

# **Virginia's Workplace Readiness Skills: Framework for the Future**

Report written by Kathryn Piper Crespin

Research Team

Kathryn Piper Crespin

Stephen Holzman

Amy Muldoon

Shonel Sen

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## About the Demographics Research Group

The Demographics Research Group of the Weldon Cooper Center for Public Service at the University of Virginia produces the official annual population estimates for Virginia and its localities; conducts practical and policy-oriented analysis of census and demographic data under contract; and communicates rigorous research and its policy implications to clients including state and local governments, employers, nonprofit organizations, and the general public, through meaningful, intuitive publications, and presentations.

## About the Research Team

Kathryn Piper Crespin is a research and policy analyst for the Demographics Research Group. She enjoys writing about demography, and her training and interests include population forecasting as well as analysis, mapping, and visualization of population data. Prior to joining the Demographics Research Group, she worked as an epidemiologist for the Maternal and Child Health Bureau of the Utah Department of Health. Kathryn earned her bachelor's in English from Georgetown University and her master's in demography from Florida State University.

Stephen Holzman is a research and policy analyst for the Demographics Research Group. His research interests include population forecasting, fertility trends, and interactive data visualization. He favors a multidisciplinary approach to problem solving and is an open science advocate. Stephen received his bachelor's in economics and master's in demography from Florida State University, where he also worked for the College of Social Sciences information technology department.

Amy Muldoon is a project manager for the Demographics Research Group. She has experience designing websites, building and maintaining databases, and managing various college programs and projects. She earned her bachelor's in professional writing from Miami University (Ohio) and her master's in English from the University of Toledo.

Shonel Sen is a research and policy analyst for the Demographics Research Group. She has a strong background in regional economics, population studies, and public policy with training in theoretical modeling and quantitative analysis. Her interdisciplinary research interests bring together elements from the fields of economic development, components of population change, behavioral incentives, and environmental sustainability. Shonel received her bachelor's and master's in economics from India and a dual Ph.D. in applied economics and demography at Pennsylvania State University.

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If you have any questions about this report or would like a copy, please contact Kathryn Piper Crespin at *kathryn.crespin@virginia.edu* or 434-982-5582.

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## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	1
What are Virginia’s Workplace Readiness Skills and Why Are They Important? .....	2
Keeping Virginia’s Workplace Readiness Skills Up-To-Date .....	2
Research Process and Findings .....	4
Literature Review .....	4
Framework Comparison .....	6
Survey of Virginia Employers and Workforce Professionals .....	7
Research Summary .....	17
Framework Recommendations .....	18
Draft Proposal for Revised Workplace Readiness Skills for the Commonwealth .....	20
Study Limitations .....	21
Next Steps .....	22
Appendix 1 – Detailed Skill Framework Recommendations .....	23
Appendix 2 – Survey Methodology .....	29
Survey Development .....	29
Contact List Development .....	30
Survey Administration .....	31
Survey Analysis .....	32
Appendix 3 – Survey Data .....	33
REFERENCES .....	53
ENDNOTES .....	62

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## Executive Summary

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The Virginia Department of Education (VDOE), Office of Career, Technical, and Adult Education, in collaboration with several organizations, has been sponsoring research on workplace readiness skills in Virginia for over 30 years.

The purpose of this research project was to evaluate Virginia's current set of 21 Workplace Readiness Skills—adopted by the Virginia Board of Education in 2010 for inclusion in the curriculum of every state Career and Technical Education (CTE) course—to be certain they are up-to-date and aligned with the modern-day needs of employers.

The research consisted of three components:

1. Literature Review

- Conducted a comprehensive review of more than 70 reports, publications, and websites
- Identified six key, interrelated trends that will continue to have a strong influence on the changing needs and skill demands of the workplace:
  - Information Revolution
  - Rapid and Continuous Innovation
  - Automation
  - Organizational Restructuring
  - Globalization
  - Time- and Power-Shifting

2. Framework Comparison

- Catalogued, indexed, and compared more than 25 national and state workplace readiness skill frameworks
- Concluded that Virginia's current skill framework generally serves its function well in terms of the number, type, specificity, and organization of its skills

3. Input from Virginia Employers and Workforce Professionals

- Collected feedback about workplace readiness skills from nearly 400 Virginia employers and workforce professionals by developing and administering an online survey
- Found that Virginia's selected set of workplace readiness skills continues to be viewed by state employers and professionals as being important and relevant to current workplace demands

Based on findings from all three research components as well as input from Virginia's CTE Advisory Committee, our recommended revisions to Virginia's Workplace Readiness Skills represent more of a refinement of the current skill set rather than a major revision, including:

- Addition of two new skills to the framework—*Initiative and Self-Direction* and *Information Literacy*
  - Merging of the *Telecommunications* and *Information Technology* skills
  - Slight modification of the skill “domain” headings
  - Wording changes to skill titles and definitions based on detailed and systematic review of other state and national frameworks
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## What are Virginia's Workplace Readiness Skills and Why Are They Important?

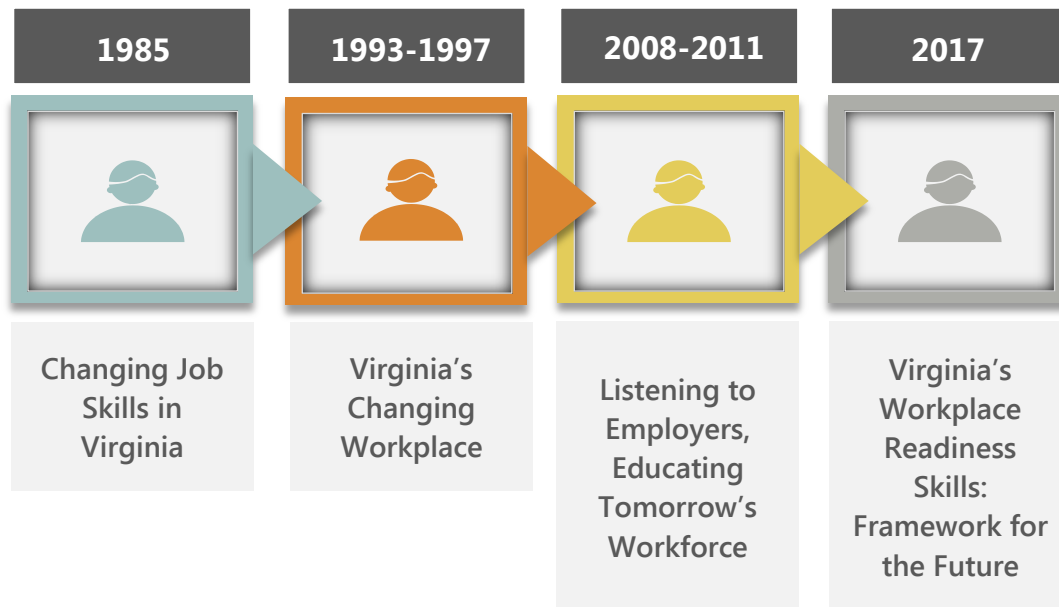
Virginia's Workplace Readiness Skills are a set of personal qualities, people skills, and professional abilities identified by Virginia employers and educators as essential for employee success in the workplace. Developed and updated over the past 20 years to adapt to changing workplace trends and needs, these skills are incorporated into the curriculum of every state Career and Technical Education (CTE) course. They not only give students of diverse backgrounds the opportunity to develop the personal resources they need to get and keep good jobs, but they also help employers by providing them with entry-level workers who are well-prepared to deal with a variety of workplace challenges.

In addition to supporting both student and employer needs, Virginia's Workplace Readiness Skills also benefit industries, regions, and the state as a whole. Regional industry specialization often occurs as a result of the competitive edge gained by geographic clustering near shared and supportive resources. One such resource that attracts employers to an area is a well-trained workforce. Regions and states can thus contribute to ongoing investment in their economies by periodically assessing what workplace skills are valued by the employers that drive their economies and ensuring that their workers are equipped with these skills.

### Keeping Virginia's Workplace Readiness Skills Up-To-Date

The VDOE's Office of Career, Technical, and Adult Education, in partnership with several organizations, has been sponsoring research on workplace readiness skills in Virginia for more than 30 years. In each decade since the 1980s, hundreds of employers throughout the Commonwealth have been interviewed or surveyed to determine the most essential workplace skills for entry-level workers. Initial research conducted in the mid-1980s revealed—perhaps unexpectedly—that employers believed workplace readiness skills were at least as important as traditional academic and technical skills in promoting workplace success. Another round of research conducted from 1993 to 1997 led to the creation of Virginia's first set of 13 workplace readiness skills, which were incorporated into every Virginia CTE course in 1998. Based on research performed from 2008 to 2011, the original list of 13 skills was updated and expanded to include 21 skills, and additional curriculum and assessment resources were developed. Students are now able to demonstrate their familiarity with the 21 skills and earn graduation credit and a digital badge by opting to take the *Workplace Readiness Skills for the Commonwealth Assessment Examination*.

## Timeline of Virginia's Workplace Readiness Skills Research



In 2017, the VDOE's Office of Career, Technical, and Adult Education once again requested that the Demographics Research Group at the University of Virginia Weldon Cooper Center for Public Service provide assistance in identifying and updating the workplace readiness skills that are of most value to the state's many employers. The research described in this report continues Virginia's long history of taking a research-based approach to these efforts. The current round of research has consisted of three stages: 1) reviewing relevant literature to identify and understand changing workplace trends; 2) analyzing numerous state and national workplace readiness skill frameworks to evaluate how Virginia's framework compares; and 3) conducting a survey of Virginia employers and workforce professionals to get their feedback about which workplace readiness skills are most critical for entry-level workers to have, now and in the future.

The findings from all three stages of research have informed the formulation of the Cooper Center's recommended updates to Virginia's current set of workplace readiness skills. These recommended updates will be provided to VDOE's Office of Career, Technical, and Adult Education with the understanding that the skills may need to be reevaluated and refined even further to adequately address curriculum and assessment considerations that were not part of the Cooper Center's research.

## Research Process and Findings

### LITERATURE REVIEW

#### Methods

As a first step, Cooper Center researchers conducted a review of more than 70 reports, publications, websites, and other sources of information related to workplace trends and readiness skills. Each source was first evaluated for its relevance to the research topic and then classified as providing one of three types of information:

- 1) Background information about workplace readiness skills in general – These resources were reviewed by the researchers to enhance their knowledge about the topic and to inform their research approach.
- 2) Analysis of workplace trends – These resources helped researchers identify which workplace trends will continue to be the most influential in determining what skills are most desirable among workers.
- 3) Details about specific skills or skill frameworks – As they were encountered in the literature or identified in other frameworks, workplace readiness skills were catalogued and indexed to one or more of Virginia's 21 existing skills using a research tool designed for that purpose. Where relevant, skills that were missing from Virginia's current framework were tagged for possible inclusion.

#### Findings

Several key, interrelated trends identified in the literature review emerged as having especially significant influence on the changing needs and skill demands of the workplace:

- Information Revolution – Major technological advancements in the ways that we process and communicate information have led to a vast proliferation of data that now permeates every aspect of our lives—both personal and professional. The increased (and continuously increasing) speed with which this information can be processed has enabled an even more rapid pace of technological innovation across industries and has served as a driver of just about every other workplace trend named in this report. Modern-day workers must be willing and able to constantly update their information literacy and technology skills in order to know how to evaluate and apply this abundance of information effectively in the course of performing their job duties.
- Automation – Although the increased automation of more routine workplace tasks has displaced many workers, it has also increased the importance and weight within our economy of workers who possess the more complex, non-routine reasoning and communication skills that are not possible or cost-effective to automate.<sup>1</sup> In order to successfully navigate this trend, employees must acquire the necessary education and skills to perform work that either accompanies and supports automation or is less prone to being



overtaken by it. Additionally, all workers will need to acquire the skills that enable them to adapt to rapidly changing workplace needs and processes.

