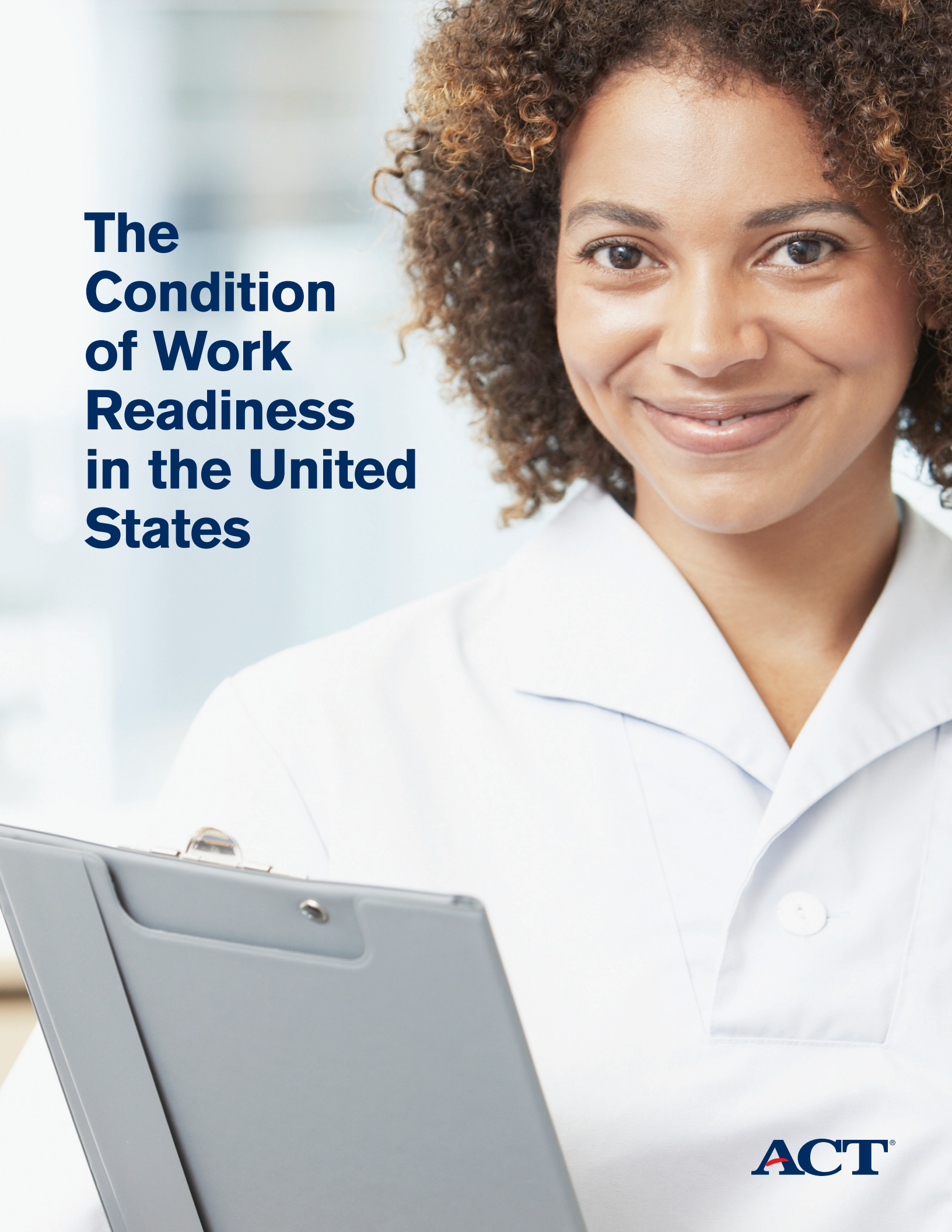
The Condition of Work Readiness in the United States



ACT®

About ACT

ACT is an independent, not-for-profit organization that provides a broad array of assessment, research, information, and program management solutions in the areas of education and workforce development.

Our Mission

Helping people achieve education and workplace success.

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- Diversity
- Leadership
- Empowerment
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- Sustainability

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Executive Summary—The Condition of Work Readiness in the United States

The Condition of Work Readiness in the United States highlights levels of work readiness for various subgroups of an estimated 4 million ACT WorkKeys® examinees in the United States and provides ACT Work Readiness Standards and Benchmarks for targeted occupations over the next 8–10 years.

Data are presented for ACT WorkKeys examinees from 2006–2011 for three cognitive assessments: Reading for Information, Applied Mathematics, and Locating Information. These three skills have been consistently identified as important for success in a broad range of jobs, making them "essential" foundational skills.

Occupational profiles in the ACT JobPro® database were used to determine work readiness benchmarks for three selected groups of targeted occupations (those projected to be in demand, growing, and high paying) and grouped into three education categories (high, middle, and low).

The report investigated the assumption that individuals with a given level of education have the requisite skills for occupations requiring that level of education. A gap analysis was conducted to compare examinees by education group for occupations requiring similar levels of education for entry into employment. "Skills gap" was defined as a gap between the skills needed for a job requiring a given level of education versus those skills possessed by workers with that level of education.

Work Readiness Trends

- For examinees who took the three cognitive ACT WorkKeys assessments between 2006 and 2011, the level of work readiness skills consistently increased with level of education.
- Among examinees with a high level of education, 90% were more likely to qualify for the ACT National Career Readiness Certificate™ at the Silver level or higher, compared to 65% of the individuals with a low level of education and 77% of those with a middle level.
- Significant foundational skills gaps exist between the skills of examinees with either a low or high level of education and the skills needed for jobs requiring a low or high level of education.
- For high-paying target occupations requiring a low or high level of education, the majority of examinees with a low or high level of education could not demonstrate the required skill level for locating information. This skill involves the ability to locate, synthesize, and use information from workplace graphics such as charts, graphs, tables, forms, flowcharts, diagrams, floor plans, maps, and instrument gauges.

continued

- Less than half (45%) of the examinees with a high level of education met the Locating Information skill requirements for 4 of the 5 occupations with a large number of openings and for 3 of the 5 highest-paying occupations requiring a high level of education.
- Only 19% of the examinees with a low level of education met or exceeded the Locating Information skill requirements for 4 of the 5 highest-paying occupations requiring a low level of education.

Key Observations

1. **A higher level of education does not always guarantee work readiness.**
   For the data examined, a work readiness skills gap is apparent for individuals with high education levels when compared to target occupations requiring a high level of education. While individuals in the high-education group show greater levels of work readiness skills, the data suggest that these skills aren't always enough to meet the work readiness demands of the targeted occupations requiring a high level of education. The most apparent gaps occur in Locating Information.
2. **There is no significant gap between the skills needed for middle level education jobs and the skills possessed by middle level education examinees.**
   This finding suggests that, for the targeted occupations examined, middle education aligns with the work readiness requirements. Further research is needed to understand differences in the quality versus the quantity of workers needed for jobs requiring some level of education and training post–high school.
3. **Education level is not always aligned with work readiness levels.**
   The findings support the position of the ACT report *A Better Measure of Skills Gaps*: that caution should be used in considering indirect measures of skills as a substitute for actual skill levels. While the data examined in this report show higher work readiness skills for US examinees as their education level increases, significant skills gaps are apparent between the skills possessed by examinees with either a low or high level of education and the skills needed for targeted occupations requiring a low or high level of education. This implies that the required education level for these occupations does not fully equip individuals with the work readiness skills those jobs demand.

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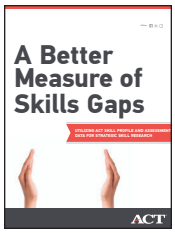
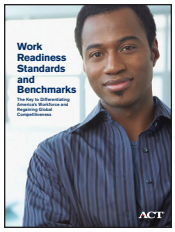
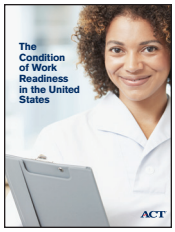






Overview

ACT has issued a series of reports concerning the role of skills in today's job market and the growing importance they play in predicting workplace success. The first report, *A Better Measure of Skills Gaps*[1], proposed a new approach to both defining and measuring "skills gaps" that uses a direct measure of skills as opposed to assuming skills levels based on educational attainment.

In the second report, *Work Readiness Standards and Benchmarks*, ACT defined "work readiness" and articulated a method for determining empirically driven ACT Work Ready Standards and Benchmarks[2]. Standards and benchmarks for workplace success provide a more complete picture of the factors important for individuals to be prepared for success in the workforce.

This report—*The Condition of Work Readiness in the United States*—highlights the levels of work readiness for various subgroups of an estimated 4 million ACT WorkKeys examinees in the United States and provides ACT Work Ready Standards and Benchmarks for targeted occupations over the next 8–10 years.

What Is Work Readiness?

A "work ready" individual possesses the foundational skills needed to be minimally qualified for a specific occupation as determined through a job analysis or occupational profile.

Work readiness skills are occupation specific and vary both in importance and level for different occupations. These skills depend on the critical tasks identified via a job analysis or an occupational profile—an analysis that identifies the knowledge, skills, and behaviors directly related to performance on the job. Work readiness skills provide the basis for work readiness standards and can be used to develop curriculum and training programs for individuals seeking to acquire them.

Since 1993, ACT has conducted more than 19,000 job analyses for occupations across a diverse array of industries and occupations.[3] This report highlights the work readiness standards for selected groups of targeted occupations over the next 8–10 years. A full listing of work readiness standards and benchmarks for approximately 1,100 specific occupations can be found at: **http://profiles.keytrain.com/profile_search/**.

