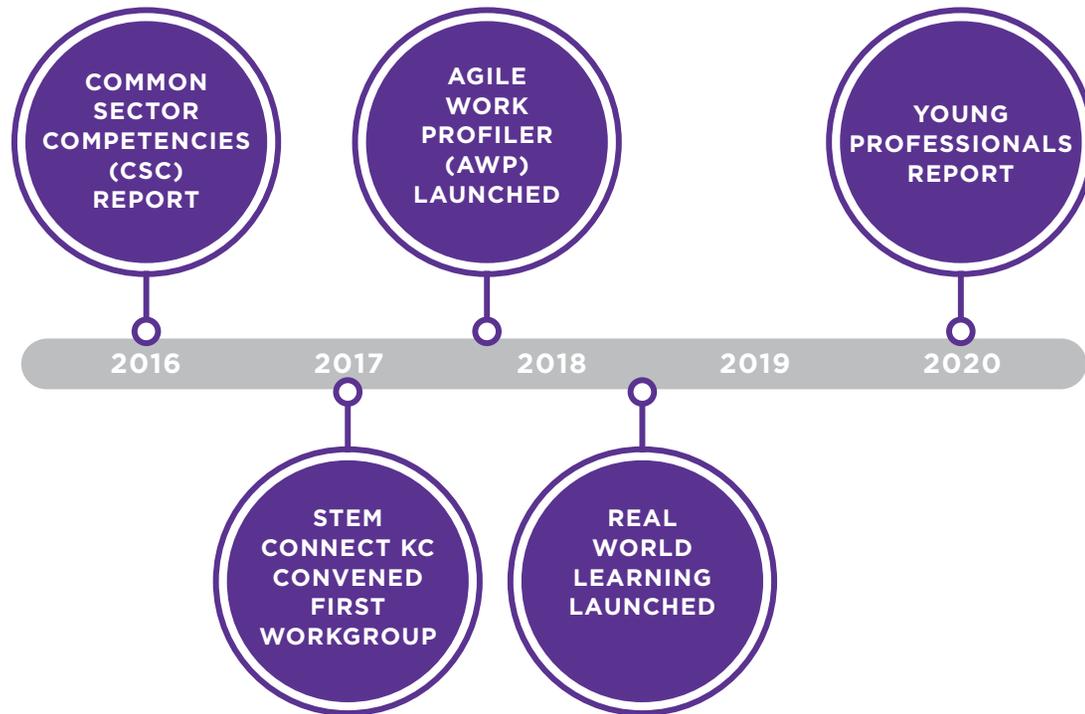
What are essential skills?

How We Got Here

In 2016, the KC Rising Human Capital Common Sectors Competencies (CSC) Task Force released the Common Sector Competencies report, designed to clarify the skills valued by employers across all sectors of the workforce. The report, which attracted widespread interest, created a common language for employers, employees, teachers, schools, and school districts to discuss and collaborate on P-20 workforce development.

As the CSC framework was implemented across Kansas City, educators began asking for additional guidance. Specifically, they asked for help in prioritizing the 23 competencies and translating them into language that students could understand. In 2017, work began to refine and clarify the competencies.

TIMELINE: KC WORKPLACE PREPAREDNESS EFFORTS



The Integrating Common Sectors Competencies workgroup gathered feedback from teachers, high school students, and young professionals. Having entered the workplace in the past one to five years, the young professionals supplied valuable insight about what it takes to enter and succeed in the workplace. As recent high school and college students, they also provided much-needed information about the various in-school and out-of-school experiences that gave them real advantages.

Focus groups with young professionals across Kansas City allowed us to identify six categories of competencies, or Essential Skills: Critical Thinking, Collaboration, Communication, Interpersonal Skills, Executive Function, and Proactivity. They described the relationship between skills as hierarchical, with Communication and Executive Function serving as the baseline abilities. They talked about the strong connection between Communication, Interpersonal Skills, and Collaboration, emphasizing the importance of adaptability and creativity across all categories.

In 2019, more than 350 young professionals weighed in, validating the importance of the skill set and describing their own experiences and development. This report builds off the work of the Common Sector Competencies by leveraging this data for further insight into the skills required to thrive in the modern workplace.

SHARED VALUES AMONG KC INITIATIVES

KC Rising: Common Sector Competencies	The DeBruce Foundation: Agile Work Profiler	Kauffman Foundation: Portrait of a Graduate	PLTW: Transportable Skills
CRITICAL THINKING			
<ul style="list-style-type: none"> • Use basic applied mathematics • Solve complex problems • Think critically • Interpret and apply data • Cultivate innovation 	<ul style="list-style-type: none"> • Working with information • Innovating 	<p>THINK</p> <ul style="list-style-type: none"> • Critically think • Exhibit discernment • Adaptive problem-solving • Make reasoned decisions 	<ul style="list-style-type: none"> • Critical and creative thinking • Problem-solving
COMMUNICATION			
<ul style="list-style-type: none"> • Speak influentially • Listen actively • Write efficiently 	<ul style="list-style-type: none"> • Selling and communicating 	<p>RELATE</p> <ul style="list-style-type: none"> • Tech-savvy • Communicate 	<ul style="list-style-type: none"> • Communication
COLLABORATION			
<ul style="list-style-type: none"> • Collaborate • Attract and develop talent • Build effective teams 	<ul style="list-style-type: none"> • Managing • Developing others 	<p>RELATE</p> <ul style="list-style-type: none"> • Collaborate 	<ul style="list-style-type: none"> • Collaboration
INTERPERSONAL SKILLS			
<ul style="list-style-type: none"> • Focus on customer • Instill trust • Value differences 	<ul style="list-style-type: none"> • Serving and caring 	<p>RELATE</p> <ul style="list-style-type: none"> • People-savvy • Value differences • Show integrity 	
EXECUTIVE FUNCTION			
<ul style="list-style-type: none"> • Plan and align • Manage ambiguity • Self-development • Manage projects • Manage complexity 	<ul style="list-style-type: none"> • Organizing • Managing 	<p>CONTRIBUTE</p> <ul style="list-style-type: none"> • Be accountable • Earn a living <p>THRIVE</p> <ul style="list-style-type: none"> • Express agency • Seek and use feedback • Manage ambiguity • Comfortable to fall and recover 	<ul style="list-style-type: none"> • Ethical reasoning
PROACTIVITY			
<ul style="list-style-type: none"> • Drive results • Display courage • Be flexible and adaptive 		<p>LEARN</p> <ul style="list-style-type: none"> • Growth mindset • Reflect and adapt • Curious and flexible <p>CONTRIBUTE</p> <ul style="list-style-type: none"> • Find and create opportunities • Create value for others <p>THRIVE</p> <ul style="list-style-type: none"> • Be courageous 	<ul style="list-style-type: none"> • Mindset

Defining the Six Essential Skills

COMMUNICATION

With platforms constantly evolving, the ability to adapt within various channels to connect effectively with clients, coworkers, supervisors, and other collaborators is critical.

What young professionals said:

- Being able to communicate well is the cornerstone of Interpersonal Skills, Critical Thinking, and Collaboration.
- Listening first and then communicating with co-workers, organizational leadership, and clients is one of the most important skills to master.
- The ability to translate industry jargon and upper-level concepts into more digestible terms is critical to client work.
- Contacting the right people in the right way is vital, as well as choosing the correct tone and level of formality depending on the audience and situation.

What does it look like?

- Communicate effectively and in a timely manner through different mediums (including phone, in-person, email, and videoconferencing).
- Effectively negotiate, present, persuade, and advocate for yourself and for your company.
- Adaptively read a situation and effectively respond.
- Communicate organizational goals and purpose clearly.

COLLABORATION

Effective teamwork is the engine that drives organizations toward their goals. Cohesive teams recognize and leverage the skills and knowledge of colleagues across a range of disciplines.

What young professionals said:

- Teams happen every day. Recognizing the importance of contributing and collaborating on a team, as well as knowing how to positively deal with conflict, is essential.
- Workforce collaboration involves working with a diverse array of people in a multitude of ways. Success with this requires the ability to step into a variety of roles.
- An essential part of team success is mutual understanding of personal priorities and schedules – i.e., recognizing when people are busy and knowing how to follow up in a professional manner to keep moving forward.
- Collaboration involves coming together as a team to merge independent work. Learning how to give and receive constructive feedback is vital to a positive environment.

What does it look like?

- Effectively lead, manage, delegate tasks, and work with teams.
- Foster teamwork, common goals, and individualized learning experiences.
- Develop a shared sense of purpose within teams while encouraging others.
- Recognize and utilize individual strengths and different perspectives.

CRITICAL THINKING

With access to more information than ever before, effective thinkers not only synthesize information but also anticipate new challenges and opportunities, and build strategies that increase their workplace effectiveness.

What young professionals said:

- Workplace problems often have many potential solutions. The ability to think through these options and avenues and choose the best fit is crucial.
- When encountering unforeseen roadblocks, Critical Thinking is vital in problem-solving and getting back on track.
- Critical thinking includes using existing skill sets and knowledge to solve problems and make decisions, but also knowing when and where to ask for help and track down information.
- The ability to think outside the box while creating strategies and solutions that are tailored to the clients' goals and objectives can be a differentiator for an organization.

What does it look like?

- Identify and solve problems.
- Develop innovative strategies for implementation and the execution of plans.
- Be flexible, adaptive, and creative in problem-solving strategies.
- See things from multiple perspectives to identify the best solution.

INTERPERSONAL SKILLS

People with strong Interpersonal Skills treat others with empathy and respect, build trusting relationships, and create a sense of belonging and shared purpose that is vital to success.

What young professionals said:

- Projects may require input from multiple departments, so good relationships and mutual respect are crucial to working effectively and efficiently.
- Key components of this skill include knowing how the team is going to work together, recognizing that people bear stress in different ways, and having empathy about what people are going through.
- The ability to read a social situation and predict how people are going to react to certain actions helps determine how to act with and around bosses, co-workers, and clients.
- When dealing with sensitive subjects, it is important to know how to ask personal questions while being respectful and polite.

What does it look like?

- Empathize, interpersonally communicate, and develop social relationships.
- Build trust with others and foster an environment of emotional and psychological safety.
- Resolve conflict and treat others with dignity and respect.
- Recognize and serve personal needs with a positive outlook and attitude.