- Globalization – The explosive growth of technology has created a more interdependent and competitive global marketplace. Geographic distance has become less relevant in the creation of products and in the performance of jobs, which have increasingly become viewed as bundles of work tasks that can be separated, completed in different parts of the world, and then re-bundled into a final product.<sup>ii</sup> Greater access to technology around the world has also increased competition among companies and nations and forced them to be more innovative and nimble in response. To be successful in the 21st century, workers must cultivate their ability to work collaboratively with diverse groups of people in constantly changing work environments.
- Rapid and Continuous Innovation – The need to be innovative in order to stay one step ahead of the competition is not just a result of technological advancement and globalization but also the result of increased consumer demand for products and services that are customized or have new kinds of value added in terms of quality, convenience, and variety.<sup>iii</sup> To remain competitive, providers of these products and services must be creative and engage in rapid and continuous cycles of innovation to implement new ideas, techniques, and methods. Beyond being creative and innovative themselves—both in terms of initiating new ideas and solving problems in novel ways—workers must engage in “big picture” thinking and approach work with the needs of the end user in mind. They must also be willing to persevere when new ideas don’t work out and remain flexible and adaptable in the face of constantly changing work conditions.<sup>iv</sup>
- Organizational Restructuring – The need to be nimble and effective in responding to a more rapid pace of technological change and global competition has forced companies to re-evaluate the structure of their organizations. Workplaces today are flatter and more flexible than in the past, involving more “horizontal” and less “vertical” collaboration among team members. This collaboration is often more task- and project-oriented than in the past and requires that employees engage strong interpersonal skills in order to work successfully with diverse and changing sets of teams. Employees are also increasingly called upon to manage their own work, requiring that they be self-sufficient, accountable for their job performance, and have excellent critical-thinking and problem-solving skills.
- Time- and Power-Shifting<sup>v</sup> – Major advancements in communication technology have provided workers with unprecedented access to information. This has caused both a time- and power-shift in the way that business is conducted in the 21st century. Workers now have at their disposal all kinds of communication and information devices that enable them to conduct both personal and job-related activities at any time, softening the boundary between work and personal life. This increased access to information has also given employees more power to demand transparency from their employers. With this increased power, however, also comes greater responsibility. Workers today must not only shoulder more of the planning and financial burdens associated with job training, health care, and retirement, but

they must also be more skilled at navigating the increasingly complex nature of these important aspects of life.

## FRAMEWORK COMPARISON

### Methods

Cooper Center analysts reviewed at least 25 national and state workplace readiness skill frameworks to assess how Virginia's set of skills compares in terms of composition and length. Individual skills contained in other frameworks were catalogued and indexed to one or more of the 21 existing workplace readiness skills in Virginia's framework using a research tool designed for that purpose. Skills that did not have a corresponding match in Virginia's framework were also classified as possibilities to consider for inclusion in Virginia's list. In conjunction with the literature review and survey of workforce professionals throughout the state, the cataloging of skill titles and definitions as part of the framework comparison process was a key component of the Cooper Center research team's formulation of recommended updates to Virginia's current set of skills.

### Findings

Although there are significant similarities among the various skill frameworks, each is unique in some way. Frameworks differ in the number, type, specificity, and organization of included skills—all interrelated factors that have an influence in determining the overall nature of each framework. Those with a smaller number of skills overall, for example, often either define the skills in a broad way in order to be more comprehensive or include subskills as a way to provide more specificity. Likewise, those frameworks, such as O\*NET, that not only define the individual elements of the framework with greater specificity but also incorporate a greater variety of element types (such as worker interests and styles) will, by necessity, consist of a greater number of elements overall.

In its comparative review of Virginia's skill framework, the research team concluded that, generally speaking, **Virginia's current set of workplace readiness skills strikes a good balance in terms of the number, type, specificity, and organization of its skills.** The recommended updates to the framework represent more a refinement of the current skill set rather than a major revision. That being said, it is important to point out that the framework evaluation did not incorporate factors related to curriculum development or assessment, so additional framework analysis addressing these considerations may need to be performed.

## SURVEY OF VIRGINIA EMPLOYERS AND WORKFORCE PROFESSIONALS

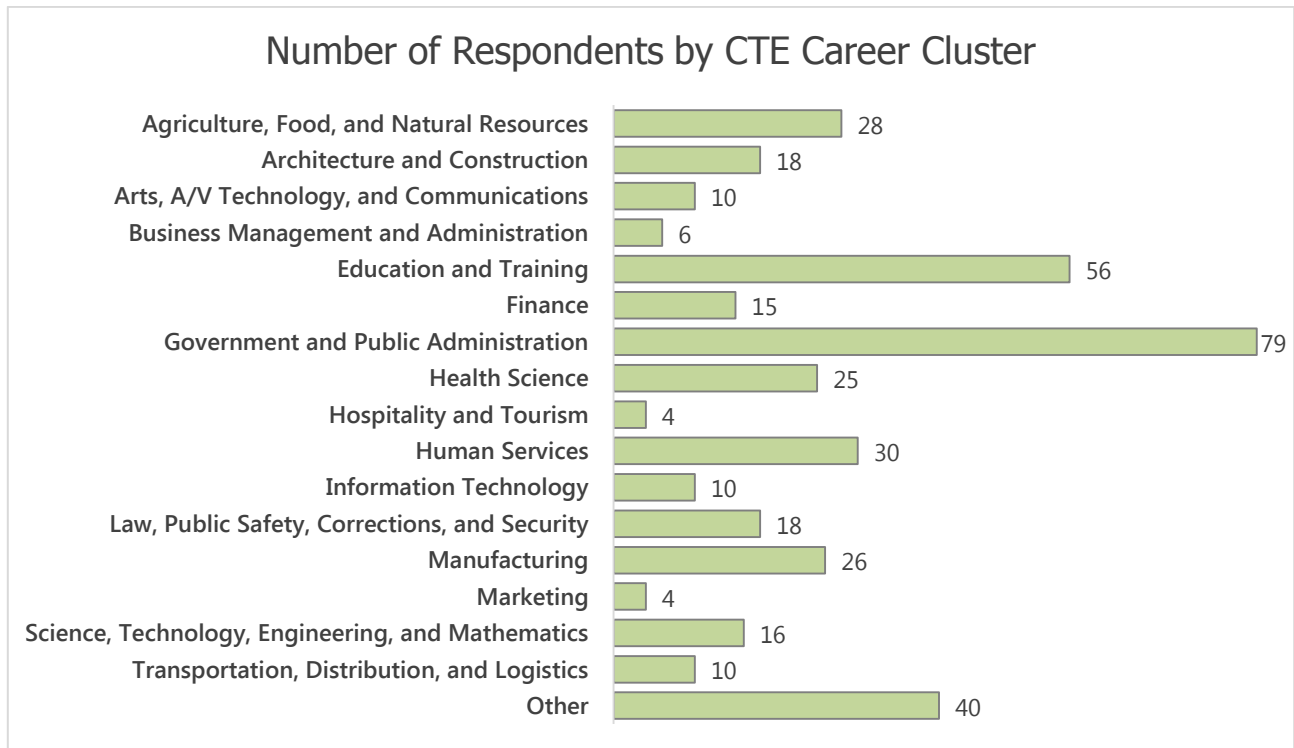
### Methods (see Appendix 2 for a more detailed explanation)

From June 19 to August 9, 2017, nearly 2,400 Virginia employers and workforce professionals were invited to share their opinions about Virginia's Workplace Readiness Skills by participating in a brief online survey. Participants were asked to rate the importance of workplace readiness skills for entry-level workers both now and in the future, to indicate what workplace readiness skills they believe are most lacking among entry-level employees, to identify what skills might be missing from Virginia's current skill framework, and to share any additional comments or thoughts they may have about workplace readiness skills. Nearly 400 invitees responded and completed the required portion of the survey. Along with findings from the literature review and framework comparisons, the survey results have been a key factor in the formulation of our research team's recommended updates to the current set of workplace readiness skills.

### Findings

Figure 1 shows the number of survey respondents per CTE Career Cluster. A total of 395 survey participants answered this required survey question. The *Government & Public Administration* cluster had the greatest amount of representation in the 2017 survey (79), with one in five respondents (20 percent) indicating they worked for the government at some level. The *Education & Training* cluster had the second-highest number of respondents (56), representing about 14 percent of the total. One in ten respondents (10 percent) believed their company or organization would be classified in a way other than by one of the 16 individual CTE career clusters. Additional career clusters with greater than 5 percent representation in the survey data include *Human Services* (8 percent); *Agriculture, Food, & Natural Resources* (7 percent); *Manufacturing* (7 percent); and *Health Science* (6 percent).

Figure 1. Number of respondents by CTE career cluster (n=395)



Survey participants were asked to rate the current importance of each workplace readiness skill for entry-level workers in their respective organizations. Table 1 shows, by skill, the percentage of respondents who selected each importance rating. Respondents had the option of selecting “N/A” if the skill was not applicable within the context of their workplace, and all respondents were required to answer this question.

Table 1. Current Skill Importance

How important is each workplace readiness skill for entry-level workers in your organization?							
Skill	Not at all important	Slightly important	Moderately important	Very important	Extremely important	Not Applicable	TOTAL (n)
Conflict Resolution	0%	5%	14%	43%	38%	1%	395
Creativity and Innovation	0%	5%	25%	41%	28%	0%	395
Critical Thinking and Problem Solving	0%	1%	7%	34%	57%	0%	395
Customer Service	1%	2%	7%	24%	65%	2%	395
Health and Safety	1%	4%	18%	31%	44%	3%	395
Information Literacy	1%	3%	12%	39%	46%	1%	395
Information Technology	1%	4%	15%	41%	39%	0%	395
Initiative and Self-Direction	0%	2%	10%	39%	49%	0%	395
Integrity	0%	1%	3%	19%	77%	0%	395
Internet Use and Security	2%	4%	15%	32%	46%	1%	395
Job Acquisition and Advancement	4%	11%	34%	32%	15%	3%	395
Job-Specific Technologies	0%	5%	18%	43%	34%	1%	395
Lifelong Learning	1%	3%	16%	39%	41%	0%	395
Mathematics	2%	13%	33%	33%	18%	1%	395
Organizations, Systems, and Climates	0%	5%	22%	43%	30%	1%	395
Positive Work Ethic	0%	0%	3%	23%	74%	0%	395
Reading and Writing	0%	2%	9%	33%	56%	0%	395
Respect for Diversity	1%	2%	11%	27%	58%	1%	395
Self-Representation	0%	3%	14%	37%	46%	0%	395
Speaking and Listening	0%	1%	3%	26%	70%	0%	395
Teamwork	0%	1%	6%	30%	64%	0%	395
Telecommunications	2%	7%	23%	41%	26%	1%	395
Time, Task, and Resource Management	0%	2%	9%	38%	51%	0%	395

Seven skills had both the majority of respondents rate them as “extremely important” and no respondents rate them as “not at all important”: *Initiative and Self-Direction; Integrity; Positive Work Ethic; Reading and Writing; Speaking and Listening; Teamwork; and Time, Task, and Resource Management.*

The list below organizes the skills according to which current importance rating was selected by the greatest percentage of respondents. All but two skills were rated by most respondents as either “very important” or “extremely important,” and no skills were rated by a majority of respondents as “slightly important” or “not at all important”—**a sign that skills featured in Virginia’s existing framework continue to be viewed by employers and professionals as being important and relevant to current workplace demands.**

**Extremely important**

- Critical Thinking and Problem Solving
- Customer Service
- Health and Safety
- Information Literacy
- Initiative and Self-Direction
- Integrity
- Internet Use and Security
- Lifelong Learning
- Positive Work Ethic
- Reading and Writing
- Respect for Diversity
- Self-Representation
- Speaking and Listening
- Teamwork
- Time, Task, and Resource Management

**Very important**

- Conflict Resolution
- Creativity and Innovation
- Information Technology
- Job-Specific Technologies
- Organizations, Systems, and Climates
- Telecommunications

**Moderately important**

- Job Acquisition and Advancement
- Mathematics

Table 2 shows the skills in decreasing order of current importance based on a weighted scale of 1 to 5, where “1” means the skill is “not at all important” and “5” means the skill is “extremely important.” The skills in Table 2 are color-coded according to natural breaks in the data.

Table 2. Workplace Readiness Skills in Order of Current Importance

Workplace Readiness Skills in Order of Current Importance	
Skill	Metric
Integrity	4.73
Positive Work Ethic	4.71
Speaking and Listening	4.66
Teamwork	4.57
Customer Service	4.53
Critical Thinking and Problem Solving	4.48
Reading and Writing	4.44
Respect for Diversity	4.40
Time, Task, and Resource Management	4.39
Initiative and Self-Direction	4.36
Information Literacy	4.27
Self-Representation	4.26
Internet Use and Security	4.18
Health and Safety	4.16
Lifelong Learning	4.16
Conflict Resolution	4.13
Information Technology	4.12
Job-Specific Technologies	4.07
Organizations, Systems, and Climates	3.97
Creativity and Innovation	3.93
Telecommunications	3.84
Mathematics	3.53
Job Acquisition and Advancement	3.45

\*Color-coded according to natural breaks in the data. Median = 4.26 Average = 4.23

As can be seen in Table 2, the top five most important skills—all with a weighted scale rating greater than 4.50—are *Integrity* (4.73); *Positive Work Ethic* (4.71); *Speaking and Listening* (4.66); *Teamwork* (4.57); and *Customer Service* (4.53). The five skills considered least important using this metric—all with a weighted scale rating less than 4.00—are *Organizations, Systems, and Climates* (3.97); *Creativity and Innovation* (3.93); *Telecommunications* (3.84); *Mathematics* (3.53); and *Job Acquisition and Advancement* (3.45).

*Advancement* (3.45). Ultimately, all skills scored between a “3” and a “5” using the weighted scale metric, which indicates that **no skills stand out in Virginia’s framework as being unimportant.**

Survey participants were also asked to rate how important each of the workplace readiness skills will be for entry-level workers in about five years from now. Table 3 shows, by skill, the percentage of respondents who selected each importance rating. Respondents were able to select “not sure” if they were unsure about a skill’s future importance in the workplace.