Work Readiness in the United States

The following data represent ACT WorkKeys examinees in the United States from 2006–2011. Most examinee data are presented in aggregate form over the 2006–2011 time period. Subgroups of examinees by race/ethnicity are presented in aggregate form for the 2010–2011 time period.[4] The purpose of aggregated data is to encourage a focus on trends, not year-to-year changes, which can represent normal—even expected—fluctuations in data. Studying trend lines—rather than data from a single year—offers more insight into what is happening in a region, state, or the nation.

Data are presented for three ACT WorkKeys cognitive assessments: Reading for Information, Applied Mathematics, and Locating Information. These three skills have been consistently identified as important for success in a broad range of jobs, making them "essential" foundational skills.[5] Additional data for work readiness standards for other foundational ACT WorkKeys skills assessments can be found at: **http://profiles.keytrain.com/profile_search/**.

Scores for each of the ACT WorkKeys cognitive assessments are independent of each other. Overall scores are reported in "levels," with a range from a low score of 3 to a high score of 7 for Applied Mathematics and Reading for Information, and from 3 to 6 for Locating Information. Scores for individuals who do not achieve the minimum (Level 3) are reported as "0." In each skill area, Level 3 is set at the perceived lowest level that employers value for their jobs. Individuals scoring below a Level 3 are considered not to have the necessary level of skill for any job that requires that skill area.

In addition to cognitive skills, a job analysis may also identify personality characteristics and attitudes that directly relate to performance on the job. While the work readiness standards currently presented include only cognitive skills, it is equally important to measure and define the personality characteristics important to success in a job or career. ACT's personality assessment, ACT WorkKeys Talent, is designed to measure the attitudes and behavioral characteristics that may affect an individual's ability to perform successfully in a career.

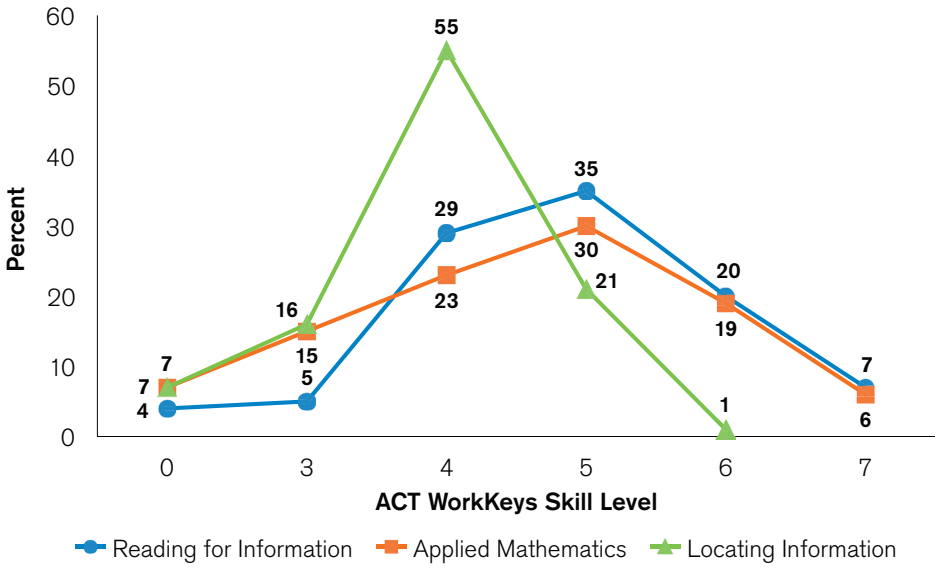
Ultimately, without the necessary knowledge for an occupation (usually gained through academic degrees, occupational certificates, and workforce certifications), most individuals would not be considered fully qualified to enter a job or able to successfully perform job duties. Professional standards for certification and licensure, programs of study in education, and training programs vary significantly by occupation, educational institution, and state and are outside the scope of this report.

All Examinees

From 2006 to 2011, an estimated 3,831,618 examinees took ACT WorkKeys Reading for Information, 3,826,766 took Applied Mathematics, and 2,674,974 took Locating Information.

The data presented in Figure 1 show the distribution of scores for each of these groups. Figure 2 shows the level of ACT National Career Readiness Certificate (ACT NCRC™) achieved by examinees who took all three assessments.

Figure 1. Percent of All ACT WorkKeys Examinees Meeting Work Readiness Skill Levels (2006–2011)



Proportionally fewer examinees achieved the highest skill level for Locating Information (1%) compared to Reading for Information (7%) and Applied Mathematics (6%).

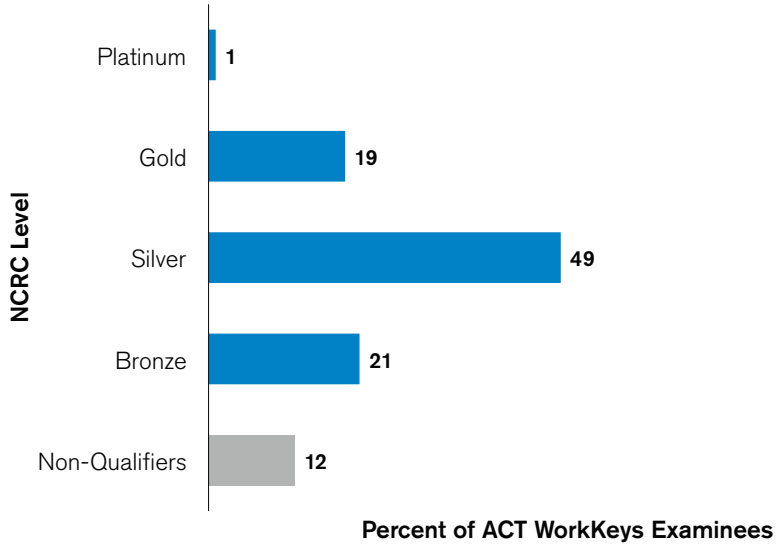
Some of the most apparent skill gaps identified in this report are in Locating Information, a skill that measures the ability to locate, synthesize, and use information from workplace graphics such as charts, graphs, tables, forms, flowcharts, diagrams, floor plans, maps, and instrument gauges.

Note: In this report, totals may not sum to 100% due to rounding.

Three ACT WorkKeys cognitive assessments—Reading for Information, Locating Information, and Applied Mathematics—form the basis of the NCRC, which certifies essential foundational skills that have been consistently identified as important for success in a broad range of jobs.[6]

The NCRC level is determined by the lowest score an individual achieves on Applied Mathematics, Reading for Information, and Locating Information. For example, achieving minimum scores of Level 3 on the three assessments qualifies an individual for a Bronze NCRC; minimum scores of Level 4 qualify for a Silver NCRC; minimum scores of Level 5 qualify for a Gold NCRC; and individuals achieving a minimum of Level 6 qualify for a Platinum NCRC.

Figure 2. Percent of NCRC Qualifiers by NCRC Level (2006–2011)



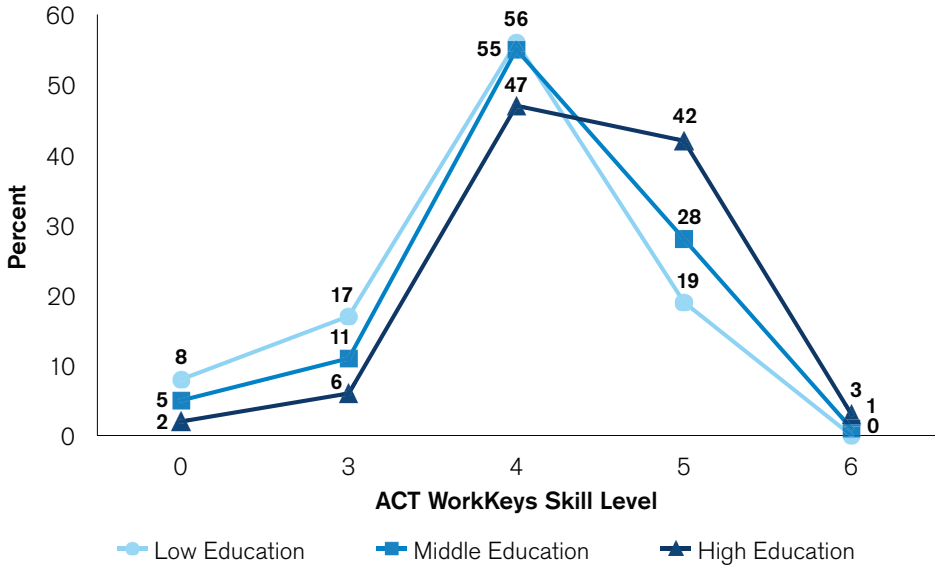
An estimated 2,393,697 examinees took all three ACT WorkKeys assessments required for the NCRC between 2006 and 2011.

Of these examinees, 69% (n = 1,619,329) would have qualified for the NCRC at a Silver level or higher; 12% (n = 276,095) would not have qualified for the NCRC.

Examinees by Education Group

Segmenting examinees by their highest level of education provides additional insight about trends in work readiness skills. ACT WorkKeys examinees were grouped by low, middle, and high education.[7] Data for these groups are presented below.

Figure 3. Percent of ACT WorkKeys Examinees by Locating Information Skill Levels and Education Group (2006–2011)



For examinees who took the three ACT WorkKeys assessments required for the NCRC between 2006 and 2011, the level of work readiness skills consistently increased with level of education.

The largest difference in skill levels between education groups was for Locating Information Level 5 and Reading for Information Level 7 (23% difference between low- and high-education examinees).