PROACTIVITY

Individuals who take initiative propel themselves toward success. Curious, self-starting workers seek out and act on opportunities to learn, innovate, and add value to an organization's growth.

What young professionals said:

- Proactivity is the ability to understand what is possible within an organization, have the willingness to do something different, and then make the decision to pursue it, following through on an organizational and individual level.
- There are no step-by-step instructions in the workforce. The only way to make progress on projects and in your career is by actively seeking out opportunities to learn and grow.
- Harnessing the enthusiasm to learn and develop is key to career success.
- Learning how to fail fast and forward is a must in the workforce. The resilience built from making mistakes is a cornerstone to productivity and proactivity.

What does it look like?

- Recognize work that needs doing and initiate tasks.
- Be curious about your work, ask questions, and seek feedback from others with experience.
- Identify areas for and take initiative toward organizational change and improvement.

EXECUTIVE FUNCTION

Self-accountability, or “adulting,” is a fundamental skill in the workforce. Knowing how to work independently, manage tasks and resources to meet deadlines, and deal with ambiguity leads to professional success.

What young professionals said:

- The autonomy that comes with a job creates the responsibility to manage time, responsibilities, projects, personal growth, and mistakes.
- Self-management and organization don't have a universal approach. Individuals must discover what learning, managing, and organization styles work best for them.
- When timelines are derailed, it's imperative to know how to reprioritize and reevaluate what needs to be done, managing resources throughout the process.
- It can be easy to become overwhelmed, but stress can be minimized with a plan and focal points for the day.

What does it look like?

- Effectively plan and prioritize, self-monitor and regulate.
- Manage resources (monetary, time, etc.) to deliver quality results.
- Navigate stressful situations in a constructive manner and maintain focus.
- Maintain emotional control and professionalism at work through planning.

03

Methodology: Gathering the Data

In May 2019, the Kansas City Area Education Research Consortium (KC-AERC) conducted focus groups with 14 young professionals across industry sectors in the Kansas City metro area. Participants were asked to describe the Essential Skills used within their workplaces and to give examples of experiences that influenced these skills. Findings from the focus groups, in combination with input from industry leaders and existing research, resulted in the specification of the six Essential Skills and formed the basis of the Young Professionals Survey.

The gap in preparation of Essential Skills has been a primary concern in Kansas City. The goal of the Young Professionals Survey was to better understand the gap in these skills and opportunities for growth. The survey asked young professionals three questions:

1. How important are these Essential Skills to your current job?
2. Thinking about these Essential Skills, how prepared were you when you started your job?
3. What had the biggest impact on your Essential Skills in high school and college?

KC-AERC launched the Young Professionals Survey with support from KC Rising, KC STEM Alliance, Prep-KC, Workforce Partnership, The DeBruce Foundation, and The Ewing Marion Kauffman Foundation. Efforts were made to ensure that young professionals in KC Rising's fastest-growing industry sectors, young professionals of color, and young professionals working in the Kansas City metro area were represented in the sample.

More than 350 young professionals – defined as a person who has been out of school and in the workforce for one to five years – completed the survey. The final sample included 10% African-American, 13% Hispanic, and 62% white young professionals. Two-thirds worked in the Kansas City metro area, and 83% worked in one of KC Rising's top industry sectors.

04

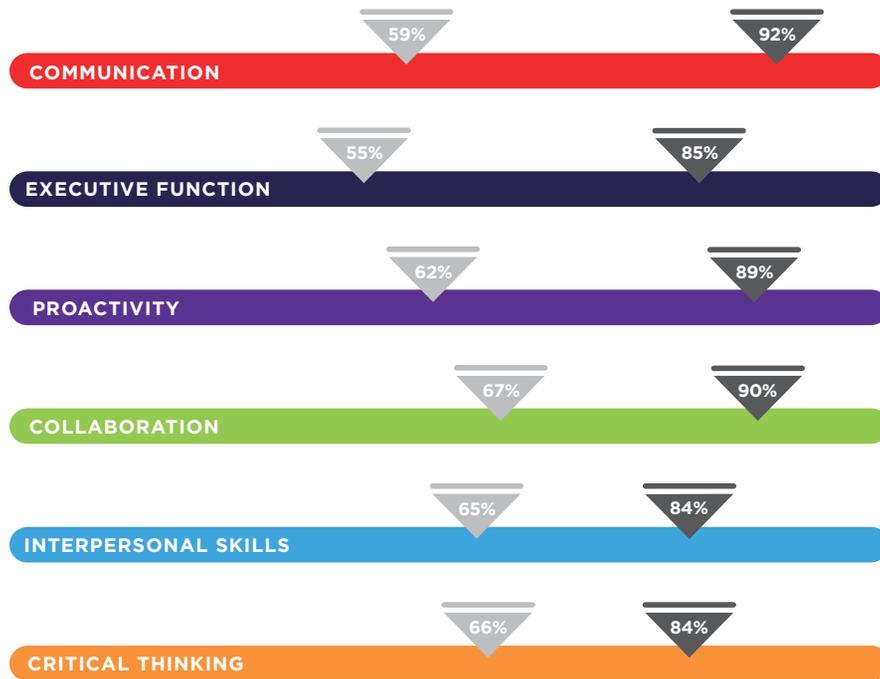
Where is the gap?

Employers are facing real skill gaps in hiring, and the most pronounced are in Essential Skills. In a survey of 704 employers across industries, the Chronicle of Higher Education found that half said they had trouble filling vacancies in their companies, noting that even though most applicants had the Technical Skills, many lacked the Essential Skills needed to be successful.

In a national study of millions of job postings, Burning Glass Technologies found that one in three postings explicitly requested Essential Skills, with employers even overemphasizing these capabilities, suggesting they were undersupplied in the candidate pool. According to the Workplace Learning Report by LinkedIn, Essential Skills training was the No. 1 priority for talent development in 2018.

The job posting and employer data provide an important look at the skills gap from the employer perspective. This report focuses on the skills gap from the young professionals' point of view, providing employee perspective on the issue. Taken together, they provide a fuller understanding of the extent of the skills gap and potential solutions to address the problem.

GAPS BETWEEN PREPAREDNESS AND IMPORTANCE



Notes on the Skills Gap Data

To assess the Essential Skills gap among young professionals, we analyzed data for each Essential Skill. We calculated the percentage of young professionals who indicated the Essential Skill was “important” or “very important” to their jobs, and then the percentage of young professionals who felt “moderately,” “very,” or “extremely” prepared in that Essential Skill when they started their jobs. The difference between these two percentages was classified as the gap.

Young professionals’ perception data help us understand the way they conceptualize and value workplace skills, as well as their sense of preparedness (or lack of preparedness) upon entering the workplace. An important reminder about occupational perception data is that it reflects respondents’ perceptions of themselves, their self-confidence, and sense of belonging. We know from established research that women and young professionals of color report lower levels of confidence, belonging, and skill attainment than white male young professionals, even when we consider work performance. It is important to keep this in mind when interpreting the data broken down by race and gender.

The skills gap analyses include an overview of the gap across industry sectors in Kansas City and then a set of subanalyses broken down by both gender and race and ethnicity. The overview includes data from a broad cross-section of professionals across 20 industry sectors, including 60% working in KC Rising’s five fastest-growing industries. This sample includes 38% young professionals of color.

The subanalyses provide a more detailed look at the data and are intended to provide additional insight into the findings. Given the smaller sample sizes in the subanalyses, we view these findings as preliminary. Further analysis, from the employer and employee sides, may reveal the roles that gender and race or ethnicity play in self-efficacy and skill development.

In Their Own Words: Quotes from Young Professionals

“The gap is big in Communication because internal people expect you to use high finance jargon – and then learn how to completely flip it to talk about it with clients. In school, there’s a strong emphasis on hard skills and technical language.”

“Working with a wide variety of people in college – different ages, majors, levels of technology skills – would have helped me learn Interpersonal and Communication skills, and how to determine what method works best for different kinds of people and activities.”

“I felt like I was floundering for the first year, not being used to having so much flexibility. I’m used to my college assignments – ‘write this essay’ – but I was totally stunned when I got an activity where I had to come up with my own things to do at work.”

“With my upbringing, you do what you’re told, when you’re told to do it. No more, no less. That’s it. And so that’s something that I noticed I had a really big gap in when it came to thinking outside the box and asking questions in the workplace. And I just never really knew when it was my place, to be able to speak up at the meeting or if I’m allowed to disagree with my boss on certain things.”

Overall Findings

Young professionals report a skills gap in all six Essential Skills. The gap ranges from 18% for Critical Thinking to 33% for Communication. Consistent with the job posting and employer data, young professionals report they are underprepared when they enter the workforce.

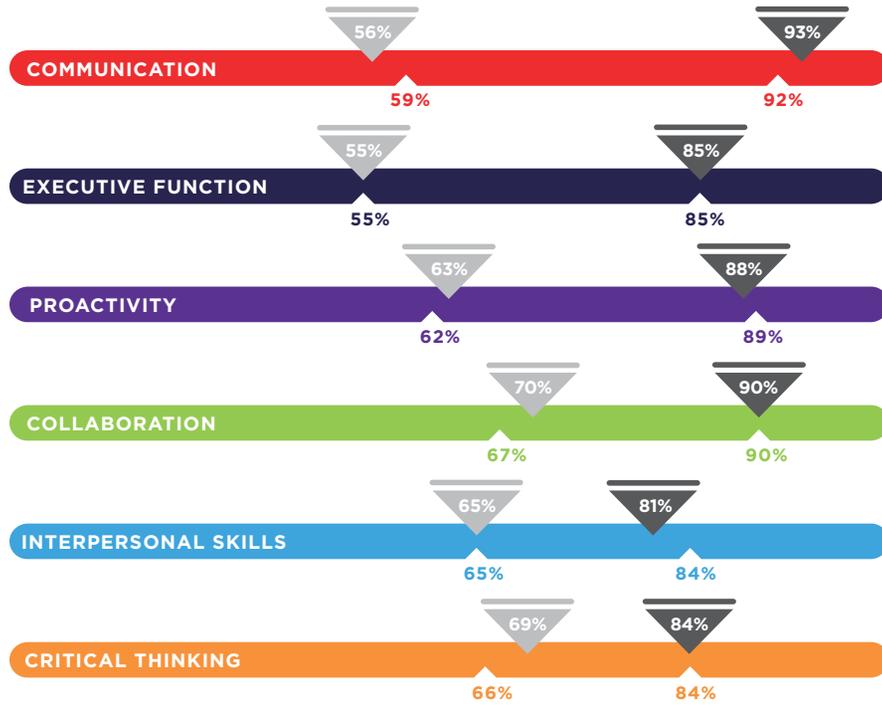
The Essential Skills gap is largest for Communication, Executive Function, and Proactivity. Even though the vast majority of young professionals identified Communication, Executive Function, and Proactivity as important or very important to the job, only 3 out of 5 said they were prepared. The gap is largest for Communication, a skill that employers have consistently reported as critical and difficult to find in new hires.