Table 3. Future Skill Importance

In about five years from now, how important will each workplace readiness skill be for entry-level workers in your organization?					
Skill	Less important	About the same importance	More important	Not sure	TOTAL (n)
Conflict Resolution	1%	51%	47%	1%	370
Creativity and Innovation	1%	37%	60%	1%	369
Critical Thinking and Problem Solving	1%	29%	70%	1%	369
Customer Service	1%	44%	54%	1%	369
Health and Safety	3%	65%	31%	2%	370
Information Literacy	1%	35%	63%	1%	365
Information Technology	2%	28%	70%	1%	369
Initiative and Self-Direction	1%	34%	64%	1%	368
Integrity	1%	52%	47%	1%	369
Internet Use and Security	2%	36%	60%	1%	368
Job Acquisition and Advancement	4%	68%	23%	4%	368
Job-Specific Technologies	2%	42%	55%	1%	369
Lifelong Learning	1%	41%	58%	1%	370
Mathematics	5%	65%	29%	2%	370
Organizations, Systems, and Climates	2%	50%	46%	2%	368
Positive Work Ethic	1%	48%	51%	1%	368
Reading and Writing	2%	52%	46%	0%	369
Respect for Diversity	1%	38%	60%	1%	367
Self-Representation	8%	64%	27%	1%	370
Speaking and Listening	0%	46%	54%	1%	369
Teamwork	1%	41%	58%	1%	369
Telecommunications	2%	44%	52%	1%	368
Time, Task, and Resource Management	1%	42%	56%	1%	370



Seven skills in Table 3 had more than 60 percent of respondents say they would be more important in the future: *Information Technology* (70.2 percent); *Critical Thinking and Problem Solving* (69.9 percent); *Initiative and Self-Direction* (64.1 percent); *Information Literacy* (63.0 percent); *Creativity and Innovation* (60.4 percent); *Respect for Diversity* (60.2 percent); and *Internet Use and Security* (60.1 percent). Fewer than 30 percent of respondents thought that *Mathematics* (28.6 percent); *Self-Representation* (27.0 percent); and *Job Acquisition and Advancement* (23.4 percent) would be more important skills in the future. Respondents were most uncertain about the future importance of *Job Acquisition and Advancement* (3.8 percent not sure).

The list below organizes the skills according to which future importance rating was selected by the greatest percentage of respondents. **No skill had a majority of respondents indicating it would be less important in the future—another indication that Virginia's current skill framework is comprised of skills that are considered important both now and in the future.**

#### **More important in the future**

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Customer Service
- Information Literacy
- Information Technology
- Initiative and Self-Direction
- Internet Use and Security
- Job-Specific Technologies
- Lifelong Learning
- Positive Work Ethic
- Respect for Diversity
- Speaking and Listening
- Teamwork
- Telecommunications
- Time, Task, and Resource Management

#### **About the same importance in the future**

- Conflict Resolution
- Health and Safety
- Integrity
- Job Acquisition and Advancement
- Mathematics
- Organizations, Systems, and Climates
- Reading and Writing
- Self-Representation

Table 4 shows the skills in decreasing order of future importance based on a weighted scale of 1 to 3, where “1” means the skill will be “less important” in the future, “2” means the skill will have “about the same importance” in the future, and “3” means the skill will be “more important” in the future. The skills in Table 4 are color-coded according to natural breaks in the data.

Table 4. Workplace Readiness Skills in Order of Future Importance

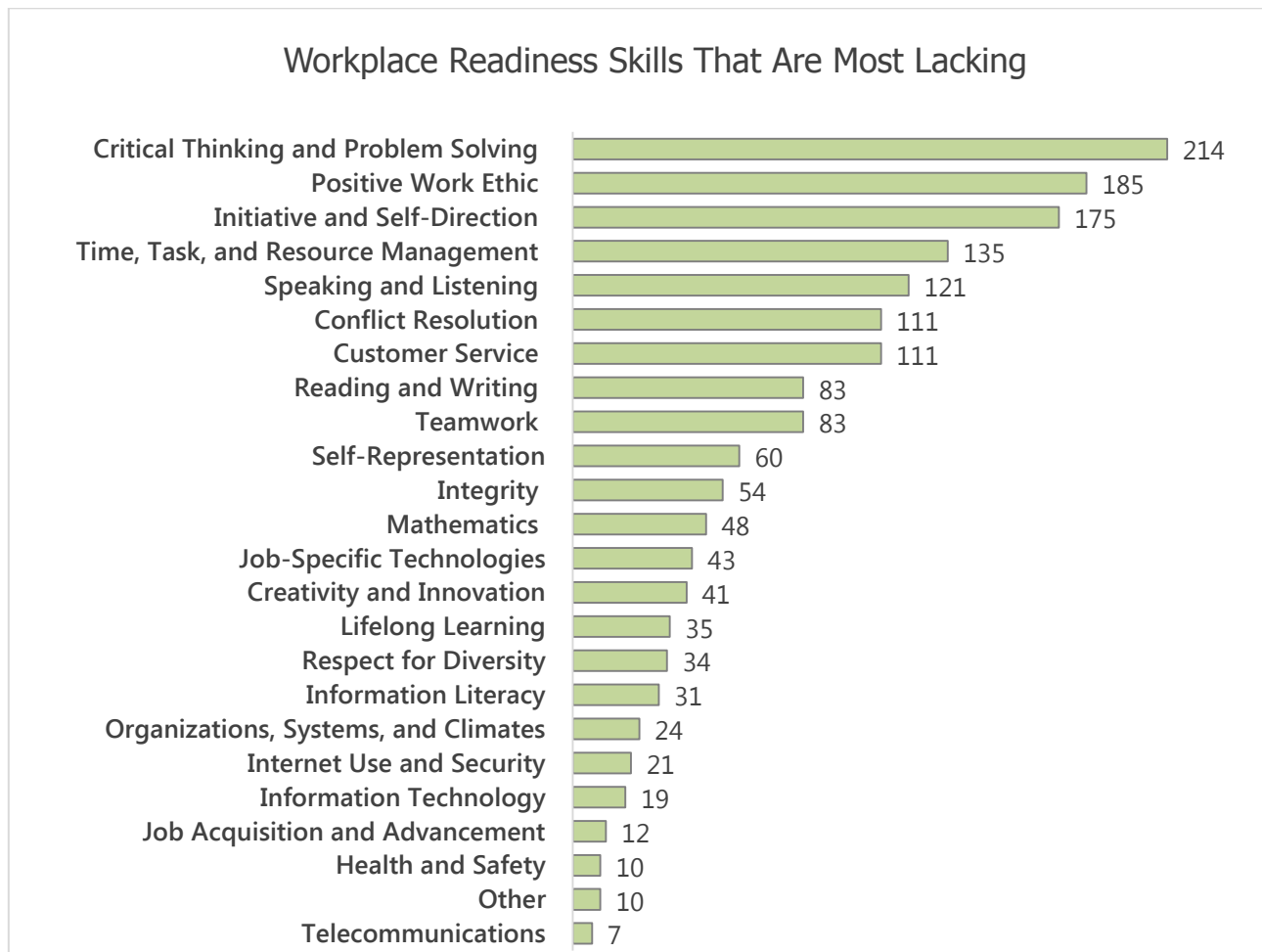
Workplace Readiness Skills in Order of Future Importance	
Skill	Metric
Critical Thinking and Problem Solving	2.70
Information Technology	2.69
Initiative and Self-Direction	2.63
Information Literacy	2.63
Creativity and Innovation	2.60
Respect for Diversity	2.59
Internet Use and Security	2.59
Teamwork	2.58
Lifelong Learning	2.57
Time, Task, and Resource Management	2.55
Job-Specific Technologies	2.54
Speaking and Listening	2.54
Customer Service	2.53
Positive Work Ethic	2.51
Telecommunications	2.50
Conflict Resolution	2.46
Integrity	2.46
Organizations, Systems, and Climates	2.46
Reading and Writing	2.44
Health and Safety	2.29
Mathematics	2.24
Job Acquisition and Advancement	2.20
Self-Representation	2.19

\*Color-coded according to natural breaks in the data. Median = 2.54 Average = 2.50

As demonstrated in Table 4, **all skills are expected to have about the same or more importance in the future** because all skills scored between a “2” and a “3” on the weighted scale. The five skills respondents thought would have the most future importance are *Critical Thinking and Problem Solving* (2.70); *Information Technology* (2.69); *Initiative and Self-Direction* (2.63); *Information Literacy* (2.63); and *Creativity and Innovation* (2.60). The five skills that respondents thought would have the least future importance (although keep in mind that no skill had a majority of respondents believe it would be *less* important in the future) are *Reading and Writing* (2.44); *Health and Safety* (2.29); *Mathematics* (2.24); *Job Acquisition and Advancement* (2.20); and *Self-Representation* (2.19).

In addition to rating the importance of Virginia's Workplace Readiness Skills, survey participants were asked to list up to five skills they believe today's entry-level employees are lacking the most. Figure 2 shows for each skill the number of respondents who indicated it was lacking among entry-level employees in the workplace.

Figure 2. Workplace Readiness Skills That Are Most Lacking Among Entry-Level Employees



More than 200 respondents said the skill most lacking among entry-level workers today is *Critical Thinking and Problem Solving* (214). More than 100 respondents said the following skills are most lacking: *Positive Work Ethic* (185); *Initiative and Self-Direction* (175); *Time, Task, and Resource Management* (135); *Speaking and Listening* (121); *Conflict Resolution* (111); and *Customer Service* (111).

The survey also included questions about the skill framework itself. To determine what skills might be missing from Virginia's framework, survey participants were asked the open-ended question, "What workplace readiness skills, if any, do you believe are missing from the current framework and should be added?" Although by no means a comprehensive list, some of the most frequently mentioned missing skills are outlined below. It should be noted that many of the skills are actually included in Virginia's current framework.

Skills most frequently mentioned as missing from the framework:

- Initiative and Self-Direction
- Communication Skills (in general)
- Work Ethic
- Cross-Cultural Competence/Global Outlook
- Teamwork
- Interpersonal/Social Skills (in general)
- Writing
- Accountability
- Attendance/Punctuality
- Realistic Expectations about Nature of Work
- Related Work Experience
- Problem Solving
- Reading
- Professionalism
- Drug-Free
- Time Management
- Accepts Constructive Criticism Well
- Critical Thinking
- "Big Picture" Thinking
- Ethics
- Job-Specific Skills
- Responsibility
- Respect
- Speaking

Finally, respondents were also given the chance to provide any additional comments or thoughts they might have about workplace readiness skills in general. A few of the most predominant themes among these comments include that students and entry-level workers need:

- More hands-on/real-life work experience
- Greater emphasis on work ethic/responsibility
- Better interpersonal skills
- More initiative/self-direction

## Research Summary

The purpose of this research project was to evaluate Virginia's current set of 21 workplace readiness skills based on a review of the most recent literature on the subject, comparisons to other national and state skill frameworks, and feedback from Virginia employers and workforce professionals. In our review of the literature, we identified six major workplace trends that we believe have had and will continue to have significant influence on the changing needs and skill demands of the workplace: 1) Information Revolution; 2) Automation; 3) Globalization; 4) Rapid and Continuous Innovation; 5) Organizational Restructuring; and 6) Time- and Power-Shifting. Based on our analysis of comparable skill frameworks, we concluded that Virginia's current set of workplace readiness skills serves its function well in terms of the number, type, specificity, and organization of its skills. It was also clear from the survey feedback that employers and workforce professionals continue to believe the vast majority of the skills are either "very" or "extremely" important. Only two skills were judged to be "moderately" important, and no skills were thought to be only "slightly" or "not at all" important. As a result, our recommended revisions to the framework represent more a refinement of the current skill set rather than a major revision.

## Framework Recommendations

Refer to Appendix 1 for a more detailed discussion of the rationale behind our recommendations.

