ACT’s “Ready for What” webinar will begin momentarily.

For the Best Experience:
• Use Google Chrome
• Refresh your browser if the webinar freezes
• Ask questions through the question panel

Don’t Forget:
• Live Q&A following the presentation
• The webinar is being recorded and will be available to view at a later date
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Presenters

Mary LeFebvre
Principal Research Scientist at ACT

Krista Mattern
Senior Director of Validity and Efficacy Research at ACT
Ready for what?
Development of a Hierarchical Framework Linking College Readiness and Career Readiness
Mary LeFebvre and Krista Mattern
What Does “Readiness” Mean?

Growing numbers of, use of, and context for “readiness” terms:

- College Readiness
- College and Career Readiness
- Career Readiness
- Work Readiness
- Job Readiness
Readiness as a definition isn’t helpful to anyone without a way to measure and use it to make decisions.
What signals readiness?

Educational Attainment vs. Acquisition of knowledge, skills, abilities, and other characteristics
ACT Hierarchical Framework of Readiness

• Addresses full continuum of transitions
• Contextualized measures of education and work success
• Informed by research, and evidence on benchmarks of education and work readiness
• Provides use cases for practitioners and policymakers
“Are college readiness and career readiness the same or different?”

The answer is more complex than a simple yes or no.

1. Education and work readiness is a continuum

2. The degree to which readiness information needs to be tailored/personalized depends on the use of that readiness information

3. Readiness = Education \rightarrow Workforce Continuum + Level of Specificity
ACT Framework of Readiness

- The Framework encompasses the different types and levels of readiness needed for success in both college and career.

- The levels of readiness in the Framework go from general to specific which allow for differentiation of purpose or uses by policy makers, educators, and individuals.
» Core Academic Skills
» Cross-Cutting Capabilities
» Behavioral Skills
» Education and Career Navigation Skills

Education and Workplace Success
Tier 1 – Most General Level of Readiness

**COLLEGE READINESS**
- KSAOs and level of KSAOs needed to succeed in the typical courses students take in the first year at a typical college or university
- Setting national, state, and local educational policies; accountability purposes
- ACT College Readiness Benchmarks

**CAREER READINESS**
- KSAOs and level of KSAOs needed to succeed in a typical job at a typical organization
- Setting national, state, and local educational and workforce training policies; accountability purposes
- ACT WorkKeys National Career Readiness Certificate levels
## ACT’s Definition of College Readiness

<table>
<thead>
<tr>
<th>COLLEGE COURSE</th>
<th>ACT SUBJECT TEST</th>
<th>ACT BENCHMARK</th>
<th>PERCENT OF 2017 ACT-TESTED HIGH SCHOOL GRADUATES MEETING ACT BENCHMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLISH COMPOSITION</td>
<td>ENGLISH</td>
<td>18</td>
<td>61%</td>
</tr>
<tr>
<td>COLLEGE ALGEBRA</td>
<td>MATHEMATICS</td>
<td>22</td>
<td>41%</td>
</tr>
<tr>
<td>SOCIAL SCIENCES</td>
<td>READING</td>
<td>22</td>
<td>47%</td>
</tr>
<tr>
<td>BIOLOGY</td>
<td>SCIENCE</td>
<td>23</td>
<td>37%</td>
</tr>
</tbody>
</table>
### ACT’s Definition of Career Readiness

<table>
<thead>
<tr>
<th>Certificate Level</th>
<th>Minimum Level Score on Each of the Three ACT Workkeys Assessments</th>
<th>Percentage of Jobs in the ACT JobPro Database for Which an Examinee Is Qualified Based on NCRC Level°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum</td>
<td>6</td>
<td>99%</td>
</tr>
<tr>
<td>Gold</td>
<td>5</td>
<td>93%</td>
</tr>
<tr>
<td>Silver</td>
<td>4</td>
<td>67%</td>
</tr>
<tr>
<td>Bronze</td>
<td>3</td>
<td>16%</td>
</tr>
</tbody>
</table>
# Career Readiness by Skills Area

<table>
<thead>
<tr>
<th>LEVEL SCORE</th>
<th>APPLIED MATHEMATICS</th>
<th>READING FOR INFORMATION</th>
<th>LOCATING INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>100%</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>100%</td>
<td>99%</td>
<td>100%</td>
</tr>
<tr>
<td>5</td>
<td>98%</td>
<td>98%</td>
<td>100%</td>
</tr>
<tr>
<td>4</td>
<td>86%</td>
<td>78%</td>
<td>87%</td>
</tr>
<tr>
<td>3</td>
<td>48%</td>
<td>26%</td>
<td>19%</td>
</tr>
</tbody>
</table>
Are College Readiness and Career Readiness the Same?