Young professionals call Communication and Executive Function the “foundational” skills that enable the other Essential Skills to flourish. Without them, it is difficult to cultivate the other skills.

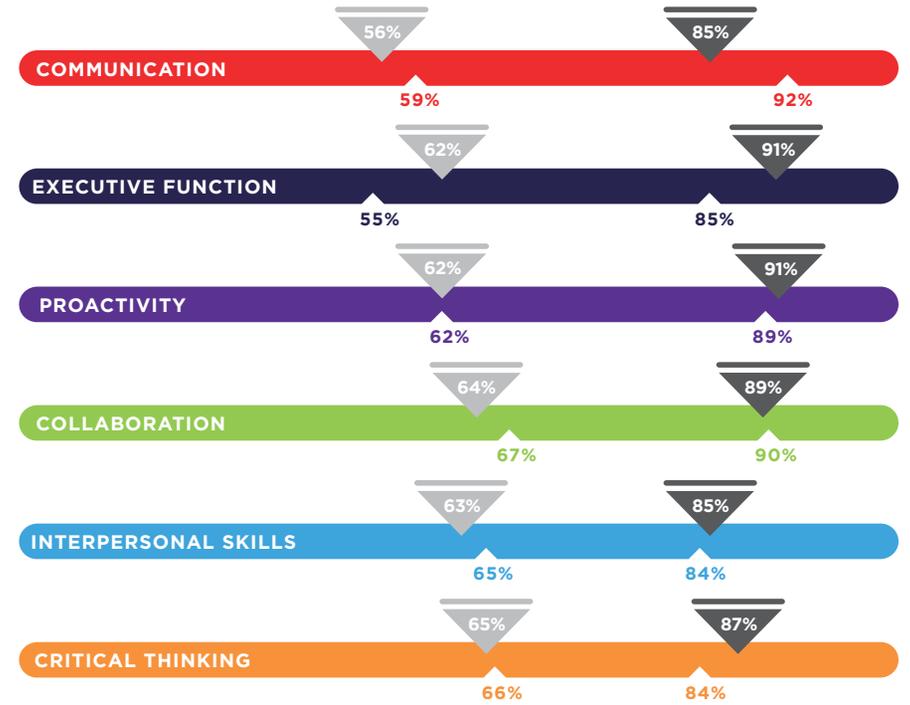
The Essential Skills gap varies by gender, with men reporting Communication as the largest and women reporting Executive Function as the largest. Communication was the rated as the most important Essential Skill by men and one of the two areas in which they were least prepared. Women rated Proactivity and Communication as the two most important skills, but said Executive Function was where they were least prepared.

The size of men’s skill gaps differed by Essential Skill; women’s gaps were more consistent. The gaps for men were largest for Communication (37%) and Executive Function (30%). Women’s gaps were largest for Executive Function (29%), but this was not far from the lowest gap in Interpersonal Skills (22%).

**GAPS BETWEEN PREPAREDNESS AND IMPORTANCE
GENDER - MALE**



**GAPS BETWEEN PREPAREDNESS AND IMPORTANCE
GENDER - FEMALE**



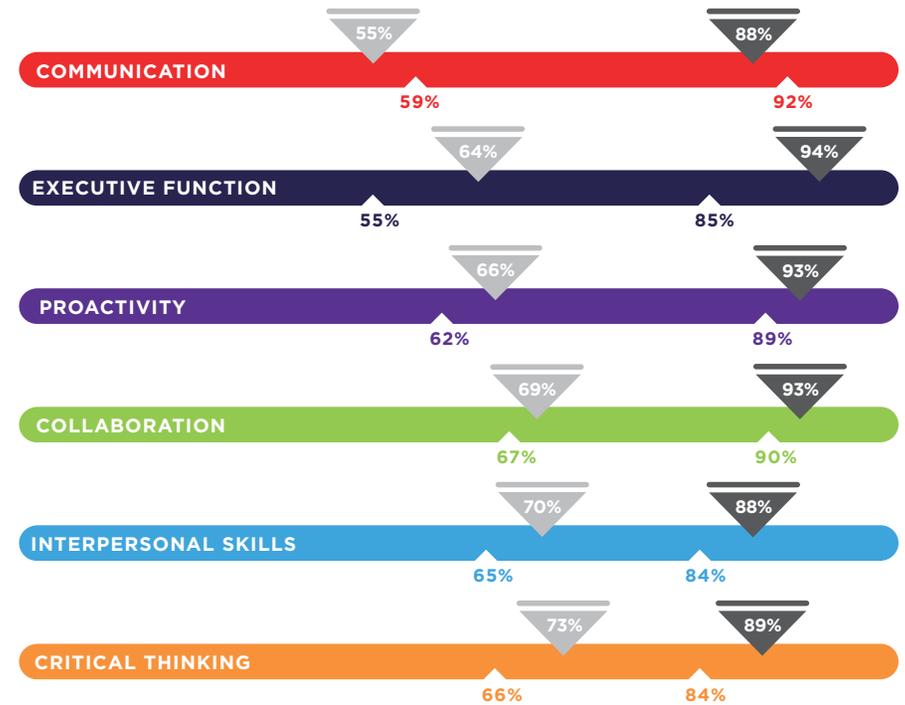
White young professionals showed a similar skills gap to the overall sample with Executive Function, Communication, and Proactivity as the top three gaps. White males reported being less prepared in Executive Function, making the Executive Function gap (33%) larger than the other five Essential Skills (16%-30%).

Hispanic/Latinx young professionals identified Proactivity as the top skills gap. Only 49% of Hispanic/Latinx young professionals reported being prepared in the area of Proactivity, making the Proactivity skill gap (39%) significantly larger than the other five Essential Skills (12%-27%).

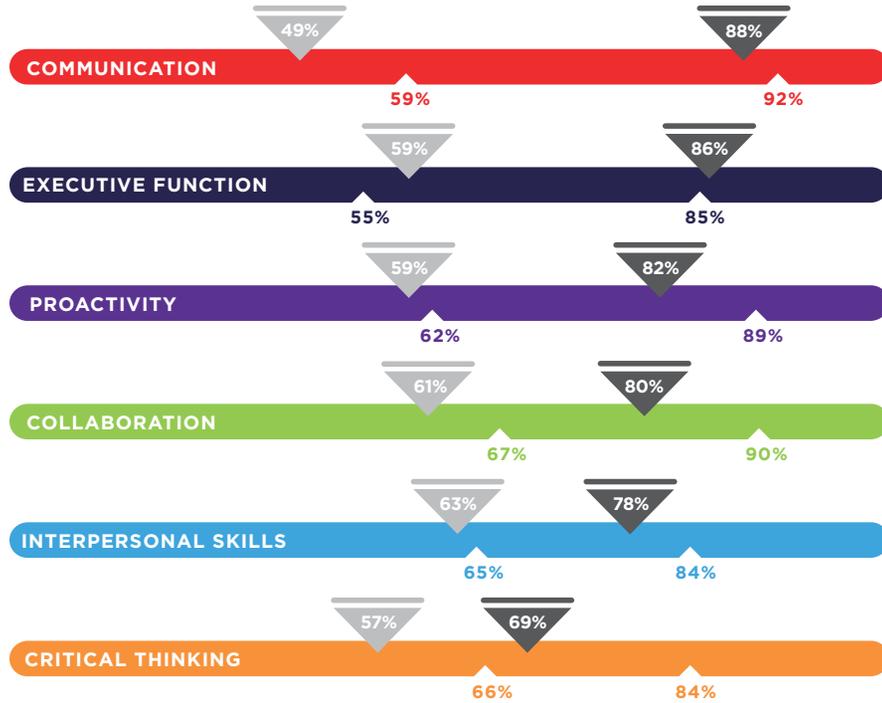
Black young professionals reported significant gaps in the areas of Communication (44%), Critical Thinking (44%), and Executive Function (38%) and a negligible gap for Interpersonal Skills (6%). Black males reported being significantly less prepared in Communication, Critical Thinking, and Executive Function. The small gap for Interpersonal Skills reflected their reports of high preparation and low importance for this skill.

White, Hispanic, and Black young professionals view the importance of the Essential Skills and their own preparation differently. The importance of each Essential Skill varied considerably by race/ethnicity.