Of the three types of work readiness skills, Locating Information had the lowest share of examinees scoring at the highest skill level for all three education groups.

Figure 4. Percent of ACT WorkKeys Examinees by Reading for Information Skill Levels and Education Group (2006–2011)

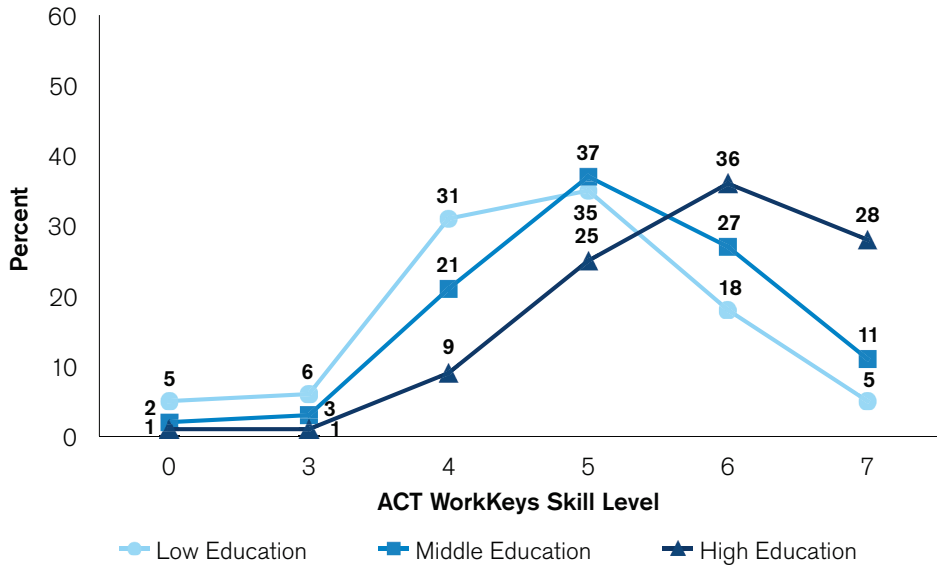
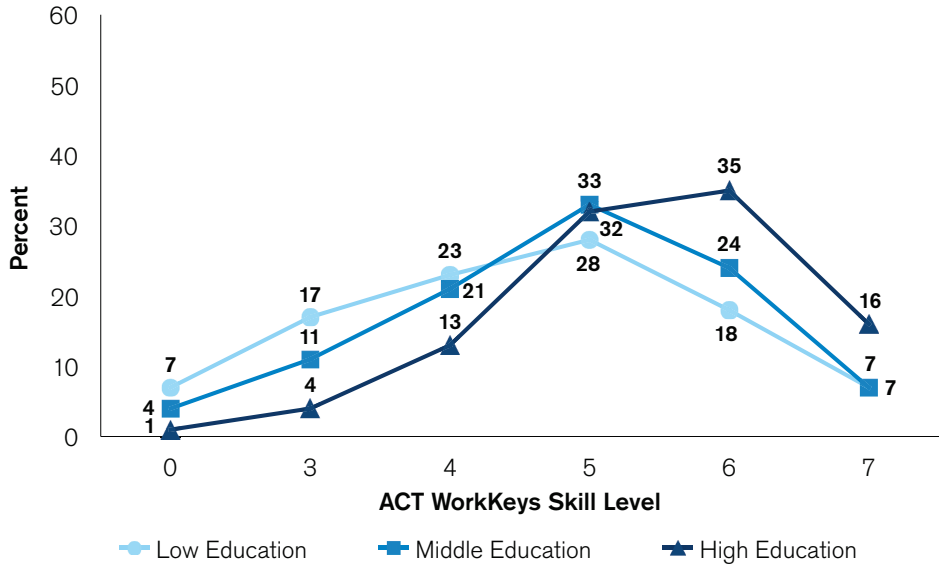
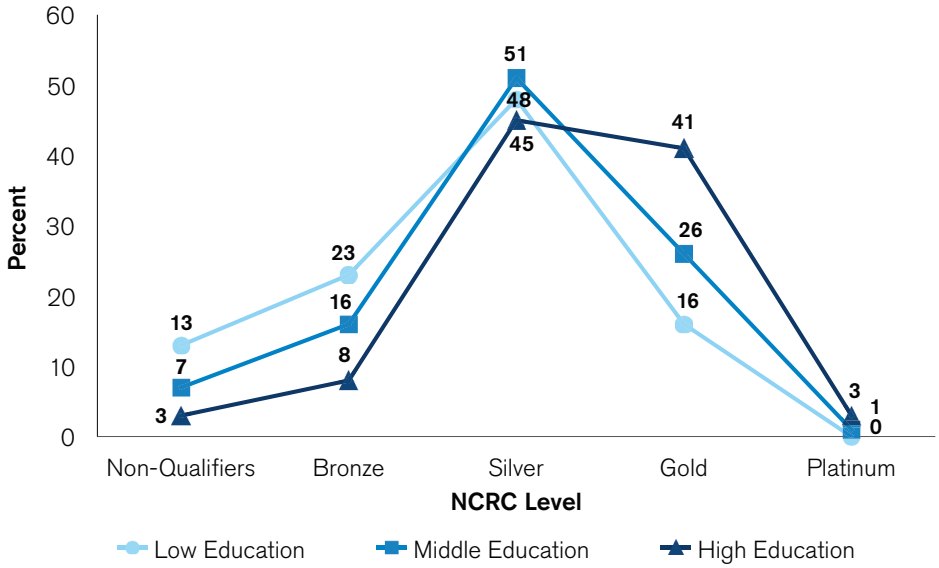


Figure 5. Percent of ACT WorkKeys Examinees by Applied Mathematics Skill Levels and Education Group (2006–2011)



For examinees who took the three ACT WorkKeys assessments required for the NCRC between 2006 and 2011, NCRC levels consistently increased with level of education. Individuals with a lower level of education were less likely to qualify for the NCRC, compared to examinees with a middle or high level of education. For examinees in the low education group, 13% (n = 198,470) did not qualify for a certificate due to scoring below Level 3 on at least one of the three assessments.

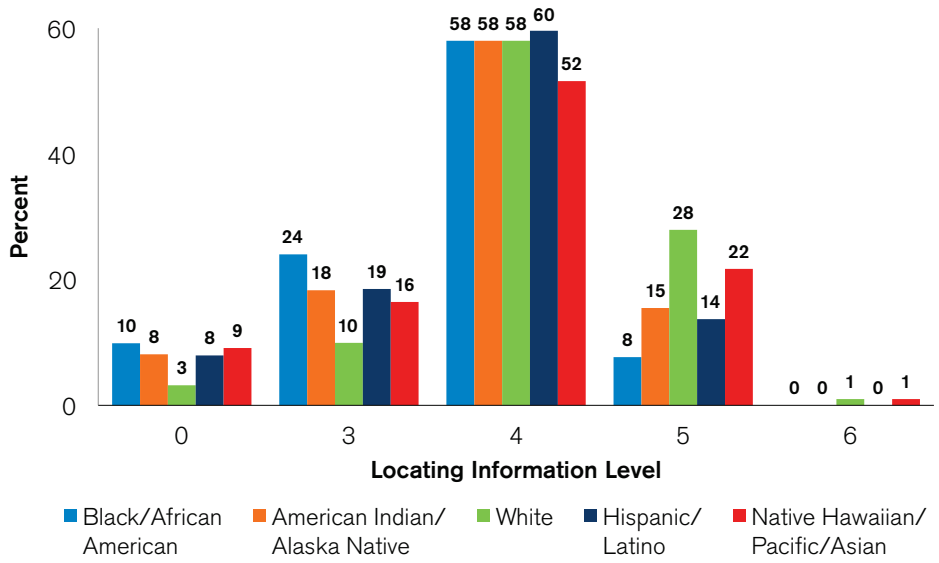
Figure 6. Percent of NCRC Qualifiers by NCRC Level and Education Group (2006–2011)



Examinees with a high level of education (90%) were more likely to qualify for the NCRC at a Silver level or higher, compared to individuals with a low (65%) or middle (77%) level of education.

Examinees by Race/Ethnicity

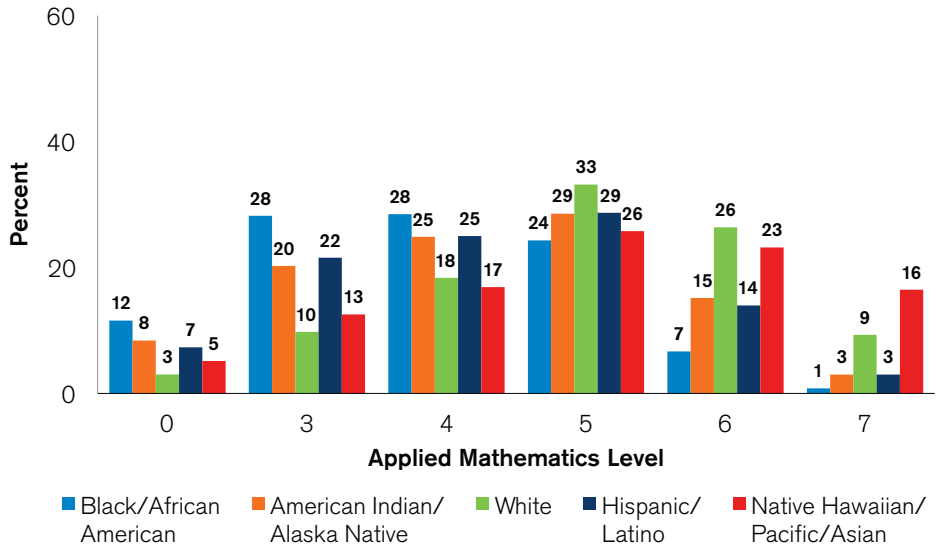
Figure 7. Percent of ACT WorkKeys Examinees Meeting Work Readiness Skill Levels by Race/Ethnicity—Locating Information (2010–2011)



Of the 854,328 examinees who took Locating Information between 2010 and 2011, 58% (n = 494,795) were White.