- Based on our review of other frameworks, we recommend that the skill “domains” in the current framework be revised. We believe that “People Skills” deserve their own domain and that “Technology Knowledge and Skills” are so intertwined with professional competency these days that there is no need to have a separate “technology” skill domain. We suggest the following skill domains as an alternative:

<u>Current Skill Domains</u>	<u>Recommended Skill Domains</u>
Personal Qualities and People Skills	Personal Qualities and Abilities
Professional Knowledge and Skills	Interpersonal Skills
Technology Knowledge and Skills	Professional Competencies

- In our initial review of Virginia’s framework compared to others, we believed two skills were missing— *Initiative and Self-Direction* and *Information Literacy*. Although the concept of initiative is currently included in the skill *Creativity and Resourcefulness*, we thought it was worthy of being a separate, independent skill. We included both of these newly proposed skills in the survey along with the other current skills to see what employers and workforce professionals had to say about them. Both skills were rated as having moderate current importance (Nos. 10 and 11, respectively) and high future importance (Nos. 3 and 4, respectively). Additionally, survey respondents rated *Initiative and Self-Direction* as No. 3 on the list of most-lacking skills. For these reasons, we recommend that both skills be introduced into the framework.
- Rather than add any more new skills to the framework than the two already proposed, we suggest shifting, merging, revising, and/or enhancing key concepts among the following groups of skills to more accurately address the essence of each:
  - Information Technology / Telecommunications: We suggest incorporating the concepts currently outlined in *Telecommunications* into *Information Technology* and eliminating *Telecommunications* as a separate skill.
  - Integrity / Positive Work Ethic / Self-Representation: There is significant crossover among the concepts addressed by these skills. With some renaming, redefining, and incorporation of some of the skills that survey takers thought were missing from the framework, we believe the essence of each of these skills can be conveyed with more clarity.
  - Health and Safety / Job Acquisition and Advancement / Lifelong Learning: *Job Acquisition and Advancement* was consistently rated by survey respondents as low in importance and not viewed as a skill that is lacking among workers. We believe the current definition for this skill is too narrow in its scope. Rather than eliminating it, we believe the trend of “power-shifting” uncovered in the literature review—that is,

the trend that increasingly requires that individuals rather than employers assume greater responsibility for their own education, career advancement, personal health, and financial planning— justifies expanding this skill definition to incorporate these responsibilities and retaining the skill within the framework. By doing so, some crossover with concepts currently covered by *Health and Safety* and *Lifelong Learning* would occur, so those skills would also need to be modified. (See our proposals for modification below and in Appendix 1.)

- We suggest that the titles of the following skills be retained but recommend that the skill definitions be refined to better reflect research findings:
  - *Critical Thinking and Problem Solving*
  - *Mathematics*
  - *Reading and Writing*
  - *Teamwork*
- We suggest that both the titles and the definitions of the following skills be refined to better reflect research findings:
  - *Creativity and Resourcefulness*
  - *Customer Service*
  - *Diversity Awareness*
  - *Internet Use and Security*
  - *Job-Specific Technologies*
  - *Organizations, Systems, and Climates*
  - *Speaking and Listening*
  - *Time, Task, and Resource Management*
- We believe both the title and definition of *Conflict Resolution* are fine as is.

To exemplify our recommended updates, we developed a skill framework proposal (below) to serve as a starting point for further refinement of the framework in relation to curriculum and assessment considerations. Detailed justifications for our recommendations are provided in Appendix 1.

## Draft Proposal for Revised Workplace Readiness Skills for the Commonwealth

### PERSONAL QUALITIES AND ABILITIES

- 1) **CREATIVITY AND INNOVATION:** Employs originality, inventiveness, and resourcefulness in the workplace
- 2) **CRITICAL THINKING AND PROBLEM SOLVING:** Uses sound reasoning to analyze problems, evaluate potential solutions, and implement effective courses of action
- 3) **INITIATIVE AND SELF-DIRECTION:** Independently looks for ways to improve the workplace and accomplish tasks
- 4) **INTEGRITY:** Complies with laws and workplace policies; demonstrates honesty, fairness, and respect
- 5) **WORK ETHIC:** Consistently works to the best of one's ability and is diligent, dependable, and accountable for one's actions

### INTERPERSONAL SKILLS

- 6) **CONFLICT RESOLUTION:** Negotiates diplomatic solutions to interpersonal and workplace issues
- 7) **LISTENING AND SPEAKING:** Listens attentively and asks questions to clarify meaning; articulates ideas clearly in a manner appropriate for the setting and audience
- 8) **RESPECT FOR DIVERSITY:** Values individual differences and works collaboratively with people of diverse backgrounds, viewpoints, and experiences
- 9) **SERVICE ORIENTATION:** Anticipates and addresses the needs of customers and coworkers, providing thoughtful, courteous, and knowledgeable service
- 10) **TEAMWORK:** Assumes shared responsibility for collaborative work and respects the thoughts, opinions, and contributions of other team members

### PROFESSIONAL COMPETENCIES

- 11) **"BIG PICTURE" THINKING:** Understands one's role in fulfilling the mission of the workplace and considers the social, economic, and environmental impacts of one's actions
- 12) **CAREER AND LIFE MANAGEMENT:** Plans, implements, and manages personal and professional development goals related to education, career, finances, and health
- 13) **CONTINUOUS LEARNING AND ADAPTABILITY:** Accepts constructive feedback well and is open to new ideas and ways of doing things; continuously develops professional skills and knowledge in order to adjust to changing job requirements
- 14) **EFFICIENCY AND PRODUCTIVITY:** Plans, prioritizes, and adapts work goals to manage time and resources effectively
- 15) **INFORMATION LITERACY:** Locates information efficiently, evaluates the credibility and relevancy of sources and facts, and uses the information effectively to accomplish work-related tasks
- 16) **INFORMATION SECURITY:** Understands basic internet and email safety and follows workplace protocols to maintain the security of information, computers, networks, and facilities
- 17) **INFORMATION TECHNOLOGY:** Maintains a working knowledge of computers, software programs, and other IT devices commonly found in the workplace
- 18) **JOB-SPECIFIC TOOLS AND TECHNOLOGIES:** Knows how to select and safely use industry-specific technologies, tools, and machines to complete job tasks effectively
- 19) **MATHEMATICS:** Applies mathematical skills to work tasks as necessary
- 20) **PROFESSIONALISM:** Meets organizational expectations regarding work schedule, behavior, appearance, and communication
- 21) **READING AND WRITING:** Reads and interprets workplace documents and writes effectively
- 22) **WORKPLACE SAFETY:** Maintains a safe work environment by adhering to safety guidelines and identifying risks to self and other



## Study Limitations

It is important to state that the updates we are recommending to Virginia's Workplace Readiness Skills were formulated without consideration of how they might be implemented in the CTE curriculum or assessed. Curriculum development and assessment are not areas of expertise for our research group.

It is also important to understand the limitations of the survey process used to gather feedback from employers and workplace professionals. Because a list of potential survey participants was developed from an incomplete list of the total population of Virginia employers and workforce professionals using nonprobability sampling methods, generalizability of the results to the larger population of employers and workplace professionals throughout the state is limited. Additionally, information about potential respondents' field of work was not known and therefore not considered when developing the list of potential contacts. As a result, certain Career Clusters may have been over- or underrepresented in the research results compared to their actual representation within Virginia's economy. Slightly more than one-third of the survey respondents in this study, for example, indicated they worked in either the *Government & Public Administration* or *Education & Training* career clusters. The greater number of survey respondents in the *Government & Public Administration* cluster might also be related to the fact that the survey question was worded in such a way as to ask which Career Cluster best describes the respondent's company or organization, not their field of work. Thus, a police officer working for a local government might select the *Government & Public Administration* cluster as describing their employer instead of selecting the *Law, Public Safety, Corrections, & Security* cluster as describing their field of work.

The research results also do not offer insight into the reasoning behind the feedback that was provided by employers and workforce professionals, so additional research would need to be conducted to improve this understanding. For example, we do not know why survey respondents rated *Mathematics* so low in both current and future importance. Is it because they believe this skill is job-specific, or that modern-day technology eliminates the need for this skill in the workplace, or that competency in this skill is better addressed in other components of the CTE curriculum? The scope of this research did not allow for the answering of this type of question.

## Next Steps

Given that all of our recommendations were developed without consideration of factors related to curriculum development, assessment, or implementation, the next logical step would be to address these considerations in the continuing refinement of Virginia's current set of skills. Based on the work that was conducted following the last round of research in 2009, additional steps to complete this research include, but are not limited to:

- Creation or revision of curriculum and performance standards for each skill
- Revision of curriculum and assessment materials
- Approval of revised curriculum and assessment materials
- Communication and promotion of the final revised skill framework to the CTE community, the media, and the public

## Appendix 1 – Detailed Skill Framework Recommendations

Original Skill	Proposed Skill	Basis of Recommendation
<p><b>CONFLICT RESOLUTION</b> Negotiates diplomatic solutions to interpersonal and workplace issues</p>	<p><b>CONFLICT RESOLUTION</b> Negotiates diplomatic solutions to interpersonal and workplace issues</p>	<p>Although this skill was not rated high in either current or future importance, its position as the sixth-most-lacking skill, along with the increasing importance of interpersonal and complex communication skills in the workplace, support its inclusion in the framework. No change in wording is recommended.</p>
<p><b>CREATIVITY AND RESOURCEFULNESS</b> Contributes new ideas and works with initiative</p>	<p><b>CREATIVITY AND INNOVATION</b> Employs originality, inventiveness, and resourcefulness in the workplace</p>	<p>We believe that “initiative” does not belong with this skill and is instead worthy of its own skill category. Proposed wording in the skill title and definition incorporates terminology frequently encountered in the literature and framework reviews.</p>
<p><b>CRITICAL THINKING AND PROBLEM SOLVING</b> Analyzes and resolves problems that arise in completing assigned tasks</p>	<p><b>CRITICAL THINKING AND PROBLEM SOLVING</b> Uses sound reasoning to analyze problems, evaluate potential solutions, and implement effective courses of action</p>	<p>Proposed wording in the skill definition incorporates terminology frequently encountered in the literature and framework reviews.</p>
<p><b>CUSTOMER SERVICE</b> Identifies and addresses the needs of all customers, providing helpful, courteous, and knowledgeable service</p>	<p><b>SERVICE ORIENTATION</b> Anticipates and addresses the needs of customers and coworkers, providing thoughtful, courteous, and knowledgeable service</p>	<p>Not many other frameworks include this skill; however, it is fifth in the rank-ordered list of currently important skills and seventh among skills considered lacking. We borrowed the concept of “internal” customer service (service orientation toward coworkers as well as customers) from the handful of frameworks that do feature this skill and incorporated it into our skill definition.</p>
<p><b>DIVERSITY AWARENESS</b> Works well with all customers and coworkers</p>	<p><b>RESPECT FOR DIVERSITY</b> Values individual differences and works collaboratively with people of diverse backgrounds, viewpoints, and experiences</p>	<p>Proposed wording in the skill title and definition incorporates terminology frequently encountered in the literature and framework reviews. Additionally, the proposed title incorporates the concept of “respect” that some employers and professionals believed was missing from the current framework.</p>

<b>Appendix 1 – Detailed Skill Framework Recommendations (continued)</b>		
<b>Original Skill</b>	<b>Proposed Skill</b>	<b>Basis of Recommendation</b>
<p><b>HEALTH AND SAFETY</b> Follows safety guidelines and manages personal health</p>	<p><b>WORKPLACE SAFETY</b> Maintains a safe work environment by adhering to safety guidelines and identifying risks to self and others</p>	<p>We recommend shifting the “personal health” part of this skill definition to the newly proposed skill <i>Career and Life Management</i>. Although this skill is not included in many other frameworks and was not rated by employers and professionals as being very important or lacking among workers, we believe the trend of organizational flattening will require employees to take even greater personal responsibility for their own workplace safety in the future.</p>
<p>(new skill)</p>	<p><b>INFORMATION LITERACY</b> Locates information efficiently, evaluates the credibility and relevance of sources and facts, and uses the information effectively to accomplish work-related tasks</p>	<p>As a result of the Information Revolution, this skill is becoming increasingly important in the workplace—employees must know how to manage information. At least a dozen other frameworks include this skill, and it is ranked fourth in terms of future importance based on input from employers and professionals.</p>
<p><b>INFORMATION TECHNOLOGY</b> Uses computers, file management techniques, and software/programs effectively</p>	<p><b>INFORMATION TECHNOLOGY</b> Maintains a working knowledge of computers, software programs, and other IT devices commonly found in the workplace</p>	<p>The technology that enables workers to access and manage information is continuously evolving. To reflect this, our proposed definition places more emphasis on “maintaining a working knowledge” of information technology. Also, by incorporating elements of the current <i>Telecommunications</i> skill, the newly proposed <i>Information Technology</i> skill definition eliminates the need for a separate <i>Telecommunications</i> skill within the framework.</p>
<p>(new skill)</p>	<p><b>INITIATIVE AND SELF-DIRECTION</b> Independently looks for ways to improve the workplace and accomplish tasks</p>	<p>Although “initiative” is included in the current <i>Creativity and Resourcefulness</i> skill definition, we think it is worthy of being a separate skill, and many elements of the research support this. Rapidly changing workplaces and flatter organizational structures increasingly require that workers are skilled at independent decision-making, and many other frameworks currently feature this skill. Additionally, it is the skill that employers and professionals most frequently said was missing from Virginia’s current framework, and it is ranked third both in terms of future importance and as a skill that is lacking among entry-level employees.</p>