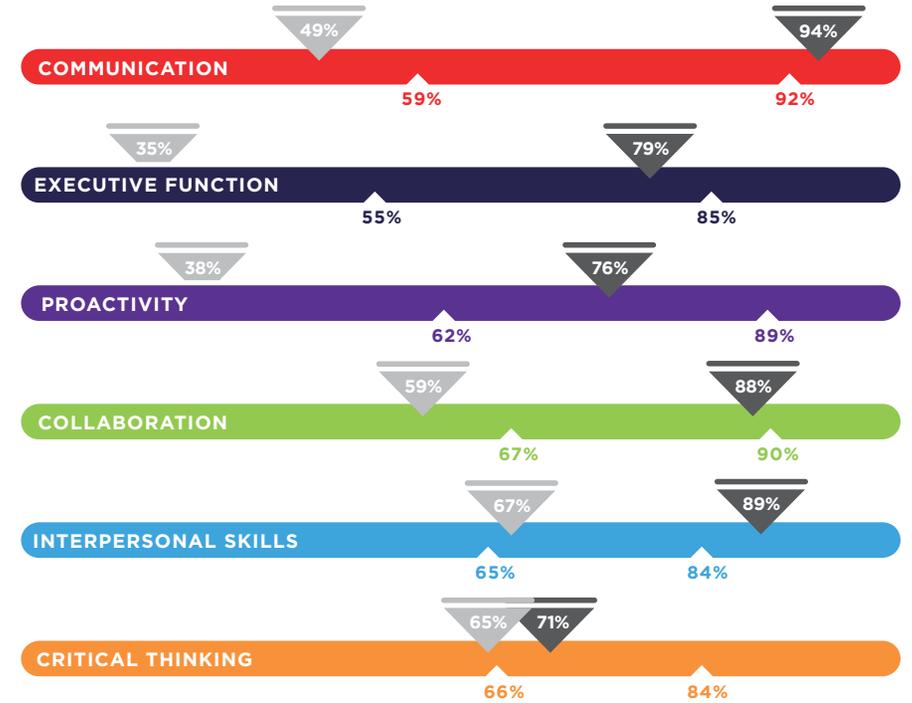
GAPS BETWEEN PREPAREDNESS AND IMPORTANCE RACE - WHITE/CAUCASIAN



GAPS BETWEEN PREPAREDNESS AND IMPORTANCE
RACE - HISPANIC/LATINX



GAPS BETWEEN PREPAREDNESS AND IMPORTANCE
RACE - BLACK/AFRICAN-AMERICAN



05

Where are students learning these skills?

People learn Essential Skills best by practicing them, watching and learning from others, and engaging in ongoing reflective practice. This part of the report looks at the range of experiences that shaped young professionals' Essential Skills.

Notes on Interpreting Skill Development Graphs

To assess where young professionals learned Essential Skills, we provided a list of in-school and out-of-school experiences. This list was generated based on existing research and input from young professionals during the focus groups.

For each Essential Skill, we asked young professionals to identify up to three of the most impactful high school experiences and, for those who attended college, college experiences. Young professionals were given the opportunity to elaborate on their answers as well as to specify other experiences.

The graphs show the percentage of young professionals who identified each experience as one of their three most influential experiences for learning that Essential Skill. It is important to note that the list contains both experiences that were readily available to most students, such as standard coursework and extracurricular activities, and experiences that were selectively available only to a portion of students, such as internships and research opportunities. As we interpret the data, access should be taken into consideration.

Analysis: Key Takeaways

Extracurricular activities play an important role in Essential Skill development. Extracurricular activities were consistently listed as one of the most influential experiences. In the areas of Communication, Collaboration, Executive Function, and Interpersonal Skills, it was the most frequently cited impactful experience, with over 40% reporting it influenced their development in these areas. Leadership in extracurricular activities was not far behind, with almost 1 in 4 young professionals noting leadership opportunities helped them grow in these areas.

Internships, especially in college, build multiple Essential Skills. In the areas of Communication, Executive Function, and Proactivity, internships during college were listed as the most influential experience. Given that not all young professionals had access to internships, this data highlights their powerful influence.

Academic coursework cultivates Critical Thinking. Young professionals point to coursework – regular, advanced, and elective courses – as important experiences for Critical Thinking. In-class learning appears to be an important avenue for building those skills.

“Real-world” learning experiences provide opportunities to build all Essential Skills. In focus groups, young professionals noted that projects that connected them to real-world problems forced them to work together to find a solution, communicate clearly, make a plan, and demonstrate curiosity and creativity. They spoke about learning to try and fail through these experiences. The experiences varied – internships, volunteering, sports, theater, employment – but they all shared a real-world connection and were a source of Essential Skills growth.

TOP DIFFERENCE-MAKERS IN SKILLS DEVELOPMENT

	COMMUNICATION		EXECUTIVE FUNCTION		PROACTIVITY		COLLABORATION		CRITICAL THINKING		INTERPERSONAL SKILLS	
	HIGH SCHOOL	COLLEGE	HIGH SCHOOL	COLLEGE	HIGH SCHOOL	COLLEGE	HIGH SCHOOL	COLLEGE	HIGH SCHOOL	COLLEGE	HIGH SCHOOL	COLLEGE
EXTRACURRICULAR ACTIVITIES	62%		44.6%				62.6%	43.8%			62%	43.5%
LEADERSHIP IN EXTRACURRICULAR	44.3%	38%	37.4%	36%			39.6%				40.7%	36.8%
OUTSIDE JOB/ INTERNSHIP		48.5%		36.6%		38.5%						
STANDARD COURSEWORK					41.3%	41.3%		47.4%	45.7%	59.8%		
ADVANCED CLASSES					46.5%				49%			
ELECTIVE COURSEWORK										37.4%		

Respondents assigning high impact to activity

06

Insights by Industry: Alignment and Variation

The relative importance of Essential Skills varies across industries. Shifts in weighting results in preparatory variation, and sectors must be assessed individually to understand their needs and potential solutions.

Advanced Manufacturing

THE SECTOR IN KC

Some of the largest manufacturing employers are Ford and General Motors, and food processing and fabricated metal production are also important parts of the area economy. The KC metro is below the national average in its share of workers employed in manufacturing, and it is also below average among the KC Rising benchmark metro areas.

If we dive deeper into each industry, though, we see there are many subindustries where KC has a substantial specialization. Typically, these represent clusters of a few firms. Most manufacturing industries grew faster here over the past five years than nationally.

- Beverage and tobacco product (46% growth in KC vs. 36% growth in U.S.)
- Plastics and rubber products (29% vs. 8%)
- Food (10% vs. 20%)
- Electrical equipment, appliances, and components (6% vs. 20%)
- Wood products (9% vs. 16%)

Transportation equipment, food, and fabricated metal are expected to lead the way in new hires over the next year. Team assemblers are by far the largest manufacturing occupation (8,287 jobs), followed by first-line supervisors (2,861), and packaging machine operators (2,150).

COVID-19 and the emphasis on social distancing have accelerated trends toward artificial intelligence (AI) and robotics. These are also looked upon as a solution to long-standing worker shortages. Manufacturing jobs also suffer from a stigma among younger workers.

KEYS TO CAREER SUCCESS

Employers say they need more workers with math skills and stamina. Firms also report being on the precipice of “big things” with 3-D printing and AI. Metro-area employers predict more integration of traditional and advanced manufacturing. Because of these changes, employers project higher demand for controls engineers.

Regardless of the end product, Communication is critical to success in the manufacturing industry, as part of relationships with co-workers, organizational leadership, and clients.

As routine and repetitive tasks are automated, uniquely human skills like Executive Function are increasingly important. It is important for product engineering professionals to manage their time, responsibilities, projects, personal growth, and mistakes. Employers state that attention to detail is important but hard to find.

Companies looking to hire also report that Proactivity is a differentiator. They are looking for workers with the intentionality to adapt a growth mindset, set realistic goals, and follow through.

Essential Skills in Highest Demand:

Communication, Executive Function, Proactivity

Global Design: Architecture, Engineering and Construction

THE SECTOR IN KC

There are more than 500 architecture, engineering, and construction firms in KC, with over 20 national and global headquarters. The KC metro region has established a collective of professional design service firms known as KC Global Design. Since 2015, employment growth in the Global Design sector has grown: Construction employment has increased 66%, employment in architectural services has increased 56%, and employment in engineering services has increased 12%.

Over the next five years, higher employment in Global Design is projected because of sector growth, as well as replacement demand caused by retirements or individuals leaving the sector to do different work.

- The five-year forecast of jobs in construction by total demand (including replacements) includes: construction laborers (5,298); carpenters (3,394); electricians (2,372); plumbers, pipefitters and steamfitters (2,085); and first-line supervisors of construction trades (3,377).
- The five-year forecast of total demand in architectural services includes: architects, except landscape and naval (279); architectural and civil drafters (114); surveying and mapping technicians (71); construction and building inspectors (67); and interior designers (49).
- The five-year forecast of total demand in engineering services includes: civil engineers (1,000); architectural and civil drafters (282); civil engineering technologists and technicians (261); electrical engineers (253); and mechanical engineers (244).

KEYS TO CAREER SUCCESS

Global Design professions are often known for rigorous training programs to build technical knowledge and skills. However, employers have made it clear that Essential Skills are key qualifiers for hiring and promotion to leadership positions. Young professionals identified the largest gaps in preparation in Global Design professions in the areas of Communication, Executive Function, and Proactivity.

To be successful in professional design services, an employee must be able to effectively communicate with clients through current channels. In many cases, there is no work without a sale to clients, and repeat work is based on building successful client relationships. Communication also occurs across design disciplines, and a breakdown could result in a serious safety issue for co-workers or clients.

Design service professionals are inherently problem-solvers. For example, the global COVID-19 pandemic affected all aspects of the economy - learning, work, health care, arts, sports, retail, and food service. Design service professionals have offered solutions in relation to air quality improvements, reduction of transmission through surfaces, and social distancing, with considerations for the aesthetic to improve a sense of safety and promote mental health. Design professionals took lessons from the past and applied their expertise to solutions to safely reopen the economy.

Whether on a job site or in an office, design service professionals will be presented with situations that are unplanned. When a plan meets an unplanned reality, Proactivity is essential. Successful design professionals will identify problems and offer solutions. Successful young professionals will have a vision for their career goals and chart a course to achieve that vision, including continued learning and self-initiated professional development.

Essential Skills in Highest Demand:

Communication, Critical Thinking, Proactivity

Finance and Insurance

THE SECTOR IN KC

The 58,000 jobs in the Finance & Insurance industry in metropolitan Kansas City are broken into broad categories:

- Insurance carriers and related activities. Jobs include: insurance sales agents (5,551 jobs), customer service representatives (3,658), claims adjusters (2,466), and claims clerks (2,281).
- Credit intermediation and related activities. Commercial banking is by far the largest component in this category, including positions such as tellers (3,567 jobs) and loan officers (2,226), followed by loan interviewers (1,649), financial services sales agents (1,599), and customer service representatives (1,479.) The largest occupation, tellers, is also the lowest paid (\$29,800 per year) as compared with loan officers, with an estimated salary of \$84,200.
- Securities, commodity contracts, and investments. Personal financial advisors (1,834 jobs) and financial services sales agents (1,638 jobs) represent more than half the jobs in this category.
- Monetary authorities. Because of the presence of the Federal Reserve Bank in KC, our largest specialization is central banking. Monetary Authorities is a narrowly defined sector. As befits its regulatory functions, financial specialists able to assess risk (134 jobs) and financial examiners (115 jobs) are the largest occupations.