The share of examinees who scored at Levels 4–6 on Locating Information are: White (87%), American Indian/Alaska Native (74%), Hispanic/Latino (74%), Native Hawaiian/ Pacific/Asian (74%), and Black/African American (66%).

Figure 8. Percent of ACT WorkKeys Examinees Meeting Work Readiness Skill Levels by Race/Ethnicity—Applied Mathematics (2010–2011)



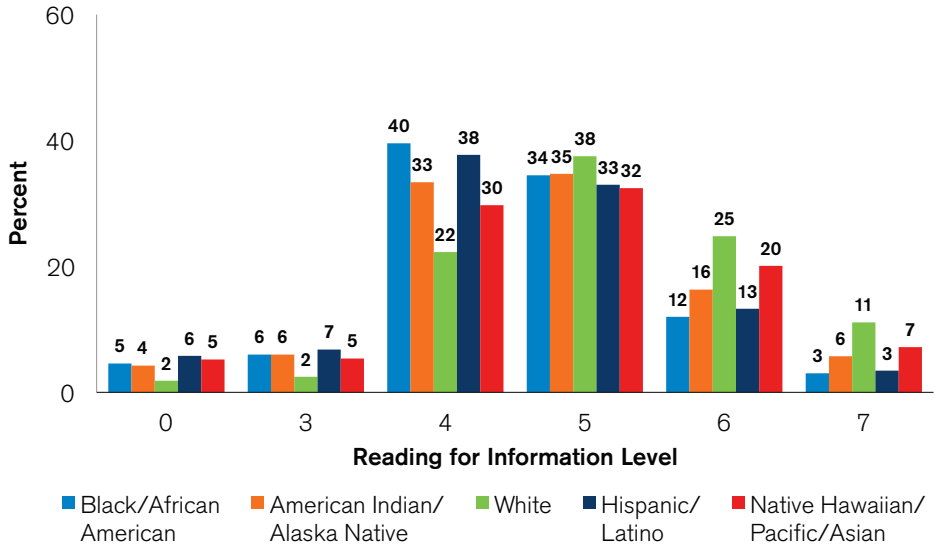
An estimated 1,012,398 examinees took Applied Mathematics between 2010 and 2011.

The share of examinees who scored at Levels 4–7 on Applied Mathematics are: White (87%), Native Hawaiian/ Pacific/Asian (82%), American Indian/Alaska Native (71%), Hispanic/Latino (71%), and Black/African American (60%).

Between 2010 and 2011, the two largest race/ethnic groups of Reading for Information examinees were White (57%, n = 494,795) and Black/African American (24%, n = 239,036).

The share of examinees who scored at Levels 4–7 on Reading for Information are: White (96%), American Indian/Alaska Native (90%), Native Hawaiian/Pacific/Asian (89%), Black/African American (89%), and Hispanic/Latino (87%).

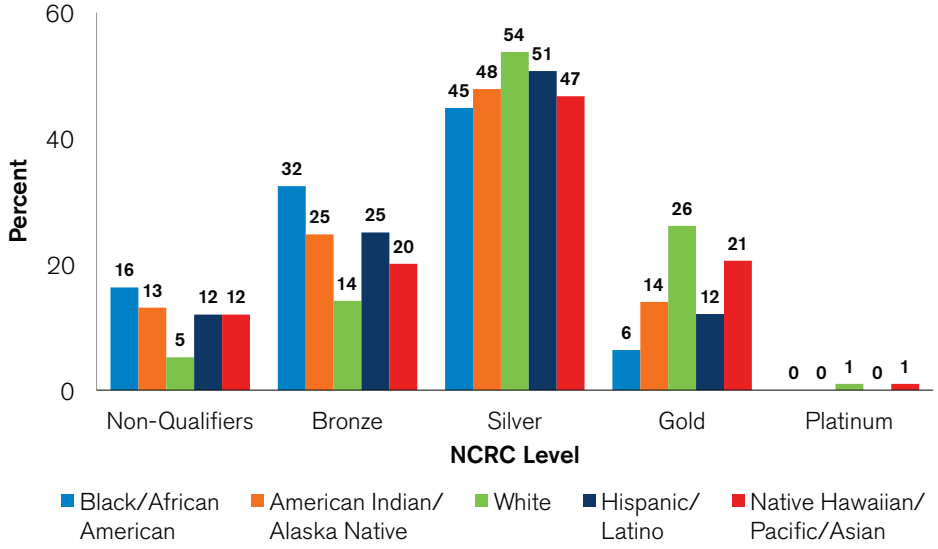
Figure 9. Percent of ACT WorkKeys Examinees Meeting Work Readiness Skill Levels by Race/Ethnicity—Reading for Information (2010–2011)



Between 2010 and 2011, a higher share of White examinees qualified for the NCRC, compared to examinees of other racial/ethnic groups (95%, n = 444,898).

Between 2010 and 2011, the share of examinees who qualified for the NCRC are: White (95%), Hispanic/Latino (88%), Native Hawaiian/Pacific/Asian (88%), American Indian/Alaska Native (87%), and Black/African American (84%).

Figure 10. NCRC Qualifiers—Race/Ethnicity (2010–2011)



Work Readiness Benchmarks and Gap Analysis for Top Jobs

Applying the methodology proposed in *Work Readiness Standards and Benchmarks*, occupational profiles in the ACT JobPro database were used to determine work readiness benchmarks for specific occupations in the United States.[8]

Although the ACT JobPro database contains work readiness benchmarks for more than 1,100 occupations, this report highlights the skill levels needed for three selected groups of targeted occupations. The purpose was to provide individuals with a snapshot of the skill requirements for in-demand, growing, and high-paying occupations that require varying levels of education and training. Jobs were analyzed using national long-term occupational projections (for the 2010–2020 time period) from the US Bureau of Labor Statistics.[9]

Targeted groups were developed by selecting occupations that were projected to have: **(1) higher-than-average employment growth**, **(2) higher-than-average openings**, or **(3) higher-than-average median wages** over the long-term time period. Only job profiles conducted in the most recent five years were used for analysis, because tasks and skill sets are assumed to change over time for many occupations.

Occupations within each of the three targeted groups were then segmented by low, middle, and high education, based on the US Bureau of Labor Statistics' Typical Level of Education Needed for Entry Employment.[10]

A gap analysis was conducted to compare examinees by education group for occupations requiring similar levels of education for entry into employment. "Skills gap" was defined as a gap between the skills needed for a job requiring a given level of education versus those skills possessed by workers for a comparable level of education.[11] Caution must be used in interpreting skills gaps from aggregate data. While trends in group differences in skills gaps can provide additional information to education and workforce stakeholders, work readiness benchmarks are intended for use by individuals to compare their skill levels against specific occupations.

Table 1. Education Groups for Targeted Occupations

Typical Level of Education/ Experience Required
High Education
Doctoral or Professional Degree
Master's Degree
Bachelor's Degree
Middle Education
Associate's Degree
Postsecondary Non-Degree Award
Low Education
Some College, No Degree
High School Diploma or Equivalent
Less than High School

Fastest-Growing Occupations

Top 15 Fastest-Growing Occupations

The average growth rate for occupations in the United States between 2010 and 2020 is projected to be 12%. Skill requirements for fast-growing occupations provide insight into the types of skills that are increasing in importance both within and across industry sectors.

Table 2. Work Readiness Benchmarks for the Fastest-Growing Occupations by Education Group (2010–2020)

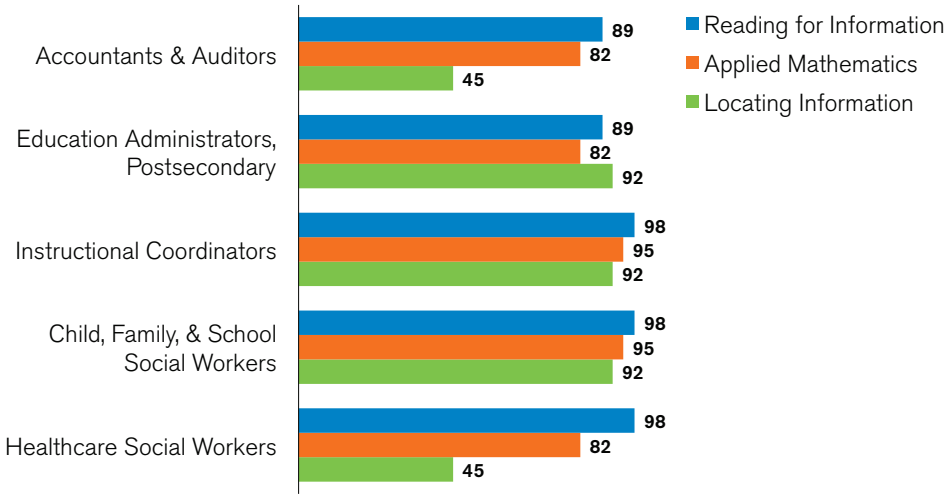
Education Group	SOC Code	Occupation	Reading for Information (Range 3–7)	Applied Mathematics (Range 3–7)	Locating Information (Range 3–6)	Percent Change (2010–2020)
			Median Entry Skill Level			
High-Education Occupations	21-1022	Healthcare Social Workers	4	5	5	34%
	21-1021	Child, Family, & School Social Workers	4	4	4	20%
	25-9031	Instructional Coordinators	4	4	4	19%
	11-9033	Education Administrators, Postsecondary	5	5	4	19%
	13-2011	Accountants & Auditors	5	5	5	16%
Middle-Education Occupations	29-2041	Emergency Medical Technicians & Paramedics	5	3	4	33%
	29-2061	Licensed Practical & Licensed Vocational Nurses	5	4	4	22%
	29-2071	Medical Records & Health Information Technicians	4	3	4	21%
	31-1012	Nursing Aides, Orderlies, & Attendants	4	3	4	20%
	19-4099	Life, Physical, & Social Science Technicians	4	4	4	12%
Low-Education Occupations	47-3015	Helpers—Pipelayers, Plumbers, Pipefitters, & Steamfitters	5	6	4	45%
	43-6013	Medical Secretaries	4	4	4	41%
	47-2152	Plumbers, Pipefitters, & Steamfitters	4	5	4	26%
	43-4171	Receptionists & Information Clerks	4	3	4	24%
	47-2111	Electricians	5	5	5	23%