<b>Appendix 1 – Detailed Skill Framework Recommendations (continued)</b>		
<b>Original Skill</b>	<b>Proposed Skill</b>	<b>Basis of Recommendation</b>
<p><b>INTEGRITY</b> Abides by workplace policies and laws and demonstrates honesty and reliability</p>	<p><b>INTEGRITY</b> Complies with laws and workplace policies; demonstrates honesty, fairness, and respect</p>	<p>Although there is significant crossover among the concepts addressed in the definitions of <i>Integrity</i> and <i>Work Ethic</i>, based on our review of other frameworks, we believe “reliability” fits better with our proposed definition of <i>Work Ethic</i>. We also think <i>Integrity</i> is the skill that best encompasses the personal quality of “respect” that some employers and professionals believed was not emphasized enough in Virginia’s current framework.</p>
<p><b>INTERNET USE AND SECURITY</b> Uses the internet appropriately for work</p>	<p><b>INFORMATION SECURITY</b> Understands basic internet and email safety and follows workplace protocols to maintain the security of information, computers, networks, and facilities</p>	<p>We believe the current <i>Internet Use and Security</i> skill title and definition do not sufficiently reflect the need to protect all types of information, so we recommend changing the skill title and expanding the definition to account for this.</p>
<p><b>JOB ACQUISITION AND ADVANCEMENT</b> Prepares to apply for a job and to seek promotion</p>	<p><b>CAREER AND LIFE MANAGEMENT</b> Plans, implements, and manages personal and professional development goals related to education, career, finances, and health</p>	<p>Survey respondents did not believe this skill, as currently defined, is very important—either now or in the future. However, there has been a trend developing over time in the workplace that has shifted an increasing amount of the responsibility for a worker’s professional development, personal health, and financial well-being from the employer to the employee. We think that the expansion of the current definition to incorporate all of these elements versus focusing only the singular aspect of career advancement would better capture the nature of this workplace trend and justify retaining the revised version of this skill in the framework. At least half a dozen other frameworks also include some version of a “career and life management” skill.</p>

<b>Appendix 1 – Detailed Skill Framework Recommendations (continued)</b>		
<b>Original Skill</b>	<b>Proposed Skill</b>	<b>Basis of Recommendation</b>
<p><b>JOB-SPECIFIC TECHNOLOGIES</b> Selects and safely uses technological resources to accomplish work responsibilities in a productive manner</p>	<p><b>JOB-SPECIFIC TOOLS AND TECHNOLOGIES</b> Knows how to select and safely use industry-specific technologies, tools, and machines to complete job tasks effectively</p>	<p>All career fields have a certain set of tools and technologies that are frequently used to complete common work tasks. To be successful, it is important that students and entry-level workers have and maintain a working knowledge of these job-specific tools and technologies. We believe the current skill title and definition would be enhanced by expanding them to include reference to job-specific "tools" and "machines" in addition to the current reference to "technological resources."</p>
<p><b>LIFELONG LEARNING</b> Continually acquires new industry-related information and improves professional skills</p>	<p><b>CONTINUOUS LEARNING AND ADAPTABILITY</b> Accepts constructive feedback well and is open to new ideas and ways of doing things; continuously develops professional skills and knowledge in order to adjust to changing job requirements</p>	<p>As a result of the rapid change and innovation so prevalent in modern-day workplaces, the literature review was thick with references to the increasing importance of a worker's ability to continuously learn new skills and adapt them to changing work environments. Doing so requires more than just being able to acquire new information—it also requires a certain openness of mind and psychological flexibility that enables the genuine acceptance of the value of new ideas and ways of doing things as well as the ability to adapt and apply skills and knowledge to new and changing workplace situations. We therefore recommend revising the current <i>Lifelong Learning</i> skill title and definition to better reflect the importance of adaptability. We also received feedback from some employers and professionals that many entry-level workers lack the ability to accept constructive criticism well. We therefore propose incorporating into this skill definition the ability to accept constructive feedback well since doing so is an important part of continuous learning.</p>
<p><b>MATHEMATICS</b> Uses mathematical reasoning to accomplish tasks</p>	<p><b>MATHEMATICS</b> Applies mathematical skills to work tasks as necessary</p>	<p>Based on feedback from employers and professionals, <i>Mathematics</i> is ranked very low in both current and future importance. Our proposed definition seeks to better emphasize the more basic level of mathematics that we believe this skill intends to highlight.</p>

<b>Appendix 1 – Detailed Skill Framework Recommendations (continued)</b>		
<b>Original Skill</b>	<b>Proposed Skill</b>	<b>Basis of Recommendation</b>
<p><b>ORGANIZATIONS, SYSTEMS, AND CLIMATES</b> Identifies "big picture" issues and his or her role in fulfilling the mission of the workplace</p>	<p><b>"BIG PICTURE" THINKING</b> Understands one's role in fulfilling the mission of the workplace and considers the social, economic, and environmental consequences of one's actions</p>	<p>We believe our proposed title captures the essence of this skill in a more intuitive manner. Other proposed wording in the skill definition incorporates terminology frequently encountered in the literature and framework reviews.</p>
<p><b>POSITIVE WORK ETHIC</b> Comes to work every day on time, is willing to take direction, and is motivated to accomplish the task at hand</p>	<p><b>WORK ETHIC</b> Consistently works to the best of one's ability and is diligent, dependable, and accountable for one's actions</p>	<p>Many frameworks equate "work ethic" with "professionalism." We believe, however, that the two skills represent slightly different sets of behavior. To us, "work ethic" relates more to the personal qualities of diligence, reliability, and accountability—being a "work horse"—whereas "professionalism" has more to do with workplace behavioral norms. For this reason, we suggest shifting "reliability" from the current definition of <i>Integrity</i> to this skill, and we propose moving the "time and attendance" aspect of this definition to our newly proposed <i>Professionalism</i> skill. We also think this is the right place to incorporate the aspect of "accountability" that many employers and professionals thought was missing from the current framework.</p>
<p><b>READING AND WRITING</b> Reads and interprets workplace documents and writes clearly</p>	<p><b>READING AND WRITING</b> Reads and interprets workplace documents and writes effectively</p>	<p>We believe substituting "effectively" for "clearly" in the definition avoids the implication that the definition is referring only to clear handwriting.</p>
<p><b>SELF-REPRESENTATION</b> Dresses appropriately and uses language and manners suitable for the workplace</p>	<p><b>PROFESSIONALISM</b> Meets organizational expectations regarding work schedule, behavior, appearance, and communication</p>	<p>Because we think the primary purpose of this skill is to address the satisfaction of workplace behavioral norms, we suggest relocating here the "time and attendance" aspect of the current <i>Positive Work Ethic</i> skill definition. The proposed renaming of the skill addresses the fact that many employers and professionals thought "professionalism" was missing from the current framework. Other proposed wording in the skill definition incorporates terminology frequently encountered in the literature and framework reviews.</p>

<b>Appendix 1 – Detailed Skill Framework Recommendations (continued)</b>		
<b>Original Skill</b>	<b>Proposed Skill</b>	<b>Basis of Recommendation</b>
<p><b>SPEAKING AND LISTENING</b> Follows directions and communicates effectively with customers and fellow employees</p>	<p><b>LISTENING AND SPEAKING</b> Listens attentively and asks questions to clarify meaning; articulates ideas clearly in a manner appropriate for the setting and audience</p>	<p>We propose switching the word order within the skill title because we believe this puts greater emphasis on the importance of listening to others before speaking. Because many frameworks separate these two skills, we suggest that each of these skills be addressed more distinctly within the skill definition. Many frameworks also incorporate the element of "active listening." We do that, too, in our proposed definition; but rather than simply make reference to "active listening," we spell out within the definition what "active listening" actually means. Other proposed wording in the skill definition incorporates terminology frequently encountered in the literature and framework reviews.</p>
<p><b>TEAMWORK</b> Contributes to the success of the team, assists others, and requests help when needed</p>	<p><b>TEAMWORK</b> Assumes shared responsibility for collaborative work and respects the thoughts, opinions, and contributions of other team members</p>	<p>Proposed wording in the skill definition incorporates terminology frequently encountered in the literature and framework reviews as well as qualities like "respect" and "responsibility" that many employers and professionals thought were missing in Virginia's current skill framework.</p>
<p><b>TELECOMMUNICATIONS</b> Selects and uses appropriate devices, services, and applications</p>	<p>(merged with <i>Information Technology</i>)</p>	<p>Employers and professionals thought <i>Telecommunications</i> was of very low current importance and of only moderate future importance. Additionally, it was rated last as a skill that is currently lacking among entry-level employees. For these reasons, and because we believe this skill is actually a subskill within the larger realm of information technology, we propose merging <i>Telecommunications</i> with <i>Information Technology</i> and eliminating this skill from the framework.</p>
<p><b>TIME, TASK, AND RESOURCE MANAGEMENT</b> Organizes and implements a productive plan of work</p>	<p><b>EFFICIENCY AND PRODUCTIVITY</b> Plans, prioritizes, and adapts work goals to manage time and resources effectively</p>	<p>We believe our proposed title captures the essence of this skill in a more intuitive manner. Other proposed wording in the skill definition incorporates important elements of the current skill title as well as terminology frequently encountered in the literature and framework reviews.</p>



## Appendix 2 – Survey Methodology

In the 1980s and 1990s, research regarding workplace trends in Virginia involved conducting hour-long phone interviews with hundreds of Virginia employers. This process, though extremely valuable, was time- and resource-intensive. Without having the benefit of those resources this time around, but with easier access to more advanced information and communication technology, the current research team replicated the online survey approach taken by Cooper Center researchers in 2009. As was the case then, a list of potential survey participants was developed from an incomplete list of the total population of Virginia employers and workforce professionals using nonprobability sampling methods, thus limiting the generalizability of the survey results. Despite its limitations, the online feedback provided researchers with an excellent opportunity to hear from a range of Virginia professionals who are knowledgeable about workplace readiness skills and willing to share their opinions. This feedback served as a valuable resource in formulating the team's recommendations for updates to Virginia's current set of skills.

### SURVEY DEVELOPMENT

The survey of Virginia employers and workforce professionals conducted in 2009 involved getting feedback on a set of 21 draft skills that were similar, but not identical to, the set of skills that were ultimately approved and finalized as Virginia's Workplace Readiness Skills. Our primary intention for the survey conducted this time around was not to propose an entirely new set of skills but rather to get feedback on the current set of skills. Based on our initial literature and framework review, however, two important skills seemed to be missing from Virginia's framework—*Information Literacy* and *Initiative & Self-Direction*. To test whether survey participants also deemed these skills worthy of inclusion in Virginia's framework, we included them in the survey along with Virginia's current set of 21 skills. Because the proposed *Initiative and Self-Direction* skill covers the concept of initiative, we removed the word "initiative" from the current skill definition of *Creativity and Resourcefulness* and renamed/redefined that skill as *Creativity and Innovation*.

Additionally, based on our own assessment and on feedback received from Virginia's CTE Advisory Committee, we changed the skill title of *Diversity Awareness* to *Respect for Diversity* and revised the skill definition to better reflect the essence of that skill. We also altered wording in the *Positive Work Ethic* skill definition to reflect a greater variety of workplace arrangements by changing the phrase "comes to work on time" to "adheres to an agreed-upon work schedule."

Six questions were included in the survey: (See Appendix 3 for detailed survey results.)

- 1) Which CTE career cluster best describes your company or organization? (required)
- 2) How important is each workplace readiness skill for entry-level workers in your organization? (required)
- 3) What workplace readiness skills are today's entry-level employees lacking the most? (list up to five)

## Appendix 2 – Survey Methodology (continued)

- 4) In about five years from now, how important will each workplace readiness skill be for entry-level workers?
- 5) What workplace readiness skills, if any, do you believe are missing from the current framework and should be added?
- 6) What additional comments or thoughts do you have about workplace readiness skills?

To have their responses included in the final data analysis, respondents were required to provide an answer to questions number one (career cluster of company or organization) and number two (current importance of workplace readiness skills).

### CONTACT LIST DEVELOPMENT

A combination of purposive and snowball sampling methods was employed to develop a list of potential survey participants. Purposive sampling is a nonprobability sampling method by which research participants are selected for a particular reason—in this case, for their presumed knowledge of Virginia's Workplace Readiness Skills or their experience hiring or working with entry-level employees. Snowball sampling is a nonprobability sampling method by which research participants are selected as they are identified by successive research participants. This type of sampling was achieved by sending survey links to a certain number of contacts that could then be forwarded by them to other people they believed were qualified to take the survey. A nonprobability sampling method is one in which the probability of the selection of a potential survey participant from the larger population of interest is not random and is therefore unknown.

A total of 2,396 people were contacted to participate in the survey. An initial list of 1,188 contacts was developed by requesting that the Office of Career, Technical, and Adult Education and several CTE administrators provide to the Cooper Center the email addresses of Virginia employers and workforce professionals who they believed had the knowledge or experience desired of survey participants. After the survey was underway and the research team had a chance to review the survey response rate as well as the distribution of respondents among CTE Career Clusters, an additional list of 1,150 contacts was developed by the Cooper Center to expand the reach of the survey and informally target members of underrepresented CTE Career Clusters. This list was compiled by combing Virginia-related and industry-specific websites for email addresses of workforce professionals who would most likely have knowledge of Virginia's Workplace Readiness Skills or experience hiring or working with entry-level employees. Additional survey invitations capable of being forwarded were also sent to two Virginia Chamber of Commerce executives and 56 professionals associated with Virginia Workforce Centers.