KEYS TO CAREER SUCCESS

The finance and insurance industry is essentially a service industry. A professional in this industry will rely heavily on Communication skills in client relations and collaboration with colleagues. In addition, every client requires customized services. Successful finance professionals will be able to apply novel strategies, flexibility, and creative thinking for clients.

Essential Skills in Highest Demand:

Communication, Collaboration, Critical Thinking

Information Technology

THE SECTOR IN KC

More than any other field, technology cuts across industries. There are as many tech workers outside tech industries as inside.

Location quotients assess the degree of specialization in the economy. They compare each industry's share of the local economy to the same industry's share of the national economy. A location quotient is calculated by dividing the industry's local share (industry employment as a percentage of total employment) by its national share. If the location quotient (LQ) is greater than 1, the local economy specializes in that industry, although the specialization is not typically considered significant until the location quotient reaches at least 1.1.

Compared to other areas, KC has a specialization in electronic component manufacturing (LQ 9.33), computer system design services (LQ 2.52), engineering services (LQ 1.87), and custom computer programming services (LQ 1.27.) In addition, KC is home to major employers in computer systems design (such as Cerner), engineering services (Black & Veatch, Henderson) and electronic component manufacturing (Garmin, Honeywell, etc.).

Computer systems design and electronic component manufacturing are growing much faster here than elsewhere (30% and 40% respectively, compared to 13% and 15% in the U.S.) Over the next five years the total demand for computer-related occupations is projected to be:

- Software developers and software quality assurance analysts and testers (5,544)
- Computer user support specialists (3,027)
- Computer systems analysts (2,594)
- Network and computer systems administrators (1,737)
- Computer programmers (903)

KEYS TO CAREER SUCCESS

Information Technology (IT) is often recognized as rich with micro- and stackable credentialing. These programs offer technical expertise, but based on the reports of young professionals, they leave a gap in learning around Executive Function, Communication, and Interpersonal Skills.

Successful IT professionals are not just maintaining or supplying expertise on a specific software, hardware product, or programming language - they are providing creative business solutions. This process was described by employers as “design thinking” - an iterative way to seek to understand, challenge assumptions, redefine problems, and identify alternative strategies and solutions, which can take the form of new systems, products, or processes.

When technology is not working, it creates a stressful situation for users, and a successful IT professional handles that situation with professionalism and emotional control. Consistent and clear communication is imperative.

The IT field is often stereotyped as a person working alone in a room with no windows. The reality involves human interaction and interpersonal skills. To be successful, an IT professional needs to develop social relationships, build trust with clients and colleagues, and serve people's needs with a positive outlook and attitude.

Essential Skills in Highest Demand:

Communication, Interpersonal Skills, Executive Function

Life Sciences

THE SECTOR IN KC

There are three main components of life sciences in KC: health IT, research and diagnostics, and life science manufacturing. As the largest employer in KC, Cerner currently dominates the health IT component. However, there are firms being led by former Cerner executives that are emerging leaders to watch: Netsmart and WellSky.

There is a general trend in life science firms to outsource their research and development to contract research organizations (CROs) and consultants. The Kansas City metro is home to more than 90 CROs that serve U.S. and international companies, generating regional revenue in excess of \$1 billion per year.

Overall, employment in the life sciences has grown about twice as fast in KC as in the U.S. overall, with a percent change of 30% in KC, compared to 16% nationwide. Health IT and bioinformatics drive computer systems design (19,281 jobs) and computer programming services (9,181 jobs). Medical labs also contribute a large number of jobs (3,914) to life sciences. The five-year hiring demand trends show continued growth in these areas:

- Computer systems design services: 9,777 jobs projected.
- Custom computer programming services: 4,685 jobs projected.
- Medical laboratories: 2,186 jobs projected.

According to employers, KC lags in life science manufacturing because we need to build out production capacity. Major employers like CEVA and Bayer are manufacturing their products, but there is an opportunity to establish a “cluster approach” that aligns with the push to bring pharmaceutical manufacturing back to the U.S. This onshoring of pharmaceutical manufacturing is a result of COVID-19 disruption to the supply chain.

KEYS TO CAREER SUCCESS

The life sciences sector relies on intentional learning, or proactivity. This is about formulating a great question, then being curious enough to find the answer to the question, and creating solutions based on experience or findings.

Employers start to assess communication skills during the interview process. Whether a position is in health IT, research and diagnostics, or manufacturing, oral and written communication is critical to success.

One young professional reported having never worked alone on a research project. Every role she had held required collaboration with others to solve complex problems and produce results.

Essential Skills in Highest Demand:

Proactivity, Communication, Collaboration

07

Conclusion and Recommendations

Essential Skills are foundational for career readiness. Young professionals helped us uncover the gaps in preparation. Because these skills are valuable across sectors and durable over time, it is important that education institutions, out-of-school experience providers, and employers invest in the development of Essential Skills.

This study put the individual at the center. It is based on a belief that talent exists in all parts of our community and that potential must be recognized, maximized, and met with resources. Economies thrive through increased participation when everyone has equitable opportunities to advance. True inclusion means investing in potential everywhere it lives – in every classroom, every ZIP code, and every business plan.

Study partners met with hundreds of individuals in business and education through a number of stakeholder meetings. These meetings identified a few clear action steps:

What can you do about it?

Recommendations for Education Institutions & Out-of-School Experience Providers

1. EMBED THE ESSENTIAL SKILLS INSIDE COURSEWORK AND PROGRAM CURRICULUM.

Acquisition of these skills should not be limited to extracurricular activities or advanced coursework. They are important for all and, thus, should be equitably available to all. Suggested actions:

- **Engage learners in self-assessment.** Provide opportunities for learners to identify, practice, and reflect on formative experiences. Create developmental milestones for learners to gauge growth and proficiency.
- **Deepen connections between education and industry.** Increase interaction between educators, learners, and industry. One option is to offer client-connected projects across the curriculum, not just specialized or advanced coursework. Another suggestion is to create professional development opportunities, including teacher externships, to cultivate stronger education-industry ties and curricular alignment.
- **Measure and certify Essential Skills.** Explore opportunities for in-school and out-of-school providers to participate in assessment of competency-based proficiency and create ways for learners to digitally transport evidence across time and settings.
- **Incorporate open standards.** Allow for open standards that would compel learners to be responsible for time management. Get learners to think about how to start, what are the steps to finish, what questions to ask, whom to ask, and how to finish projects. One major area of misalignment between schools and industry is around task ambiguity.

2. MEASURE PROGRESS AT A METRO OR DISTRICT LEVEL.

This study was a snapshot of a moment in time, but how will we know whether learners are better prepared in the future? Suggestions:

- **Include multiple perspectives in assessment.** Consider adding one or more performance assessments, including industry feedback, mentor and teacher perspectives, self-assessment, and/or situational judgment tests.
- **Incorporate ongoing self-assessment.** Capture performance assessment data at developmental milestones to develop a richer picture to measure how learners are growing and how they feel about their growth.
- **Teach learners how to own and explain their skills.** The acquisition of Essential Skills needs to be currency for every learner to carry beyond graduation. Equip learners with the ability speak about their development in a skills context.
- **Co-create Essential Skills micro-credentials with industry.** Instead of measuring contact time with an instructor, emphasize skill mastery. Engage industry in the development of Essential Skills micro-credentials and verification of a learner's proficiency in a specific skill or set of skills.
- **Identify a transportable means for learners to document skills mastery.** Equip learners with digital evidence of learning. The digital evidence needs to be transportable across settings and accessible over time.
- **Translate how Essential Skills influence academic and life success.** Leverage in-school and out-of-school educators to help learners identify connections between life, academic experiences and Essential Skills development. Educators can use common language derived from the Essential Skills framework to help translate experiences.

Recommendations for Employers

1. COMMIT TO CURRICULUM AND COMMUNITY CONNECTIONS.

- Co-create Essential Skills micro-credentials with educators.
- Partner to establish systems of measuring progress at the metro and district levels.

2. PROVIDE WORK-BASED EXPERIENCES FOR LEARNERS AND EDUCATORS.

- Enable client-connected projects, internships and teacher externships.

3. CREATE DEVELOPMENTAL PATHWAYS IN HIRING, PROMOTION AND RETENTION.

- Prioritize an Essential Skills micro-credential in hiring.
- Invest in ongoing Essential Skills development.

Agilities Illustrate How Essential Skills Are Used in the Workplace

The DeBruce Foundation has identified 10 Agilities, or clusters of work activities, present in all occupations. Different jobs and careers utilize these Agilities in varying amounts. While there is some overlap between Essential Skills and Agilities, these two categorizations capture different aspects of employment. Because Agilities are based on work activities, they can help illustrate how some Essential Skills are manifested in the workplace.

Agilities reflect the entire range of work tasks across the economy, rather than a hierarchy of in-demand skills. Agilities fundamentally reflect activities taking place on the job, whereas some Essential Skills reflect how a task is approached, not the task itself. Both Agilities and Essential Skills contribute to a broader understanding of what is needed to build and support a prepared workforce.

THE 10 AGILITIES OF WORK ACROSS OCCUPATIONS

 *Developing Others*

 *Inspecting*

 *Managing*

 *Organizing*

 *Serving & Caring*

 *Innovating*

 *Judging & Estimating*

 *Operating Objects*

 *Selling & Communicating*

 *Working with Information*

Assessing the current state of their Agilities helps people look for occupations that value skills where they feel particularly prepared, in areas where they can excel and enjoy their work. Conversely, knowing the Agilities valued in a specific occupation provides vital insight into the skills needed to develop to succeed in that field. Highlighting the variety of industry sectors that value a specific Agility may expand the range of occupations people are willing to consider.