- WorkKeys Applied Mathematics cut score of 82 is associated with a 50% probability of earning a 22 or higher on the ACT Mathematics test
  - Level 6 corresponds to 82 to 86 scale scores

- A comparison of the mathematics readiness levels for ACT (22) versus WorkKeys (Level 5) suggests that a slightly lower level of mathematics knowledge is needed for career readiness than for college readiness
  - 29% of students with a WorkKeys level score of 5 in Applied Mathematics met the ACT Benchmark for mathematics.
Tier 2 – More Nuanced Level of Readiness

**COLLEGE MAJOR PATHWAY READINESS**
- KSAOs and level of KSAOs needed to succeed in typical courses students take in target majors linked to a career pathway
- Career counseling and exploration
- ACT STEM Benchmark

**CAREER PATHWAY READINESS**
- KSAOs and level of KSAOs needed to succeed in a typical job within a career pathway
- Career counseling and exploration
- ACT WorkKeys Career Readiness Benchmarks for STEM Careers
Probability of Success in First-Year STEM-Related Courses by ACT STEM Score at a Typical Four-Year Institution

ACT STEM Readiness Benchmark of 26
## WorkKeys STEM Career Readiness Benchmarks

<table>
<thead>
<tr>
<th>EDUCATION GROUP</th>
<th>APPLIED MATHEMATICS (Range: 3-7)</th>
<th>READING FOR INFORMATION (Range: 3-7)</th>
<th>LOCATING INFORMATION (Range: 3-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOW-EDUCATION OCCUPATIONS</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>MIDDLE-EDUCATION OCCUPATIONS</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>HIGH-EDUCATION OCCUPATIONS</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: ACT Job Profiles, January 2004 - December 2013

Note. N/A = Insufficient number of job profiles or occupations within an education grouping in order to calculate a benchmark.
Is Readiness for STEM college major the same as Readiness for a STEM Career?

<table>
<thead>
<tr>
<th>Non-Qualifier</th>
<th>Bronze</th>
<th>Silver</th>
<th>Gold</th>
<th>Platunium</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 3</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>65-70</td>
<td>71-74</td>
<td>75-77</td>
<td>78-81</td>
<td>82-86</td>
</tr>
<tr>
<td>87-90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

College Readiness - Math

College Major Pathway Readiness - STEM

<table>
<thead>
<tr>
<th>WorkKeys Applied Mathematics Level Score</th>
<th>ACT Mathematics Readiness</th>
<th>ACT STEM Readiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 3</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>4</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>5</td>
<td>29%</td>
<td>5%</td>
</tr>
<tr>
<td>6</td>
<td>71%</td>
<td>32%</td>
</tr>
<tr>
<td>7</td>
<td>96%</td>
<td>77%</td>
</tr>
</tbody>
</table>
The importance and level of mathematics knowledge were:

- 51.9 and 48.9 across 966 different occupations.
- 73.8 and 72.7 for occupations in the STEM Career Cluster.

The data underscore the need for higher levels of mathematics preparation for success in college and on the job for those pursuing STEM careers.
Tier 3 – Most Specific Level of Readiness

**INSTITUTION READINESS**

- KSAOs and level of KSAOs needed to succeed in a specific major and/or course at a specific college or university
- College admissions, placement, and major selection
- Local validity studies; locally set admission and placement cut scores

**WORK READINESS**

- KSAOs and level of KSAOs needed to succeed in a specific job at a specific organization
- Employee selection and promotion
- Local validity studies; hiring criteria
Placement cut scores and admission criteria provide a signal to potential applicants regarding the degree to which they are academically prepared to succeed at a specific institution.
# A Comparison of Work Readiness Benchmarks for Accountant versus Welders

<table>
<thead>
<tr>
<th>Skill Required</th>
<th>Accountants (O*NET Code 13-2011.01) Median Skill Level</th>
<th>Welders, Cutters, and Welder Fitters (O*NET Code 51-4121.06) Median Skill Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Mathematics</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Reading for Information</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Locating Information</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Applied Technology</td>
<td>N/A</td>
<td>3</td>
</tr>
<tr>
<td>Writing</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Teamwork</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Observation</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Business Writing</td>
<td>4</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Multidimensional Nature of Readiness and Success

Other Factors:
- Career Interests
- Behaviors Skills

Six-Year Degree Completion Rate by ACT Composite Score and ACT Engage Academic Discipline Score
Policy Implications
• Dispel assumptions of disparate levels of rigor in college and career readiness benchmarks.
• Provide education and workforce policymakers with a clear framework for quantitatively defining individuals as being “ready” for college or career at different degrees of specificity.
• Highlights challenges to addressing readiness that must be overcome to ensure all students prepared for whatever path they choose:
  • Funding
  • State and Location Implementation
  • Program Quality
  • Equity of Opportunity
Questions