## Appendix 2 – Survey Methodology (continued)

### SURVEY ADMINISTRATION

The survey was administered from June 19 to August 9, 2017, using the University of Virginia's Qualtrics Research Suite. This survey research platform provides faculty, staff, and students at the University of Virginia the opportunity to develop and manage complex research surveys that protect the confidentiality of respondents' data.

Two types of survey links were used—individual links and anonymous links. Individual survey links allow recipients to take the survey only once, and they cannot be forwarded to other email addresses. Anonymous survey links, on the other hand, can be forwarded from one recipient to another, making it impossible to track within the Qualtrics system the total number of people who receive them. For this reason, an accurate overall survey response rate cannot be calculated.

Survey invitations were emailed to a total of 2,396 people. Individual survey links were sent to 2,338 people—1,188 on the initial CTE contact list on June 19, 2017, and 1,150 on the subsequent Cooper Center contact list on July 25, 2017. Of these 2,338 survey invitations, 148 were rejected within the email system—88 from the initial CTE contact list and 60 from the Cooper Center contact list. Additionally, 33 contacts opted out of participation—21 from the initial CTE contact list and 12 from the Cooper Center contact list. Three reminder emails were sent to individuals on the initial CTE contact list who had not yet completed a survey on June 27, 2017; July 5, 2017; and August 7, 2017. Two reminder emails were sent to individuals on the Cooper Center contact list who had not yet completed a survey on July 31, 2017, and August 7, 2017. Of the 2,338 people receiving individual survey links, 388 provided responses, although only 338 of those providing responses completed the required portion of the survey.

A total of 1,057 anonymous survey links were sent. Two were sent to Virginia Chamber of Commerce executives and 56 were sent to professionals associated with Virginia Workforce Centers, eight of which were rejected within the email system. Additionally, in response to numerous requests from people on the initial CTE contact list and in an effort to expand the reach of the survey, 999 contacts of the 1,188 on the initial CTE contact list were also provided with an anonymous survey link (in addition to the individual survey link they had previously received). Of these 999 anonymous survey link emails, 136 were rejected within the email system. Of the unknown number of people receiving anonymous survey links, 71 provided responses, although only 57 of those providing responses completed the required portion of survey.

In summary, of the 459 total responses received, 388 resulted from individual survey links and 71 from anonymous survey links. Of the 459 total respondents, only 395 completed the required portion of the survey. Of these 395 survey completions, 338 resulted from individual survey links and 57 from anonymous survey links.

## Appendix 2 – Survey Methodology (continued)

### SURVEY ANALYSIS

Descriptive survey data statistics were prepared using Microsoft Excel and Stata statistical software. To minimize subjective reviewer bias in the evaluation of the open-ended survey question regarding skills missing from the current framework, two analysts first reviewed and categorized the responses separately, then compared notes and reached consensus on the nature and frequency of response categories. One analyst reviewed and categorized responses to the open-ended question soliciting general feedback about workplace readiness skills.

## Appendix 3 – Survey Data

### Virginia 2017 Workplace Readiness Skills Employer and Workforce Professional Survey

(Note: Open-ended survey responses have been provided as direct quotes other than to modify them for reading accessibility purposes.)

Q1. Please tell us which option below best describes your company or organization. (\*Required)

Career Cluster	Number of respondents (percent)
Agriculture, Food, and Natural Resources	28 (7%)
Architecture and Construction	18 (5%)
Arts, A/V Technology, and Communications	10 (3%)
Business Management and Administration	6 (2%)
Education and Training	56 (14%)
Finance	15 (4%)
Government and Public Administration	79 (20%)
Health Science	25 (6%)
Hospitality and Tourism	4 (1%)
Human Services	30 (8%)
Information Technology	10 (3%)
Law, Public Safety, Corrections, and Security	18 (5%)
Manufacturing	26 (7%)
Marketing	4 (1%)
Science, Technology, Engineering, and Mathematics	16 (4%)
Transportation, Distribution, and Logistics	10 (3%)

### Appendix 3 – Survey Data (continued)

Career Cluster	Number of respondents (percent)
<p><u>Other:</u></p> <ul style="list-style-type: none"> <li>• Professional Organization</li> <li>• Business Development</li> <li>• Engineering Consultants</li> <li>• Electrical</li> <li>• Non-profit</li> <li>• Defense Contractor</li> <li>• Recreation, Education and Natural Resources</li> <li>• Workforce System</li> <li>• Custom furniture designer/craftsman</li> <li>• Parks and Recreation</li> <li>• nonprofit management</li> <li>• Labor representative from Education Associations</li> <li>• Chamber of Commerce and DMO</li> <li>• Economic Development</li> <li>• Entertainment and Technology Company</li> <li>• Engineering Services</li> <li>• Non-Profit Organization</li> <li>• HVAC contractor</li> <li>• Communications and camera systems and cabling sales, service and installation</li> <li>• Local Government</li> <li>• Entertainment</li> <li>• venture capital</li> <li>• Association for Manufacturing Excellence</li> <li>• Chamber of Commerce</li> <li>• Nonprofit</li> <li>• Utility</li> <li>• What about service?..ie. plumbing, a/c, auto service, lawn care, construction, electrician,. you know the things that you have to have to get by! Forget about this survey, you never have anyone that can do any of these most fundamental jobs!</li> <li>• Community Action Agency</li> <li>• Energy &amp; Utilities</li> <li>• Association</li> <li>• Department of Small and Supplier Diversity</li> <li>• Non-Profit - Community Health Education</li> <li>• Government, Public Administration, Construction, Engineering, Transportation</li> <li>• Economic Development</li> <li>• Utility - Electric</li> <li>• Heavy Equipment Sales &amp; Service</li> <li>• Public Utilities - Water, Wastewater, Storm Water, &amp; Natural Gas</li> <li>• Funeral services</li> <li>• Automotive &amp; Manufacturing</li> <li>• Call Center - Customer Service</li> </ul>	<p>40 (10%)</p>
<b>TOTAL</b>	<b>395</b>

## Appendix 3 – Survey Data (continued)

Q2. How important is each workplace readiness skill for entry-level workers in your organization?  
(\*Required)

If the skill is not applicable within the context of your workplace, please select “N/A.”

Skill	Not at all important	Slightly important	Moderately important	Very important	Extremely important	Not Applicable	TOTAL
Conflict Resolution	1 (0%)	18 (5%)	57 (14%)	168 (43%)	149 (38%)	2 (1%)	395
Creativity and Innovation	0 (0%)	19 (5%)	100 (25%)	163 (41%)	112 (28%)	1 (0%)	395
Critical Thinking and Problem Solving	1 (0%)	4 (1%)	28 (7%)	135 (34%)	227 (57%)	0 (0%)	395
Customer Service	2 (1%)	9 (2%)	26 (7%)	94 (24%)	258 (65%)	6 (2%)	395
Health and Safety	3 (1%)	16 (4%)	70 (18%)	122 (31%)	174 (44%)	10 (3%)	395
Information Literacy	3 (1%)	10 (3%)	46 (12%)	153 (39%)	181 (46%)	2 (1%)	395
Information Technology	5 (1%)	16 (4%)	58 (15%)	162 (41%)	154 (39%)	0 (0%)	395
Initiative and Self-Direction	0 (0%)	6 (2%)	39 (10%)	156 (39%)	194 (49%)	0 (0%)	395
Integrity	0 (0%)	3 (1%)	10 (3%)	76 (19%)	306 (77%)	0 (0%)	395
Internet Use and Security	8 (2%)	14 (4%)	60 (15%)	127 (32%)	183 (46%)	3 (1%)	395
Job Acquisition and Advancement	16 (4%)	45 (11%)	134 (34%)	127 (32%)	60 (15%)	13 (3%)	395
Job-Specific Technologies	0 (0%)	18 (5%)	70 (18%)	170 (43%)	133 (34%)	4 (1%)	395
Lifelong Learning	3 (1%)	13 (3%)	62 (16%)	156 (39%)	161 (41%)	0 (0%)	395
Mathematics	8 (2%)	51 (13%)	130 (33%)	129 (33%)	72 (18%)	5 (1%)	395
Organizations, Systems, and Climates	1 (0%)	20 (5%)	86 (22%)	168 (43%)	117 (30%)	3 (1%)	395
Positive Work Ethic	0 (0%)	1 (0%)	10 (3%)	92 (23%)	292 (74%)	0 (0%)	395
Reading and Writing	0 (0%)	8 (2%)	35 (9%)	129 (33%)	223 (56%)	0 (0%)	395
Respect for Diversity	5 (1%)	8 (2%)	42 (11%)	108 (27%)	229 (58%)	3 (1%)	395
Self-Representation	1 (0%)	10 (3%)	56 (14%)	145 (37%)	183 (46%)	0 (0%)	395
Speaking and Listening	0 (0%)	4 (1%)	11 (3%)	102 (26%)	278 (70%)	0 (0%)	395
Teamwork	0 (0%)	2 (1%)	23 (6%)	118 (30%)	251 (64%)	1 (0%)	395
Telecommunications	7 (2%)	29 (7%)	89 (23%)	161 (41%)	104 (26%)	5 (1%)	395
Time, Task, and Resource Management	0 (0%)	6 (2%)	36 (9%)	149 (38%)	203 (51%)	1 (0%)	395

### Appendix 3 – Survey Data (continued)

Q3. What workplace readiness skills are today's entry-level employees lacking the most?  
Please select up to five skills.

Skill	Number of Respondents Selecting Skill
Critical Thinking and Problem Solving	214
Positive Work Ethic	185
Initiative and Self-Direction	175
Time, Task, and Resource Management	135
Speaking and Listening	121
Conflict Resolution	111
Customer Service	111
Reading and Writing	83
Teamwork	83
Self-Representation	60
Integrity	54
Mathematics	48
Job-Specific Technologies	43
Creativity and Innovation	41
Lifelong Learning	35
Respect for Diversity	34
Information Literacy	31
Organizations, Systems, and Climates	24
Internet Use and Security	21
Information Technology	19
Job Acquisition and Advancement	12
Health and Safety	10
Telecommunications	7
None	0
<u>Other:</u> <ul style="list-style-type: none"> <li>• I don't know</li> <li>• Communication</li> <li>• need a drivers license and clean driving record</li> <li>• Construction and Electrical Skills</li> <li>• Professionalism</li> <li>• spend too much time on cell phone--completely distracted from work</li> <li>• Attendance. They have difficulty even reporting to work.</li> <li>• humility</li> <li>• Professionalism</li> <li>• Speaking and Listening, including PUBLIC SPEAKING and putting together effective presentation</li> </ul>	10



### Appendix 3 – Survey Data (continued)

Now we would like to ask you about how important you think these workplace readiness skills will be in the future.

Q4. In about five years from now, how important will each skill be for entry-level workers?

Skill	Less important	About the same importance	More important	Not sure	TOTAL
Conflict Resolution	4 (1%)	188 (51%)	174 (47%)	4 (1%)	370
Creativity and Innovation	4 (1%)	138 (37%)	223 (60%)	4 (1%)	369
Critical Thinking and Problem Solving	2 (1%)	106 (29%)	258 (70%)	3 (1%)	369
Customer Service	5 (1%)	161 (44%)	201 (54%)	2 (1%)	369
Health and Safety	10 (3%)	240 (65%)	114 (31%)	6 (2%)	370
Information Literacy	2 (1%)	129 (35%)	230 (63%)	4 (1%)	365
Information Technology	6 (2%)	102 (28%)	259 (70%)	2 (1%)	369
Initiative and Self-Direction	5 (1%)	124 (34%)	236 (64%)	3 (1%)	368
Integrity	3 (1%)	192 (52%)	172 (47%)	2 (1%)	369
Internet Use and Security	8 (2%)	134 (36%)	221 (60%)	5 (1%)	368
Job Acquisition and Advancement	16 (4%)	252 (68%)	86 (23%)	14 (4%)	368
Job-Specific Technologies	6 (2%)	156 (42%)	202 (55%)	5 (1%)	369
Lifelong Learning	2 (1%)	153 (41%)	213 (58%)	2 (1%)	370
Mathematics	18 (5%)	239 (65%)	106 (29%)	7 (2%)	370
Organizations, Systems, and Climates	6 (2%)	185 (50%)	171 (46%)	6 (2%)	368
Positive Work Ethic	2 (1%)	175 (48%)	187 (51%)	4 (1%)	368
Reading and Writing	7 (2%)	191 (52%)	170 (46%)	1 (0%)	369
Respect for Diversity	5 (1%)	138 (38%)	221 (60%)	3 (1%)	367
Self-Representation	29 (8%)	237 (64%)	100 (27%)	4 (1%)	370
Speaking and Listening	1 (0%)	168 (46%)	198 (54%)	2 (1%)	369
Teamwork	2 (1%)	150 (41%)	213 (58%)	4 (1%)	369
Telecommunications	9 (2%)	163 (44%)	193 (52%)	3 (1%)	368
Time, Task, and Resource Management	4 (1%)	155 (42%)	206 (56%)	5 (1%)	370

### Appendix 3 – Survey Data (continued)

Q5. What workplace readiness skills, if any, do you believe are missing from the current framework and should be added?