The results indicate that, across education groups, Level 4 is the lowest level of Locating Information and Reading for Information skills needed for fast-growing jobs. Additionally, all of the high-education, fast-growing occupations require at least Level 4 for all three foundational skills.

Fastest-Growing Occupations

A skills gap analysis for the 15 fastest-growing occupations by education group appears below. Overall, there were few skill gaps between US examinees and fast-growing occupations across all three education groups.

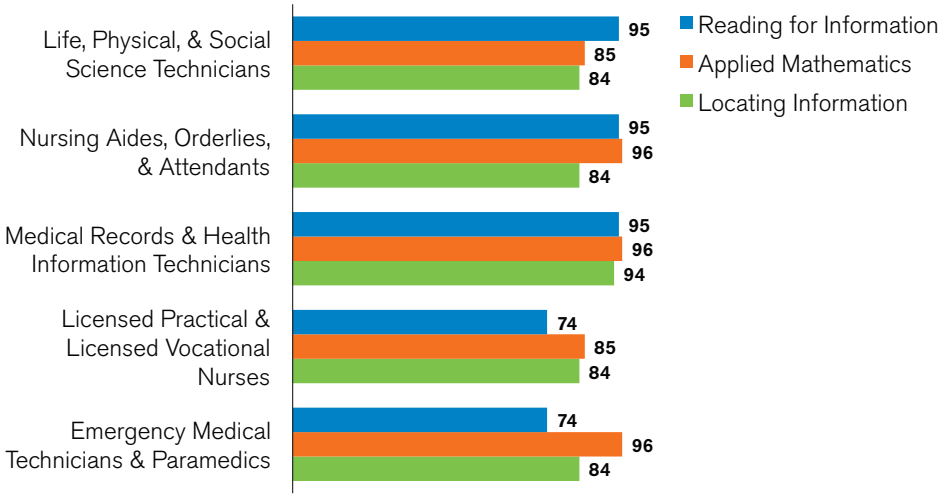
Figure 11. Gap Analysis for Fastest-Growing Occupations–High-Education Group



Less than half (45%) of examinees with a high level of educational attainment met or exceeded the Locating Information skill benchmarks for Accountants & Auditors and Healthcare Social Workers.

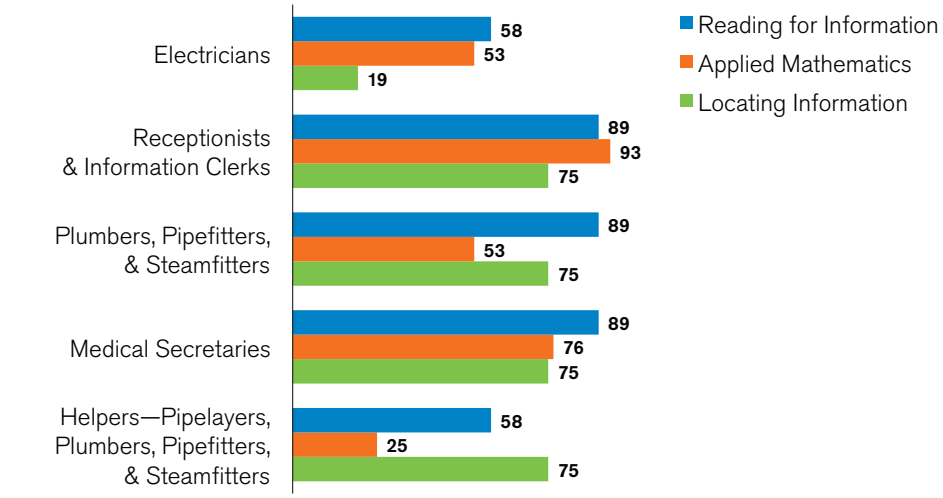
Fastest-Growing Occupations

Figure 12. Gap Analysis for Fastest-Growing Occupations—Middle-Education Group



Three-quarters of examinees with a middle level of educational attainment met or exceeded the Reading for Information skill requirements for Licensed Practical & Licensed Vocational Nurses and Emergency Medical Technicians & Paramedics.

Figure 13. Gap Analysis for Fastest-Growing Occupations—Low-Education Group



Less than one-fifth of US examinees with a low level of educational attainment met or exceeded the Locating Information skill requirements for Electricians, while only one-fourth met the Applied Mathematics skill requirements for Helpers—Pipelayers, Plumbers, Pipefitters, & Steamfitters.

Occupations with the Most Openings

Top 15 Occupations with the Most Openings

The top 15 occupations with the most openings represent 17%—or more than 9.4 million—of the total number of projected openings due to both replacements and growth in the United States between 2010 and 2020. Skill requirements for such occupations give individuals an idea of the level of skills needed for jobs that are likely to have openings in their state or region.

Table 3. Work Readiness Benchmarks for Occupations with the Most Openings by Education Group (2010–2020)

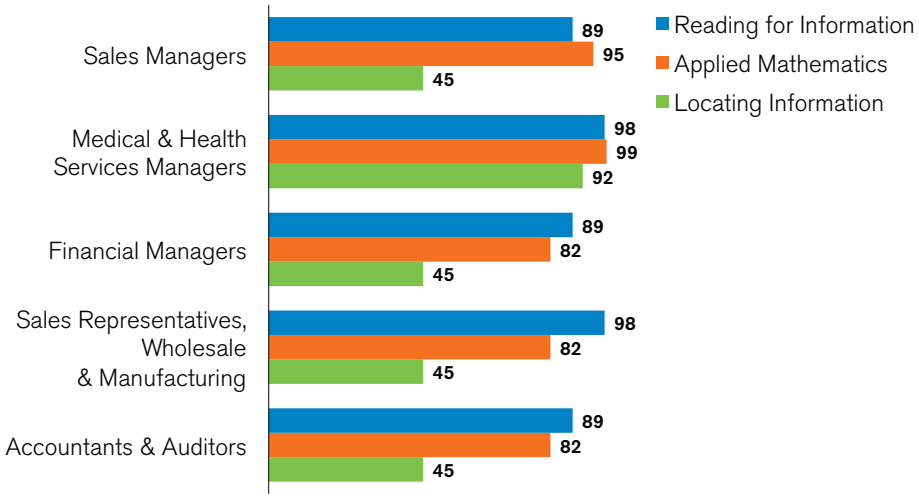
Education Group	SOC Code	Occupation	Reading for Information (Range 3–7)	Applied Mathematics (Range 3–7)	Locating Information (Range 3–6)	Total Openings (2010–2020)
			Median Entry Skill Level			
High-Education Occupations	13-2011	Accountants & Auditors	5	5	5	452,100
	41-4011	Sales Representatives, Wholesale & Manufacturing	4	5	5	159,700
	11-3031	Financial Managers	5	5	5	142,800
	11-9111	Medical & Health Services Managers	4	3	4	141,900
	11-2022	Sales Managers	5	4	5	139,700
Middle-Education Occupations	29-1111	Registered Nurses	5	4	4	1,207,400
	31-1012	Nursing Aides, Orderlies, & Attendants	4	3	4	496,100
	11-1021	General & Operations Managers	5	5	4	410,100
	29-2061	Licensed Practical & Licensed Vocational Nurses	5	4	4	369,200
	49-9021	Heating, Air Conditioning, & Refrigeration Mechanics	4	4	4	137,600
Low-Education Occupations	41-2031	Retail Salespersons	3	4	4	1,958,700
	43-9061	Office Clerks, General	4	4	4	1,011,500
	53-7062	Laborers & Freight, Stock, & Material Movers	3	3	4	980,200
	43-4051	Customer Service Representatives	4	4	4	959,600
	31-1011	Home Health Aides	3	3	3	837,500

The majority of low-education occupations with the most openings typically require skills at Level 3 or 4. The majority of high-education occupations with the most openings require skills at Level 5.

Occupations with the Most Openings

A skills gap analysis for the top 15 occupations with the most openings, which is provided below, shows a Locating Information skills gap for several of the jobs that require a high level of educational attainment.

Figure 14. Gap Analysis for Occupations with the Most Openings—High-Education Group



For occupations with the most openings that require a high level of educational attainment, the largest skills gap is for Locating Information.