Like Essential Skills, Agilities can be building blocks to career success. One of the ways a person can understand how to put Essential Skills to use is by incorporating them into a larger career development model. The DeBruce Foundation embeds the Agilities into the Agility Advantage, gained by nurturing three related and combined processes:

- **Growth Mindset:** The ability to believe you have value, can learn, and can take action on choices.
- **Skills Mastery:** The acquisition of professional and technical skills, including digital tools.
- **Market Knowledge:** The understanding of industry demand, including access to robust relational networks.

Developing Essential Skills is part of the importance of skills mastery in building Agility Advantage. When workers combine a high level of skills with a can-do mindset and market knowledge, they have the agility to identify and take advantage of career opportunities.

AGILITY ADVANTAGE MODEL OF CAREER DEVELOPMENT



The intersection of each component elevates the benefit of the Agility Advantage to individuals. This enables them to take advantage of more opportunities (flexible) while feeling more satisfied in their preparation (fulfilled). If they obtain the skills the marketplace really needs, they are likely to find work faster.

08

Appendix

Study Overview

Focus groups: May 2019 – June 2019

Survey: July 2019 – February 2020

Survey Support and Acknowledgments

SURVEY DISSEMINATION PARTNERS

TeamKC	UCM
BioNexus KC	KC Scholars
Urban League of KC	KC Social Innovation Center
MARC	MCC
Young Latino Professionals of KC	KC STEM Alliance
UMKC	Teach for America KC
KC Startup Foundation	KU
Hispanic Development Fund	

EMPLOYERS WITH AT LEAST 3 PARTICIPANTS

Honeywell	Gould Evans
US Engineering	Cerner
Burns & McDonnell	Holland 1916, Inc.
Children’s Mercy Hospitals & Clinics	Super Dispatch
HNTB	Populous
SS&C	Garver
H&R Block	Walmart
KC Area Development Council	UMKC

Four Core Survey Questions

1. How important are these essential skills to your current job?
2. Thinking about these essential skills, how prepared were you when you started your job?
3. What had the biggest impact on your essential skills in high school?
4. What had the biggest impact on your essential skills in college?

Biggest Impact Questions

Survey participants were asked to select up to three experiences for each category.

HIGH SCHOOL

- Standard coursework (math, English, science classes other)
- Elective coursework (Project Lead The Way (PLTW), journalism, band)
- Advanced classes (AP, IB, and honors)
- Extracurricular activities (sports, student council, clubs, cheerleading)
- Leadership roles in extracurricular activities
- Summer camps (space camp, engineering summer camp, drama camp)
- Outside job or internships
- Outside mentorship
- Other

COLLEGE

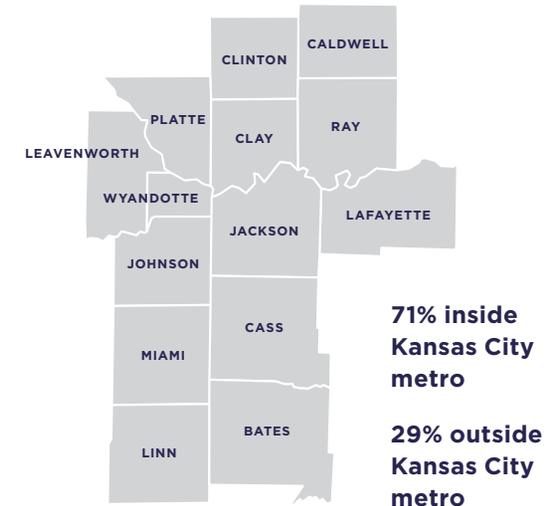
- Standard coursework (required for degree)
- Elective coursework (not required for degree)
- Study abroad
- Extracurricular activities (student council, clubs, athletics, Greek Life, other)
- Leadership roles in extracurricular activities
- Additional research opportunities (thesis, dissertation, research assistant)
- Outside work during school year (tutoring, barista, bank teller, other)
- Internship opportunities (FT and PT)
- Outside mentor (close relationship)
- Volunteering in community
- Guest lecturers / speakers / seminars
- Other

Survey Respondents (361 Total)

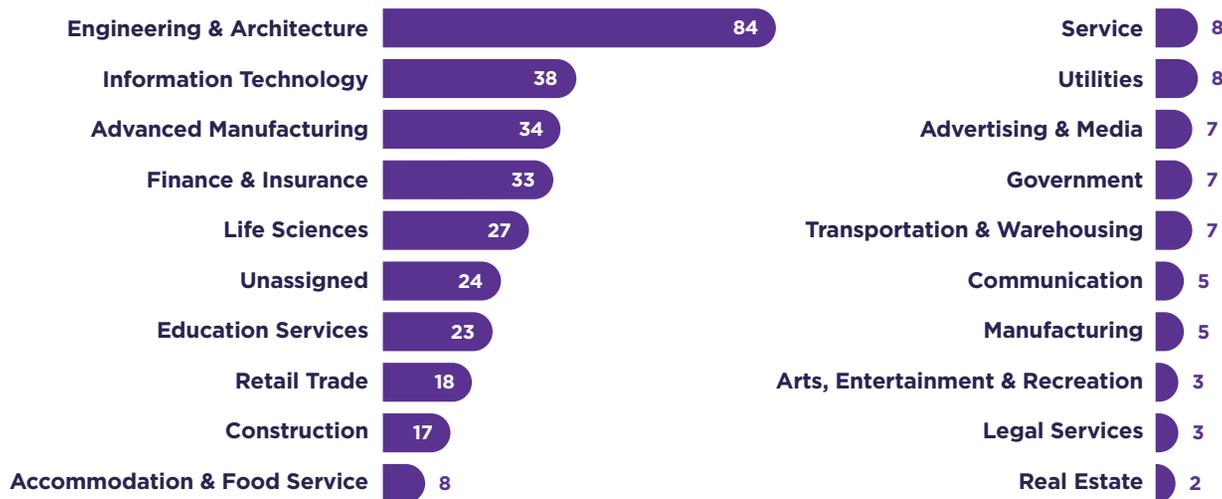
DEMOGRAPHICS

	KC METRO RESPONDENTS	KC METRO POPULATION	NATIONAL POPULATION
RESPONDENT RACE/ETHNICITY			
White or Caucasian	62.4%	73.8%	60.4%
Hispanic or Latinx	13.3%	9.1%	18.3%
Black or African American	10.2%	13.2%	13.4%
Native American/American Indian	4.3%	0.5%	1.3%
Asian or Native Hawaiian / Pacific Islander	8.6%	3.4%	6.1%
Other	1.6%	N/A	N/A
RESPONDENT GENDER			
Female	49.4%	50.9%	50.8%
Male	50.6%	49.1%	49.2%

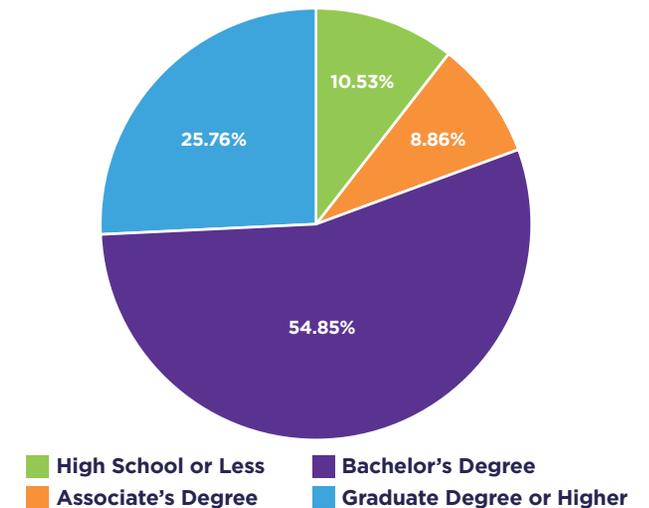
*Kansas City Metropolitan Statistical Area, <https://www.census.gov/quickfacts/fact/table/US/PST045219>



INDUSTRY SECTOR

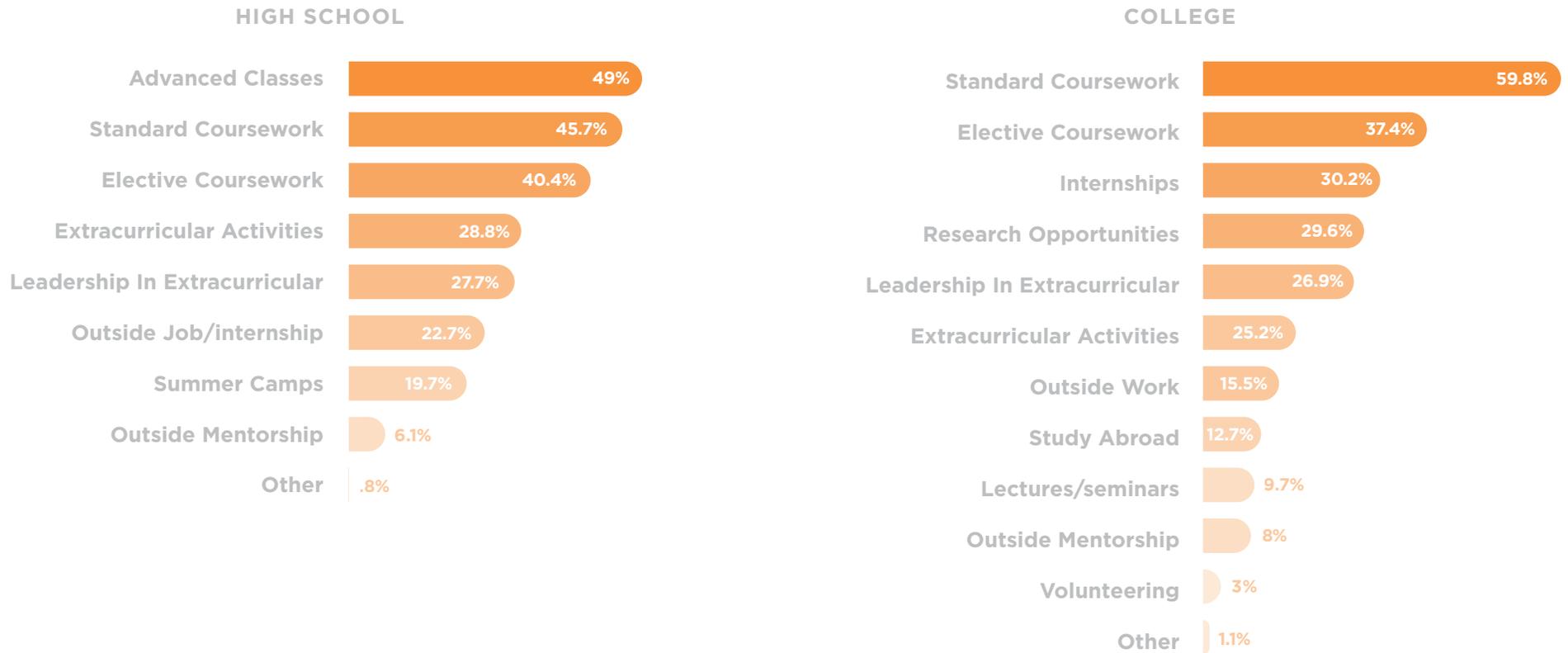


HIGHEST DEGREE ATTAINED



Study Findings: Critical Thinking

WHAT HAD THE BIGGEST IMPACT ON YOUR CRITICAL THINKING SKILLS?