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- Importance of Attendance and Drug testing.
- N/A
- open minded
- Time Management
- Ability to adapt to a certain "culture" in the workplace. Also, hardworking... willing to put in the extra time to get the job done. Attention to detail.
- Grammar, English and writing skills
- The current education framework--whether it be specific to k-12, CTE, trade college, 2-year and 4-year degrees--is missing emphasis on hands on learning ("real world" experience through internships and apprenticeships) which provide basic experience in customer service, team work and self-presentation. Personally, I would have benefited more from my high school and college experiences if internships and writing/critical thinking exercises played a more significant role in schooling. I attended a smaller liberal arts school in Virginia where it was a mandated and touted part of the curriculum, but I would have benefited from a heavier emphasis. I think critical thinking skills, initiative and innovation are--and should be--a large part of my role as an economic developer. These skills apply across the spectrum, too!
- Communication, workplace etiquette
- Concentration skills
- flexibility
- none
- none
- How to deal with set-backs and receive constructive feedback.
- N/A
- Perseverance
- N/A
- Innovation
- Overall respect for the process, which if done incorrectly creates more issues in the long run. Thoughtfulness, ownership, and putting forth ones best effort seems to be on the decline.
- Soft skills and basic math skills
- I think you need to define categories up front. My idea of info technology may include computers and software. Others may not define it that way.
- Understanding of Globalization Issues. Ability to work with people from other countries and cultures.
- More emphasis on teamwork and interaction with others. Young workers are too focused on social media/internet.

### Appendix 3 – Survey Data (continued)

- Self-reflection on job performance (finding ways to improve before the supervisor tells you), have a driver's license and clean driving record
- Work ethic
- Construction, electrical, and technical hands-on training.
- none
- none
- Good work ethic, such as being on time, reliable and a team player.
- Life experiences including interpersonal interactions and volunteering that prepare experiences for employment; self-advocacy; interpersonal communication and interactions; problem solving
- Read your audience.
- none
- The ability to multitask and complete several different projects at the same time
- Patience
- none
- Ethics, listening and humility
- Trade skills
- I think entry level workers are not often prepared for the many demands of a full-time job, especially coming out of college. An ability to self-start and direct their work toward the goals of the organization is necessary.
- completing employment forms (how to complete tax forms), professional characteristics and how to carry yourself, separation of social and workplace environments, working with different generations, how to work with managers who are older or those who are younger, conflict management.
- 95% of the entry level youth we have hired are only there for the pay check. 1) Stress that work is a way of life and the more involved the get into work the easier it is. 2) More screening on what they are interested in. The more interested in the work they are the easier it is.
- Not sure
- how to work as a team allowing everyone to win not just the individual
- N/A
- Understanding of economic principles that drive jobs, benefits, and personal financial planning for the future.

### Appendix 3 – Survey Data (continued)

- Students have NO understanding of the importance of filing systems and the naming of files as they are only allowed to save information to thumb drives. They also do not understand the havoc they can wreak by making changes to websites, customer records, passwords, etc. and not documenting this properly. Entry level workers have never had to communicate with team mates utilizing software solutions in order to get a job done. With so much experience with social media which is voluntary it is very hard to get younger workers to communicate clearly and often with team mates; it is difficult to get experienced workers to step up the communication with team mates and customers in today's fast paced environment. Also, finding a solution to the prioritization of work that works for a diverse workplace is also difficult - hard to find the one size fits all.
- Common sense but I don't think it is a skill that can be taught. It is sadly lacking!!!!
- Communication, self-directing
- Globalization understanding how Virginia and the US fit into the rest of the world.
- None
- Conscientiousness
- Job Ownership; Owning the job / career you have selected and working to perfect the job you are in by incorporating your personality, enthusiasm and drive to propel yourself and the company you work for to greater outcomes.
- Many entry-level employees would benefit from a moderated expectation of what life is like after college. The real world applications of our skills are not always glamorous or as engaging as we'd hoped, but there are mundane tasks that must be completed every day and require the same level of attention as the things that are seen as more interesting.
- The ability to find an unknown answer without direction and then apply it to a problem. The ability to notice a need and complete it without being encouraged.
- The importance of being a team member and doing the work required. There is an attitude of "that is not my job" and therefore, they only do what is assigned to them or in their job description. If the director of a department will mop the floor, then everyone should pitch in to complete the work load.
- Technical skills.
- Emotional intelligence
- I think in the broad scope they are identified.
- Attendance could be considered "Time Management" or "Positive Work Ethic" but just for clarity I would track it as a separate item. For us, our largest concerns are Attendance, Work Ethic (Motivation) and clearing pre-employment (Physical, Drug Test, Background).
- N/A
- Attention to detail
- Ability to pass drug test.
- N/A

### Appendix 3 – Survey Data (continued)

- I don't believe it is the skills that are missing. The right individuals are missing. Much is done with surveys, but the issue is the presenters and teachers are the one lacking the knowledge and willingness to teach. Most teachers do not get the correct support from their administrators and from my visits to schools all over VA the students are the ones running the classes. For any business to succeed then attitude must filter from the top down and now the bottom up.
- Teamwork skills.
- In addition to the lifelong learning principles, there has been an increasing number of industry credentials added to curricula. It is important to develop the skills needed to satisfy these industry credentials to be more marketable in the workplace and relevant to the needs of the employer.
- Accepting responsibility; desire to manage equitably
- Work environment expectations - I'm surprised at the number of "perks" new graduates expect from their employers (ie casual Fridays, healthy snacks, fun staff activities during work hours). It seems like their definition of professional is different.
- None that I can think of.
- Soft skills in general are most important. Younger generation has trouble communicating face-to-face, etc.
- N/A
- None
- A general appreciation for the normal workplace environment. Ability to get motivated and understanding when to check back with supervisor. Getting the big picture. Identifying their own deltas.
- The importance of being on time and not calling in
- None. It looked thorough
- Manufacturing systems.
- None are missing
- Would help to have the "current framework" on this page in order to see what is "missing". Too many are not prepared for the workforce. They arrive with the expectation that they are owed something without earning it. They believe they are entitled to come and go as they please and they challenge when they receive "coaching" about their work performance or behavior. Too many can neither read nor write at the functional level of an adult in business and this includes college graduates. They expect to be coddled. They expect to be rewarded for expected behaviors such as simply arriving at work on time and coming to work on days they are scheduled.
- Willingness to make mistakes and own them
- None
- NA
- General problem solving

### Appendix 3 – Survey Data (continued)

- I think there is a real issue with young employees understanding it isn't always about them. They lack an understanding that most corporations have structure and process for promoting based on performance and contribution. Many young employees don't understand that and expect to be promoted and receive pay raises just because. They have a hard time understanding real performance is rewarded not just participation. We've done a great disservice to our young people with how we're coddling them and not teaching them to compete and that winning does matter. Not sure how you teach them that but they need to learn it. We are becoming less and less competitive with our workforce. Also loyalty to the organization and ownership are important in evaluating employees. We invest a lot in our staff and give them every incentive to want to stay with the company. This seems to be lost on many young employees.
- Personal accountability and teamwork importance
- Ethics.
- Leadership and appropriate initiative
- Self correction processes: taking corrective steps and responsibility for workplace errors.
- NA
- Vocabulary and technical reading
- Emphasize workplace ethic, critical thinking, integrity
- None all appropriately addressed
- None missing
- Ability to handle personal finances. Just use debit cards and don't understand how to use a checking account, etc.
- The attitude that they want to work and build a career, not just a job here and there. Focusing on areas that they have an interest in and enjoy doing. So many just say they want a job but do not know what they really enjoy doing.
- As these are entry level skills, the ability to be trainable remains a lifelong skill. Entry level workers need to improve their verbal and written skills. Their communication levels have descended to the point of emails and tweets.
- Social justice and culturally competence
- Entrepreneurial reasoning
- Creating useful surveys that focus on details rather than solicit feedback at such high levels (e.g., this survey).
- Accountability
- Respect
- Effective verbal communication, deconstructing problems, presenting arguments, optimistic attitudes.
- An overall good work ethic.

### Appendix 3 – Survey Data (continued)

- Although technology and automation are real threats to jobs in the future, many young people lack human to human skills that will be critical to surviving in the future. The more technical jobs will be automated. Human service jobs will NOT. Coping with "life" and "failure" and other humans are massive skills that are needed. I am not certain this can be addressed in a classroom. But, "human coping and life skills" are needed more in the future NOT less.
- The hospitality/service industry is becoming more competitive with the expansion of AirBandB. Outreach, such as using social media, websites, advertising, community involvement, and marketing will soon be required by everyone, if not already required, working in this industry.
- Importance should be stressed on communication and respect for work place authority
- Ability to speak and write English well (grammar, syntax, vocabulary, diction)
- Respecting superiors and other senior personnel on job sites.
- Communication
- Practical hands on skills.
- Soft skills, we can train them on the knowledge side for many roles, but conflict management, relationships, time management - those are gaps.
- The skills listed are appropriate for the type of work I am involved with.
- Decision-making skills
- How to prioritize workload
- Respect
- This generation lacks motivation and the ability to do anything by themselves and without direction. They have to ask why about everything, which in my field we don't have time to explain ourselves.
- Teamwork skills. Working within a team within the area of their field
- Communications
- Entrepreneurial spirit
- Setting boundaries, proper workplace communications and conversations, use of personal electronic devices while working - i.e. professionalism
- Workplace violence
- None
- Soft Skills, Soft Skills and Soft Skills. Customer Service is a thing of the past.
- N/A
- Ability to work with diverse individuals, ethnically or culturally
- None at time.
- Curiosity - sort of captured in lifelong learning, but not talking about attaining skills but more open- ended.
- I think that you covered them all.
- Knowledge of the political world, both locally and at the state and federal level.

### Appendix 3 – Survey Data (continued)

- None
- Respecting each department as part of the whole company. One department is not more important than the other.
- Technical writing... It has served me very well in my career, but most people don't feel comfortable with it.
- Communication etiquette, i.e. when is it appropriate to call/email/text.
- None
- Mass Casualty
- Basic and more intermediate etiquette lessons
- Being able to accept corrections in the workplace.
- Patience, the ability to co-exist with teammates, accepting supervision, collaboration, an appreciation for diversity in the workplace with respect to what other teammates have to offer, knowing when to learn and when to lead, and humility.
- Intellectual skills including the common sense factor to go hand in hand with the book sense.
- N/A
- None
- Work ethics, dedication, willingness to work and some overtime. Honesty, being accountable, respect, drug free!
- Stress reduction, focused attention, mindfulness
- Job Search Skills: E.g. do not over rely on online job search engines...use relationships and contacts first
- None
- Human Interaction and Relations.
- I don't know if they are missing necessarily. However, I would continue to stress responsibility and work ethic, strong mathematics, reading and comprehension, and verbal and written communication skills.
- Timeliness! When one is expected to be in a certain place at a particular time it means: arriving before set time in order to make sure all is in readiness for whatever task needs to be accomplished. Example: if one is to be ready to work at 9:00 am then one should be in place by 8:50 am so that work can commence at 9:00am, the specified time for work.
- Accountability
- respect
- Listening and asking relevant questions.
- Social Skills Training,
- N/A
- None
- Ability to question why things are done.