Less than half (45%) of US examinees with a high level of educational attainment met the Locating Information skill requirements for four of the five occupations with the most openings that require a similar level of education.

Occupations with the Most Openings

Figure 15. Gap Analysis for Occupations with the Most Openings—Middle-Education Group

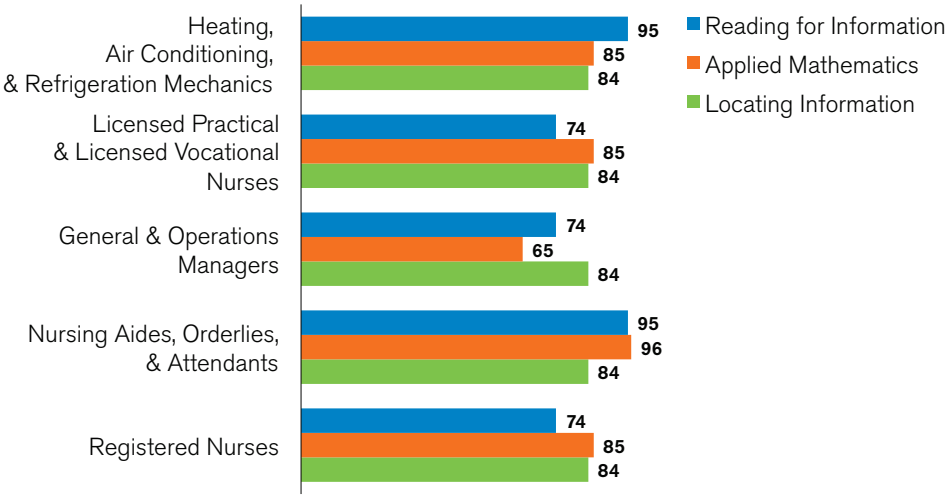
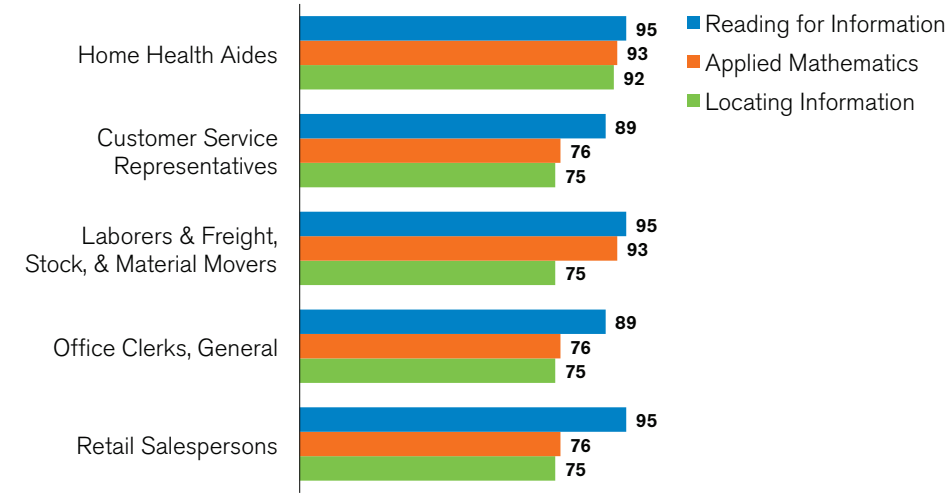


Figure 16. Gap Analysis for Occupations with the Most Openings—Low-Education Group



Three-quarters of examinees with a low level of educational attainment met or exceeded the Locating Information skill requirements for four of the five occupations with the most openings that require a similar level of education.

Highest-Paying Occupations

Top 15 Highest-Paying Occupations

The estimated median annual wage across all occupations in 2010 was $33,840. Across the top 15 highest-paying occupations listed below, median wages range from $46,930 for Tool & Die Makers up to $165,080 for Chief Executives. Understanding skill trends for higher-paying occupations can assist individuals seeking to progress toward jobs that provide family-sustaining wages.

Table 4. Work Readiness Benchmarks for the Highest-Paying Occupations by Education Group (2010–2020)

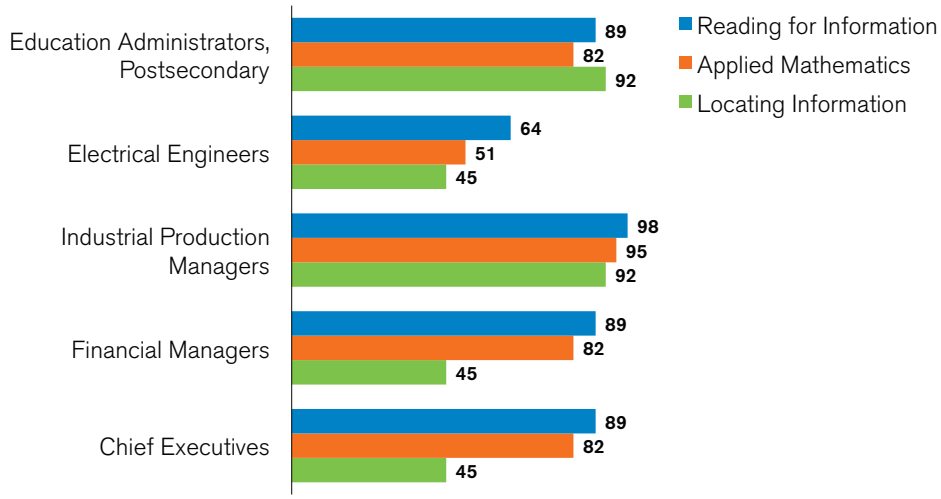
Education Group	SOC Code	Occupation	Reading for Information (Range 3–7)	Applied Mathematics (Range 3–7)	Locating Information (Range 3–6)	Median Annual Wage
			Median Entry Skill Level			
High-Education Occupations	11-1011	Chief Executives	5	5	5	$165,080
	11-3031	Financial Managers	5	5	5	$103,910
	11-3051	Industrial Production Managers	4	4	4	$87,160
	17-2071	Electrical Engineers	6	6	5	$84,540
	11-9033	Education Administrators, Postsecondary	5	5	4	$83,710
Middle-Education Occupations	49-2095	Electrical & Electronics Repairers, Powerhouse & Relay	4	4	4	$65,230
	17-3029	Engineering Technicians, Except Drafters, All Other	4	4	4	$58,020
	17-3023	Electrical & Electronics Engineering Technicians	5	5	4	$56,040
	49-3011	Aircraft Mechanics and Service Technicians	5	5	5	$53,420
	51-1011	First-Line Supervisors of Production & Operating Workers	4	4	4	$53,090
Low-Education Occupations	11-3071	Transportation, Storage, & Distribution Managers	5	5	5	$80,210
	49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	5	4	5	$59,150
	47-1011	First-Line Supervisors of Construction Trades Workers	5	4	5	$58,680
	49-9051	Electrical Power-Line Installers & Repairers	4	4	4	$58,030
	51-4111	Tool & Die Makers	4	5	5	$46,930

Across education groups, Level 4 is the lowest level of foundational skills needed for the highest-paying jobs.

Highest-Paying Occupations

A skills gap analysis for the top 15 highest-paying occupations shows a Locating Information skills gap for several of the jobs that require a high level of educational attainment. There are also gaps in all three ACT WorkKeys skills for jobs that require a low level of education.

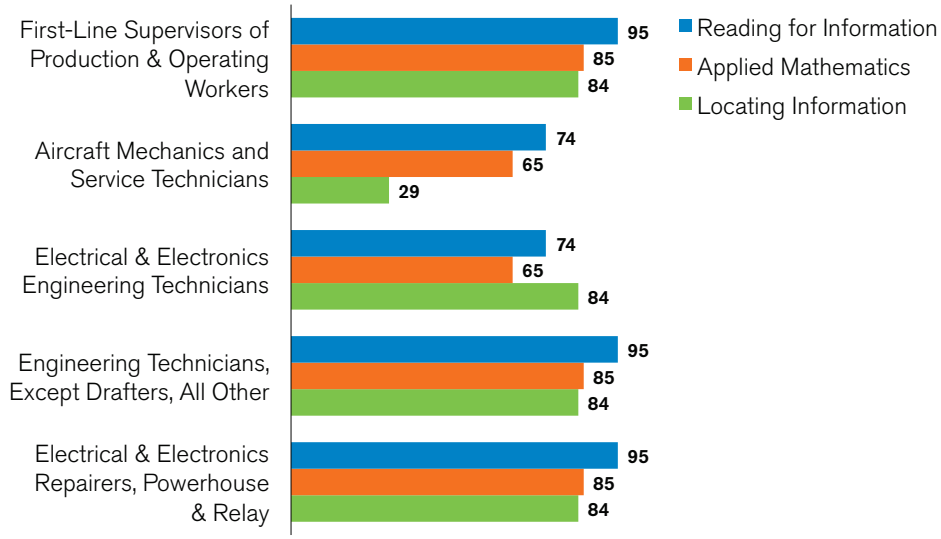
Figure 17. Gap Analysis for Highest-Paying Occupations—High-Education Group



Percent of Examinees Who Met or Exceeded Skill Requirements

Less than half (45%) of US examinees with a high level of educational attainment met the Locating Information skill requirements for three of the five highest-paying occupations that require a similar level of education.