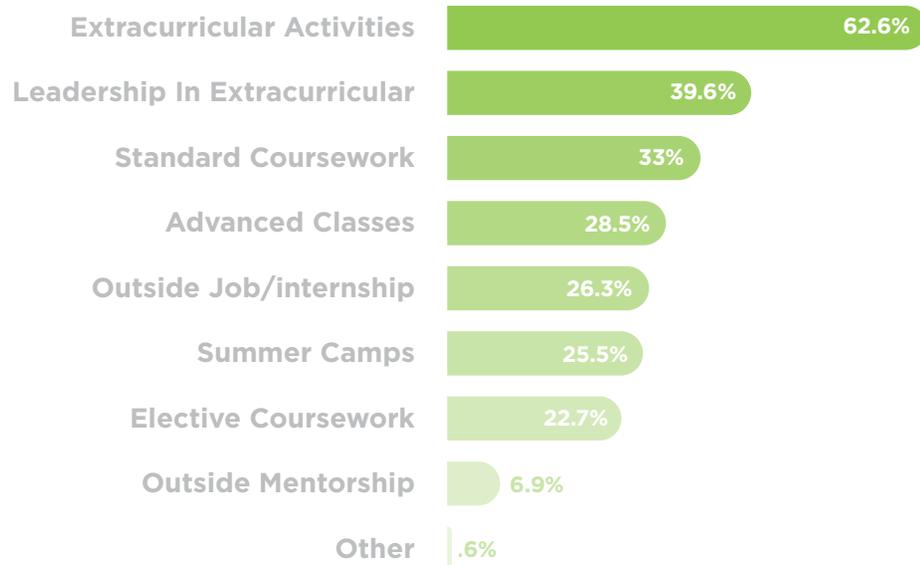


Other: Reading, podcasts, work study, in-depth/graduate level coursework, researching topics of interest independently

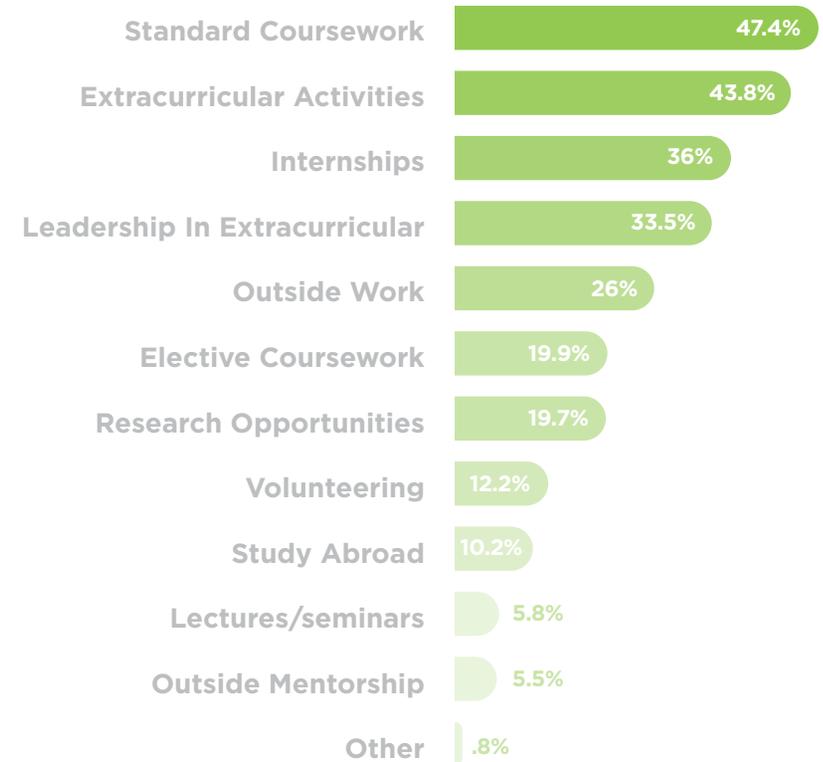
Study Findings: Collaboration

WHAT HAD THE BIGGEST IMPACT ON YOUR COLLABORATION SKILLS?

HIGH SCHOOL



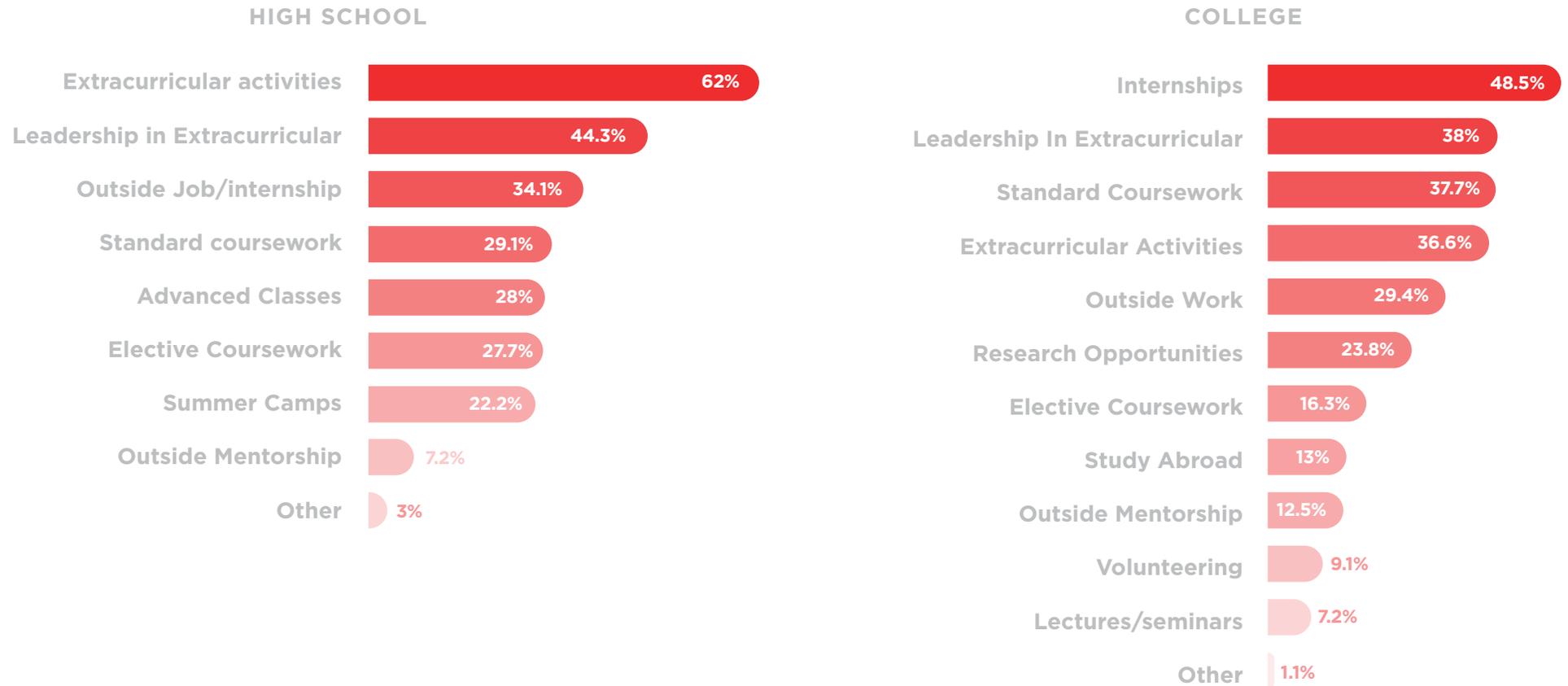
COLLEGE



Other: Church/youth group, role playing games, study groups, courses with teamwork requirements, Greek life

Study Findings: Communication

WHAT HAD THE BIGGEST IMPACT ON YOUR COMMUNICATION SKILLS?