### Appendix 3 – Survey Data (continued)

- For an entry level person coming into this organization the skill I see that needs addressing is accepting diversity and embracing it. In the district in which I work, most managers are white male. This adaptive skill of acceptance has been programmed into the minds of new hires. A more diverse workplace and managers is missing. The way our organization is structured and managed one has to be prepared to accept.
- Emotional Intelligence; Cultural Intelligence; Interprofessionalism
- Public speaking and presentation skills; I have colleagues who have been working 30 years or more and are very comfortable with public speaking now, but their presentations are not good (slides with 100% text, no photos, saying exactly what is on the slides). I have mentored young engineers away from these habits, and their presentations have greatly improved over the senior engineers.
- The ability to learn to lead. Leadership is a skill that enhances all organizations at all levels, but is seldom taught.
- Reading, communication and strong work ethic to complete the job correctly
- Nothing at this time
- All Covered
- Soft skills - showing up to work on time, staying off of cell phone except during break, following directions, etc.
- Interacting on a global basis.
- Business acumen
- Interpersonal communication skills
- Increase focus on critical thinking and personal responsibility/accountability.
- Confidence and ability to represent best self. Advanced preparation for interviews, including appropriate dress and documents ready (resume, references, transcripts, etc). Ability to demonstrate customer service skills during the first interview.
- More use of industry software and systems
- Having a holistic approach to their problem solving. Consideration (often via asking for added information from other groups) for the impact their preferred solution may have on other areas in a business.
- Ability to communicate in person, rather than with technology.
- Correctly reading tape measures and other things like that. Being able to read drawings, know what the symbols mean, etc. Common sense needs to make a comeback! Newbies need to not think that everything is "beneath them". Some come in thinking that they shouldn't have to do the low man on the totem pole stuff when everyone else has paid their dues and it's a team effort anyway. When they're like that, they don't function as a team. We never ask of anything that we don't do ourselves, so they need to get over themselves.
- Financial responsibility, Understanding both business and personal finances. Working on human interaction skills. Math and Reading skills are always needed, the better you are in those areas the more opportunities you will have available to you.
- Opportunities for entry level workers

### Appendix 3 – Survey Data (continued)

- Critical thinking, integrity, basic use of technology in business
- Nothing
- Job-Related Work Experience
- Not sure
- Time management
- Environmental Knowledge (the impact of activities on the environment)

### Appendix 3 – Survey Data (continued)

Q6. Please share any additional comments or thoughts you may have about workplace readiness skills.

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- The ability of hands on task. Using tools and ex.
- N/A
- NA
- None
- Soft skills are vital to workplace readiness and being effective in the workplace.
- Teach reliability and will power
- None
- I believe some of the skills are learned through experience, but with more youthful workers there are less people to teach some of those needed skills through modeling and mentorship.
- I think inter-technical skills (can we collaborate using assigned technologies) will be more important than interpersonal. Communications will be distributed and virtual as opposed to in person
- Role modeling
- There is too much emphasis on producing computer skills in schools today. There is almost no hands on learning for the real world. There is too much emphasis on "feelings" in schools and not much on work ethic or effort. No emphasis is made on taking responsibility.
- None
- Many of today's students need more life coaching skills.
- Besides transportation, interpersonal skills are often the thing that impacts obtaining or keeping a job.
- Artificial intelligence, robotics, and automation will replace most of today's jobs.
- None
- In addition to scholarships and college entry successes noted upon HS graduation, give equal recognition to students who have acquired jobs or an apprenticeship
- I think this listing of workplace readiness skills is a great representation of what is needed in the workplace.
- Expectation of high wages for entry level jobs. I am told from employees you will get minimum work for minimum wages.
- N/A
- The programs Virginia has in place on workplace readiness skills is great.
- No

### Appendix 3 – Survey Data (continued)

- Students definitely need to be prepared for dealing with often hostile work environments. Unfortunately, there is little interest in keeping employees because there are too many people waiting in line for a job. Students need to understand that they may need to get experience while always looking for better opportunities.
- N/A
- Since I work with teachers of at risk students, I do not encounter the current workforce and my answers are the hope for the future students I see.
- Young workers cannot count on their employers to "look after them" and their coworkers are more likely to compete with them than to work effectively together. They need to be prepared for the realities of this work environment and prepared to take steps to protect themselves now and in the future.
- My organization has been involved in youth workplace readiness and career exploration for about 15 years. We consistently see that initiative is probably the biggest characteristic lacking in youth today. I personally believe that we have taken away the power for the teacher to recognize and encourage initiative and we have gone overboard in trying to treat everyone the same. The result is a population that is not engaged in solving any problems or trying to figure out solutions. Also, their knowledge is so shallow after trying to memorize facts for so long that they do not seek knowledge as part of finding their way...peer opinion is more important than individual thinking, research, and analysis. Result is a dumbed down society - not good for civilization.
- Knowing when to ask questions and listening to the answers. Not thinking they know everything from day one.
- Consideration of careers not readily recognized in the construction industry, especially inspections and plan reviewers for projects. Recent research by the National Institute for Building Sciences estimates large numbers of positions will need to be filled in the next three to ten years. Link to the report is here: <http://media.iccsafe.org/docs/ICC-NBIS-Future-Of-Code-Officials.pdf>
- Totally lacking! Our youth are coming in and WAITING to be told what to do instead of seeking what to do, using their own skills to increase their value and show that they are a valuable asset to an organization. Schools are teaching children to do only what is asked, do not do more or less than what is asked of you. This is accomplished through homework assignments without allowing or encouraging students to explore topics more due to their need to gain the knowledge administered on SOLs all the while suffocating their creativity! Employers NEED creativity and personality!
- I find that work ethics and maturity seem to be missing. Work is just a job not a career with a future.
- We know what the important skills are, but getting people engaged and responsive to them has been slow in the coming.
- Workplace Readiness Training is vital and very important. Especially with this generation.
- Showing up on time with the willingness to learn is vital.

### Appendix 3 – Survey Data (continued)

- Internships are a must so that real work readiness skills can be gained prior to the initial full-time position within an organization.
- In my experience, I think the people who have the best workplace readiness skills are those who use these skills outside of the workplace, every day. When people can understand the basis of how their belief and personality help develop their skills, it becomes easier to incorporate these skills into the workplace.
- Greater interest in throughput; lessened patient care interest
- I am genuinely concerned about the future of healthcare, the future of nursing... Productivity vs. (true) patient care. As the "seasoned" nurses approach retiring age how do we keep the flame in the lamp of knowledge lit? There appears to be a disconnect with providers (nurses) and our community. Newer nurses want to come in, so their job and go home... But life does not end for our patients at the end of our shift. Where are our future leaders?...
- It's my opinion that if I'm given an entry level employee with the proper attitude, aptitude and a solid base of ethics we can adjust the rest. Most important attributes are a willingness to work hard, continuously learn, and try to be a better professional.
- Soft skills need to be better emphasized in both secondary school and college.
- Not having critical thinking skills in my field can be the difference between going home, or not going home.
- Most are very motivated in my line of work
- Need for next gen Documentation usage.
- Morning training in the work force once you obtained the job
- None
- None
- See previous comment. The state of workforce readiness is abysmal. Years of participation trophies and low (or no) expectations has negatively impacted too many young Americans.
- N/A
- NA
- Personal accountability, ethics, integrity are pretty important and should be stressed.
- NA
- Online learning is not adequate preparing for frontline beginning healthcare provider
- Critical thinking and attention to details. Ability to read documents and understand them. Ability to write clearly and using their hands, in addition to a computer.
- They need to have exposure to different types of careers throughout their schooling. They need to be advised by people that are looking to the needs of the future career fields.
- All entry level workers regardless of age must be open to constantly acquiring new technology skills. You will always have to train and retrain.
- We need supervisors who empowers and engages employees rather than micromanagement them

### Appendix 3 – Survey Data (continued)

- Workplaces are not particularly friendly to people with disabilities. This is a significant part of the population that can and wants to work. How are we preparing people to think, everybody can work?
- The credential test is not relevant in the industry. Most employers have no clue what it is and resulting in the credential holding no merit. Students earning a industry recognized certification is of much more importance like the pesticide certification or BQA.
- I am seeing an entitlement workforce coming into the job market. Minimum skills, wanting to work less hours, not wanted to put in the effort to excel and advance, expecting automatic pay increases without any achievement, and little sense of responsibility.
- None
- Employers share the responsibility
- Continue to focus on real world skills, life skills. If they cannot function well at home and in their personal world - it impacts the work place. "adulging..."
- Respect is not taught in the educational system. It is taught at home. Unfortunately, in today's society many children are not raised in the "Leave it to Beaver" home type of situation.
- Students need to have had a job or been an intern
- People need to be prepared to work hard and pay their dues. Experience is priceless, even if it is in a field in which you don't plan to continue.
- My results may be skewed towards the 5+ people I have hired most recently - part-time staff. The results would be similar but possibly skewed a little for full time staff - which tends to have more experience upon coming on board.
- None
- We are sorely lacking and remiss in preparing our future work force for the challenges of employment and positively impacting our employers
- work with high schools and community colleges on professional characteristics and dispositions, not just academic and technical skills
- Obviously it is difficult to prioritize among these skills, each of which is important and becomes a problem only when it's glaringly deficient. As I considered the needs for the future, I believe the competition for knowledge jobs will become extremely competitive and you can't afford to have a glaring weakness in any of those domains.
- N/A
- Desire to help
- None
- N/A
- Knowledge is the key to getting a position, but interpersonal skills are the key to keeping the position and advancing within an organization.
- Work place skillsets start with Customer Service and ends with Customer Service. It is always about the customer and what they need. Its all about them, not about us!
- N/A

### Appendix 3 – Survey Data (continued)

- We need vocational education! Enough of this 4 year degree being shoved down our throats! Kids get out of college, can't find a job and have a massive loan to repay. Our education system is not working. We need blue collar workers!
- Employers need to provide time and opportunities for continuous professional development.
- Thank you for the opportunity to participate.
- More experiential learning opportunities to help students apply what they are learning and practice their teamwork, work ethic, communication skills, etc. These experiences do not have to come through work with an employer. They may come through team projects or other organization engagement.
- Employees arrive expecting someone to take them by the hand and carry them around until "they" get it on the new employees time table not the employers. It should behoove one to acquaint themselves with skills required and needed by the employer willing to hire them.
- People need to take ownership for their work/non-work. Be accountable for what they did and be open to feedback. Less insecurity in the workplace, more accountability. More pride in work.
- Self-motivation is needed now and forever in workplace
- They should be incorporated into every day learning, perhaps as an ice breaker, but tied to the content. Students are lacking parental guidance, in many instances and need to hone those people skills.
- Today's young adults don't know how to communicate basic skills. Turn Taking, Manners, Thank You Letter's, Social Skills, Team Work. They are fixated on technology--cell phones that they have forgotten how to even introduce themselves to someone properly or to take initiative or to properly facilitate a meeting.
- I think two of the most important things missing today are work ethic and being able to work independently with minimal supervision.
- N/A
- None
- Workers achieve to the level demonstrated by their supervisors.
- In Education it is so important for our teachers and staff to demonstrate these WPR skills as they are role models for the students.
- I would hope to see the organization grow in a way that allows all to have the same opportunities. Someone coming in at an entry level position should have the option to move around in the organization to see it as a whole. Then he/she will be in a position to see where he can grow. This does not have to be an overnight ordeal, but I think it is missing.
- N/A
- Smart kids that can think critically, write well, and communicate effectively, who have a great work ethic, and integrity, will ALWAYS be in high demand in the workplace. The technology will always change. But the kids that have these traits will always be able to adapt to new technology.

### Appendix 3 – Survey Data (continued)

- Most workplaces, there comes a time to use word processing and spreadsheets; I believe a rudimentary course in use of Word, Excel, PowerPoint and Visio could benefit most students, regardless of the course of study they are pursuing.
- I believe that schools should offer training in the skills listed here. This is as important as freshman orientation. It should be offered as a mandatory session in the first semester of the sophomore year.
- Give the students the basic foundation of reading, writing, math and ability to communicate well. Sadly work ethic, etc. is more a personal skill a person has or not
- The utility industry is currently experiencing a loss of and the unavailability of skilled and semi-skilled tradesmen such as electricians, machinists, mechanics, water and wastewater plant operators, etc. Vocational skills seem to have taken a back seat to other more desirable careers.
- Life skills - I believe those that have their lives together at home (finances, structure, etc.) are more likely to succeed in the workplace. When you can't balance a checkbook, pay your bills on time, etc. it effects how you conduct your job.
- Am constantly surprised by applicants/new employees relative lack of basic computer skills.
- New employees must understand the difference between school and work and must possess the basic skills necessary to function in a collaborative, self-directed, constantly changing, global work environment. Specific job requirements can be taught on-the-job.
- With the advent of increases in technology, interpersonal communication skills have cause the most problems. The lack of these basic skills produce many customer service problems.
- Reading, writing and speaking should be near the top today and will only become more important in the future.
- From the college level - helping students receiving a BS in engineering appreciate that their senior capstone project, though good, is not as real or comprehensive as projects will be once they are working in industry. Being the team lead/project manager of a capstone course is not the same as being a project manager in industry!!
- Again, being able to read measurement tools, like a tape measure. You'd be floored by the amount of people who cannot do that anymore (like only 1 in 10 applicants know how to read one and even then, they're not confident). When you need to measure twice and cut once and you didn't know how to read the measurements anyway, you tend to waste a lot of material or scrap a job. Not every career path needs to be pushed to the same classes. PBL learning would be amazing!
- There seems to be a mentality issue, a lot of young people act entitled and expect everything to be handed to them. There are not many young students with a "work hard" mind set, there also seems to be a lack of interest in the trades - where you actually use your hands.
- N/A
- Reading is the most important both job-related and for social resources.
- We teach our IT major the Clifton Strengths Quest to help students understand their strengths and jobs that match.
- One key challenge is impressing on young people that "working" (including getting dirty, and sweating) is not a bad thing



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## Endnotes

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