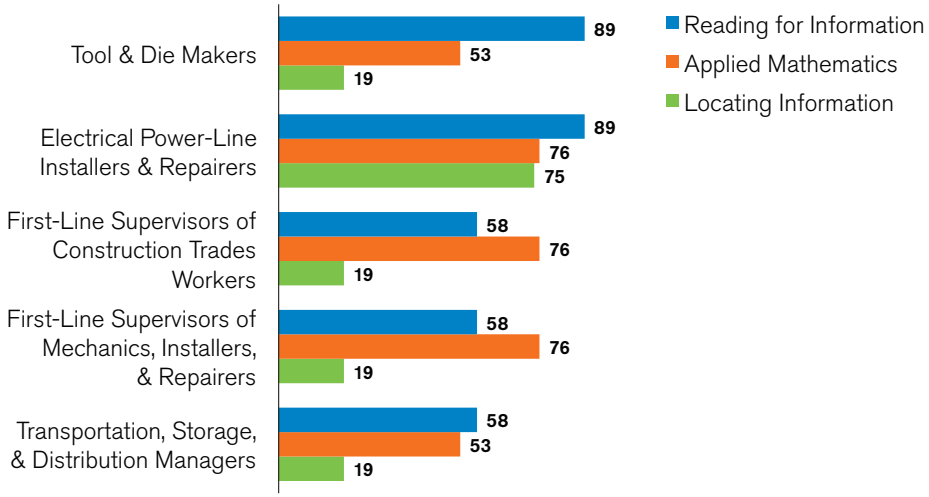
Figure 18. Gap Analysis for Highest-Paying Occupations—Middle-Education Group



Percent of Examinees Who Met or Exceeded Skill Requirements

Highest-Paying Occupations

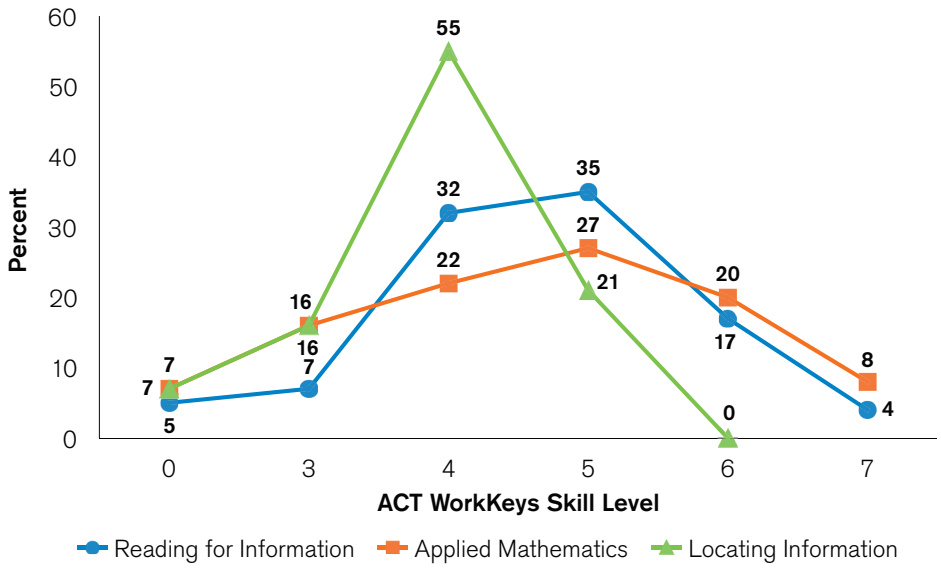
Figure 19. Gap Analysis for Highest-Paying Occupations—Low-Education Group



A small percentage (19%) of US examinees with a low level of educational attainment met or exceeded the Locating Information skill requirements for four of the five highest-paying occupations that require a similar level of education.

Work Readiness of High School Examinees

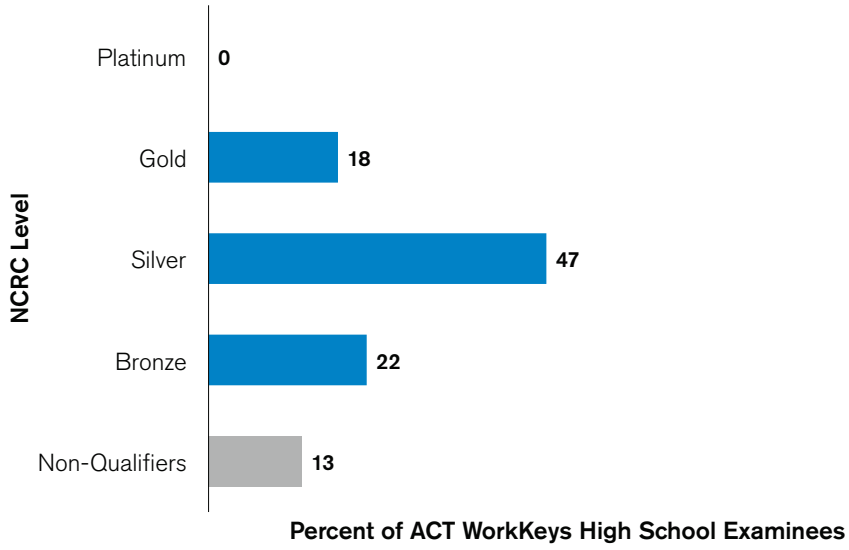
Figure 20. Percent of ACT WorkKeys High School Examinees Meeting Work Readiness Skill Levels (2006–2011)



More than 1.8 million high school examinees took one of the three foundational ACT WorkKeys assessments between 2006 and 2011.

Similar to the total population, a smaller share of high school examinees scored at the highest skill level for Locating Information compared to the other two skill areas.

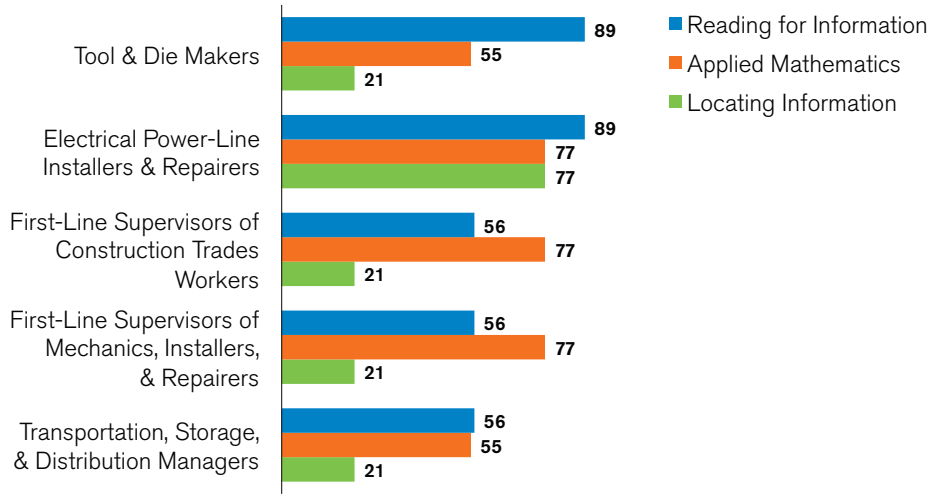
Figure 21. Percent of High School NCRC Qualifiers by NCRC Level (2006–2011)



Of the high school NCRC-eligible examinees between 2006 and 2011, only 13% (n = 102,383) did not qualify for a certificate, while 65% (n = 520,526) scored at a Silver level or higher.

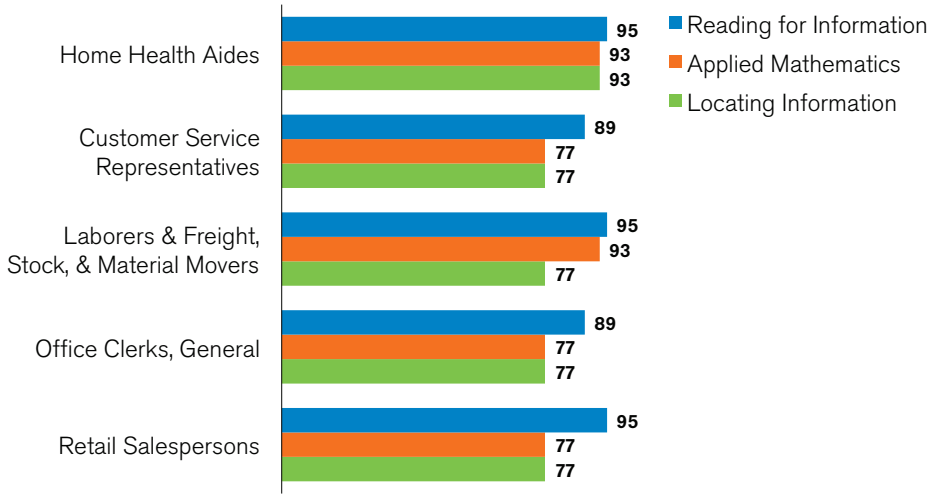
A gap analysis of US high school examinees for occupations requiring little education beyond high school for entry into employment revealed significant skills gaps for this population for high-paying occupations.