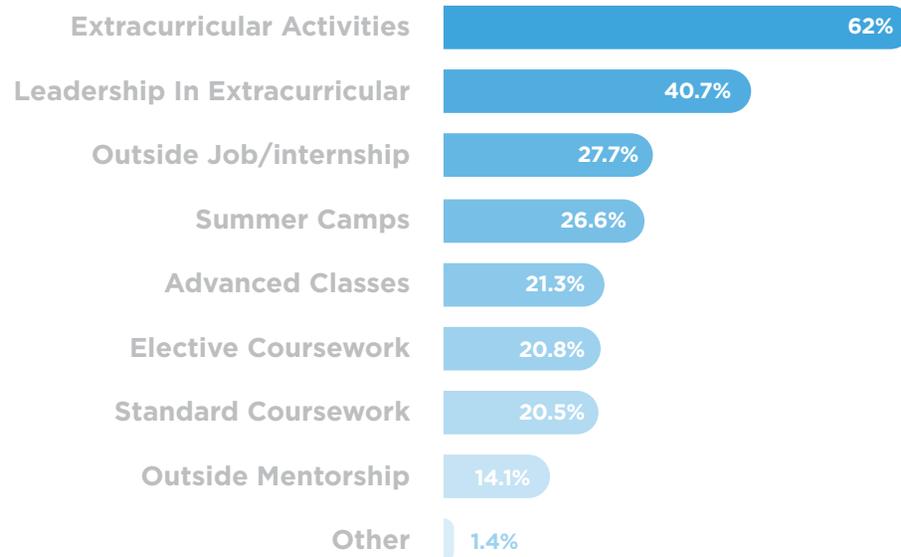


Other: Church/youth group, parents, speech/debate classes, required presentations and team collaboration, Greek life, student relationships

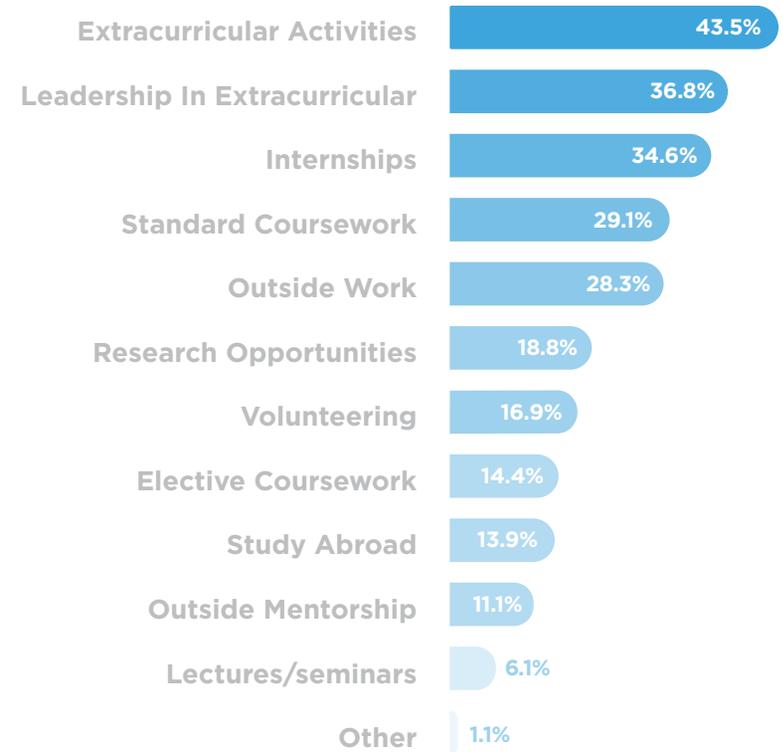
Study Findings: Interpersonal Skills

WHAT HAD THE BIGGEST IMPACT ON YOUR INTERPERSONAL SKILLS?

HIGH SCHOOL



COLLEGE

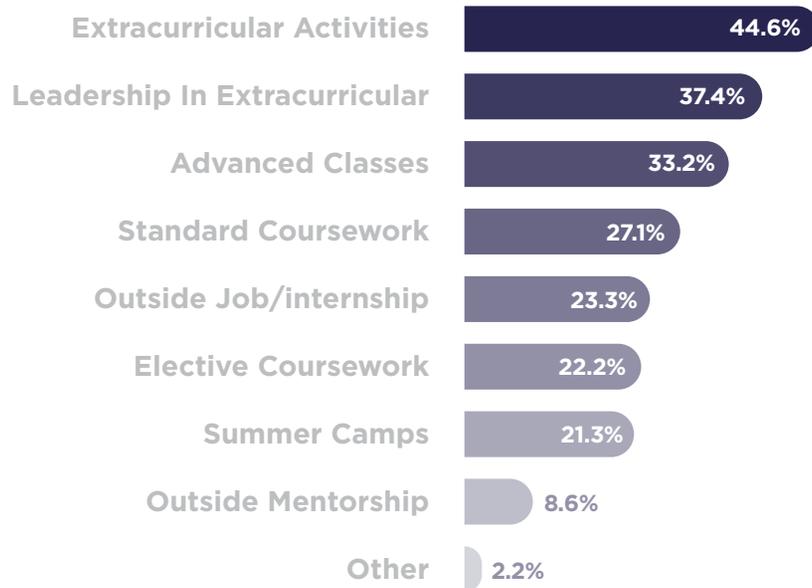


Other: Church interactions, general socialization, Greek life

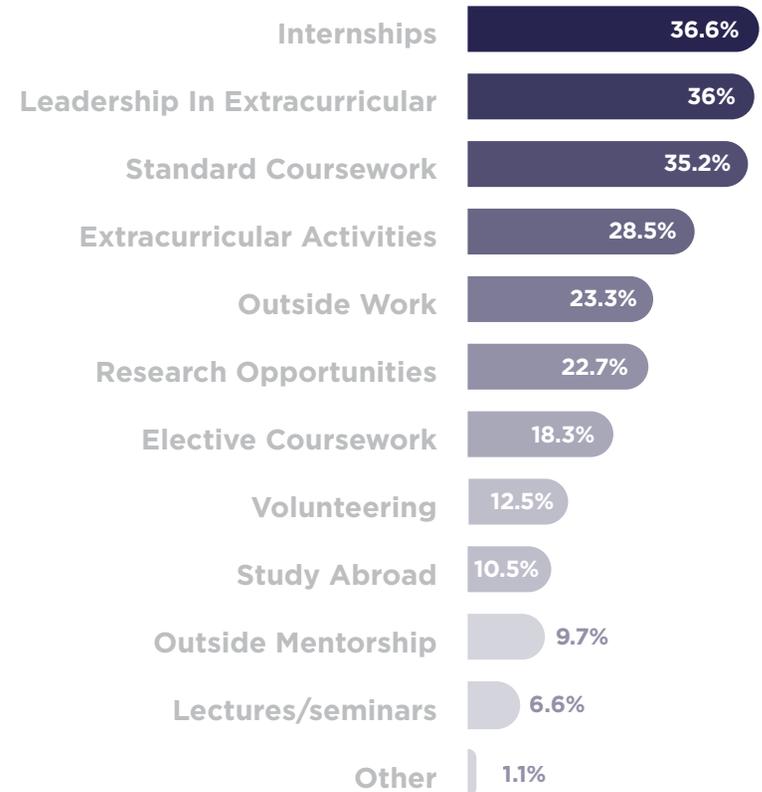
Study Findings: Executive Function

WHAT HAD THE BIGGEST IMPACT ON YOUR EXECUTIVE FUNCTION SKILLS?

HIGH SCHOOL



COLLEGE

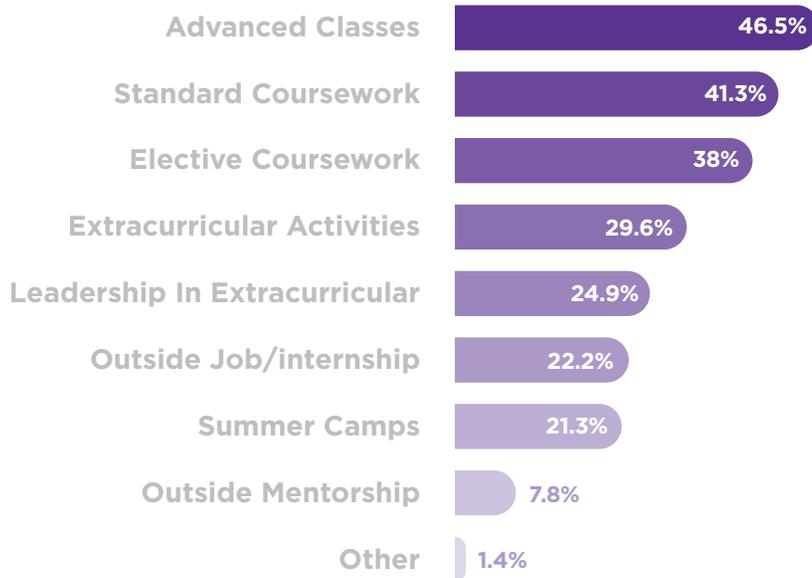


Other: Church/youth group, family, balancing activities and school, work, living independently

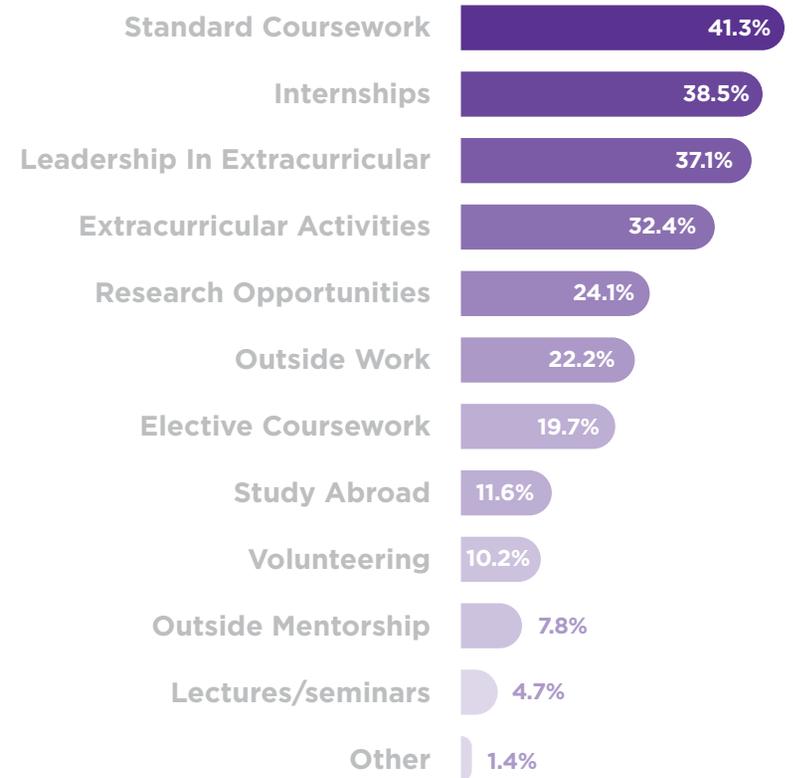
Study Findings: Proactivity

WHAT HAD THE BIGGEST IMPACT ON YOUR PROACTIVY SKILLS?

HIGH SCHOOL



COLLEGE



Other: Church/youth group, family, personal interests, study groups, balancing work and school, case competitions



For questions on research and methodology, email Dr. Karin Chang,
Urban Education Research Center, UMKC, at k.chang@umkc.edu.

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