Figure 22. High School Examinee Gap Analysis for Highest-Paying Occupations—Low-Education Group



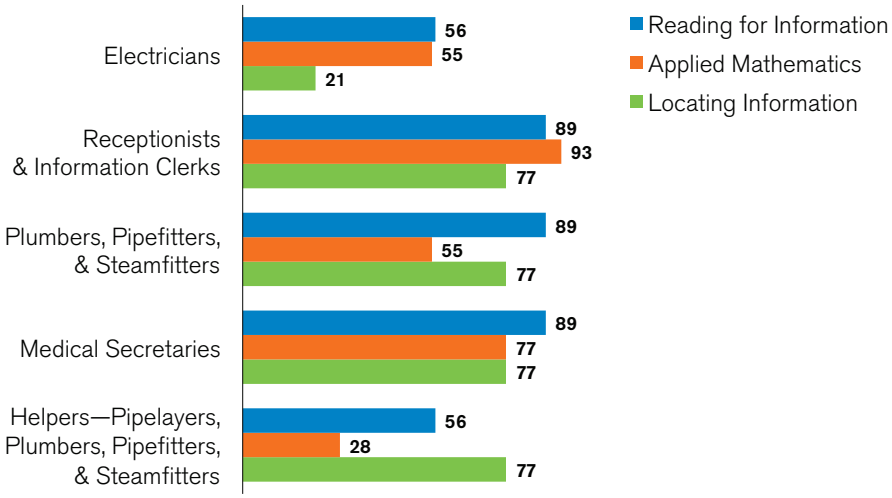
Less than a quarter (21%) of the high school examinees met or exceeded the Locating Information skill requirements for four of the five highest-paying occupations that require a low level of educational attainment. Roughly half (55%) of high school examinees met the Applied Mathematics skill requirements for Tool & Die Makers and Transportation, Storage, & Distribution Managers.

Figure 23. High School Examinee Gap Analysis for Occupations with the Most Openings—Low-Education Group



Three-quarters of the high school examinees met or exceeded the Locating Information skill requirements for four of the five occupations with the most openings that require a low level of educational attainment.

Figure 24. High School Examinee Gap Analysis for Fastest-Growing Occupations—Low-Education Group



Only half of the high school examinees met or exceeded the Applied Mathematics skill requirements for Electricians and Plumbers, Pipefitters, & Steamfitters.

Conclusion

This report is the third in a series that examines how to define, measure, and interpret a gap in the skills needed for individuals to be prepared for various jobs throughout a lifetime. This report investigated the assumption that an individual's level of education provides him or her with the requisite "skills" for occupations that require a given level of education.

A gap analysis was conducted to compare examinees by education group for occupations requiring similar levels of education for entry into employment. "Skills gap" was defined as a gap between the skills needed for a job requiring a given level of education versus those skills possessed by individuals with that level of education.

Significant foundational skills gaps exist for US workers and job seekers tested with ACT WorkKeys skills assessments, possessing either low or high levels of education, for jobs that require similar levels of education.

For high-paying target occupations requiring either a low or high level of education, the majority of ACT WorkKeys examinees in the United States are not able to demonstrate the required skill level for locating information. This skill involves the ability to locate, synthesize, and use information from workplace graphics such as charts, graphs, tables, forms, flowcharts, diagrams, floor plans, maps, and instrument gauges.

The analysis suggests that caution should be used in considering indirect measures of skills as a substitute for actual skill level. These findings could be interpreted to suggest that level of academic achievement alone does not provide a comprehensive measure of an individual having the skills needed for entry into a job. While extremely important, the knowledge gained in an academic setting does not guarantee that an individual is able to apply that knowledge in solving workplace issues nor to successfully perform job-related tasks. The analysis suggests that a more holistic view of an individual's knowledge, skills, attitudes, and personality characteristics should be taken into account when determining occupation fit.

While the analysis presented in this report addresses only cognitive work readiness skills, it is equally important to measure and define the personality and behavioral characteristics important to success in a job or career. This analysis coupled with additional research on these other dimensions of work readiness (i.e., personality characteristics and attitudes that directly relate to performance on the job) serves to further the discussion of what is needed to more fully prepare individuals for jobs across the K–Career continuum.

Policies and Practices to Increase Readiness

Adopt strategies within education and workforce development systems that help individuals identify and address skills gaps relative to their specific career goals.

The benefits of having standardized measures of work readiness skills include the ability to help individuals identify their goals, explore their strengths and weaknesses, and receive personalized employment/training services. Just as the skill requirements vary considerably from career to career, so do the skill training needs of individuals across the K–Career continuum. Personalization of skill training is critical in the development of national, state, and regional strategies for both closing the skills gap and putting individuals on productive career pathways.

Encourage collaboration among educators, employers, and industry leaders to develop authentic learning experiences that incorporate work readiness standards into K–12, postsecondary, and career and technical education.

To better prepare students for careers, we need to ensure that students are receiving an education with academic foundational skills that are beneficial in real-world contexts. Given improved understanding of the underlying skills needed by successful employees to thrive in a changing labor market, more should be done to incorporate work readiness standards into the educational experience of students. Embedding work readiness standards into existing curricula and practices presents a remarkable opportunity for educators to maximize the relevance of their academic content, engage students in novel ways, and foster project- and team-based learning experiences that mirror the demands of the world of work.

Support community and economic development by better aligning education and workforce development efforts at the local, state, and regional levels.

Although work readiness standards are designed to match an individual's skills with those needed to succeed in a specific job, the data underlying the standards can be used in aggregate form for community, regional, and statewide work readiness efforts. Standardized measures of work readiness skills can be used systematically across communities to compare the skill sets of the available workforce against those needed to attract and expand targeted industries. One systematic approach is the ACT Work Ready Communities initiative. The initiative is designed to help business and industry identify the foundational skills they need for a productive workforce; allow policymakers to consistently measure the skills gap in a timely manner at the national, state, and local levels; and provide economic developers with data to market the quality of their workforce.[12]

Definition of Terms

Foundational skills—The fundamental, portable skills that are critical to training and workplace success. These skills are fundamental in that they serve as a basis—the foundation—for supporting more advanced skill development. And they are portable because, rather than being job specific, they can be applied at some level across a wide variety of occupations.

Job profile—A systematic procedure for gathering, documenting, and analyzing information about the content, context, and requirements of a job. It demonstrates that there is a clear relationship between the tasks performed on the job and the competencies, knowledge, skills, abilities, and behaviors required to perform the tasks.

Occupational profile—The end product of a process used to identify the key skill areas and levels of skills required to enter an occupation and successfully perform tasks. Occupational profiles are usually developed via a job analysis or job profile for several jobs with similar occupational titles.

Skills gap—A gap between the skills needed for a job requiring a given level of education versus those skills possessed by workers with a similar level of education.

Work readiness—A "work ready" individual possesses the foundational skills needed to be minimally qualified for a specific occupation as determined through a job analysis or occupational profile.

Work readiness benchmarks—The median skill level for all job profiles within a given occupation.

Work readiness standards—Precise descriptions of the knowledge and combination of skills that individuals need to be minimally qualified for a target occupation and are determined by the level of skills profiled for a national representative sample of jobs in a given occupation.

References

[1] See the ACT report *A Better Measure of Skills Gaps* (2011).

[2] Work readiness standards and benchmarks: The key to differentiating America's workforce and regaining global competitiveness. ACT, Inc., 2013.

[3] ACT job profiling is used to establish work readiness standards. When a job profile or job analysis is conducted, it is essentially a local content validation study. Local content validation studies are recommended by the federal *Uniform Guidelines on Personnel Selection* for employers using cognitive assessments for selection purposes. Job profiling fits the definition of a local content validation study under the *Uniform Guidelines*. Content validation links the content of a test to observable work behaviors such as job performance (shows that the test is relevant to the job). Subject matter experts rate the importance of specific job tasks and assign ACT WorkKeys skill levels to each task needed to be successful on the job. An overall skill level is then computed for the specific ACT WorkKeys tests (i.e., *Reading for Information, Applied Mathematics, Locating Information*, etc.) that are relevant to the job. Content validation is one method for using cognitive assessments for personnel selection under the *Uniform Guidelines* to address adverse impact in selection procedures. ACT has an established database (ACT JobPro) of cognitive skills and skill levels required for more than 19,000 jobs through 20 years of local content validation studies for specific jobs. The ACT JobPro database is the source of evidence for work readiness standards for ACT WorkKeys cognitive assessments.

[4] A time series break exists in ACT WorkKeys race/ethnicity data before 2010 due to changes in definitions of racial/ethnic groups.

[5] Analysis of the ACT JobPro database has found that, of the nine ACT WorkKeys cognitive skill areas, Reading for Information, Locating Information, and Applied Mathematics are most often determined via the job profiling process to be important for job and task performance. Specifically, 80% of all profiled jobs in ACT JobPro from 2007–2011 used all three of these skills.

[6] For more information about the ACT National Career Readiness Certificate, visit: www.act.org/products/workforce-act-national-career-readiness-certificate/.

[7] Low-education examinees are those who do not have formal training beyond high school; middle-education examinees are those who complete at least 1 but less than 4 years of formal training beyond high school; high-education examinees are those who complete 4 years or higher of formal training beyond high school. Educational level achieved was determined via self-reported data that is included in the user registration section of the ACT WorkKeys assessment process.

[8] The job profiles in ACT JobPro follow the O*NET taxonomy of occupational codes and can be aggregated for various types of analyses. An occupational profile is the aggregate of job profiles within the same occupational code. Analysis in this report was aggregated to Standard Occupational Codes (SOC) in order to tie in information about projected occupational trends in growth over the long term. A work readiness benchmark, or skill level required for a given occupation, is the median skill level set for all job profiles with the same O*NET or SOC code. A median skill score for three ACT WorkKeys skills (Reading for Information, Locating Information, and Applied Mathematics) was created for each SOC code.

[9] US Bureau of Labor Statistics, 2010–2020 Occupational Projections.

[10] US Bureau of Labor Statistics, Employment Projections—Measures of Education and Training.

[11] ACT (2011).

[12] For more information about ACT Work Ready Communities, visit: workreadycommunities.org/.

Acknowledgements

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