Research Brief:
How do WorkKeys Assessments Affect College and Career Readiness Perceptions of Alaska High School Students?

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The Issue
The U.S. Department of Labor projects that nearly 50% of all new jobs created in the country between 2008 and 2018 will require some form of postsecondary award or training (Lacey & Wright, 2009). For American businesses to be globally competitive, entry-level workers must have the reading and math skills these new jobs will require (Council on Competitiveness, 2008); both business people and educators have expressed concern that many U.S. high-school graduates are not adequately prepared for college or careers. For instance, only 34% of students who graduate from high school in the U.S. have the skills necessary for college (Greene & Winters, 2005). This lack of skills is particularly concerning to community colleges, where anywhere from 38% to 68% of first-time students take at least one remedial course (Perin & Charron, 2006). This study sought to explore the usefulness of the ACT WorkKeys assessments in engaging students’ thinking around college and career planning.

Alaska’s Response
In Alaska, this lack of readiness is evident at the University of Alaska, where 55% of first-time freshmen took at least one remedial course in fall 2011 (University of Alaska System, 2012). Several years ago, Alaska state policymakers called for assessments to measure whether Alaska’s high school students had adequate reading and math skills to go on to postsecondary education or work (Work Ready/College Ready, 2010).

The State Commissioner of Education selected WorkKeys as the assessments to measure these skills, and since the 2010-2011 academic year all high school juniors in Alaska have been required to take three WorkKeys assessments—Reading for Information, Locating Information, and Applied Mathematics (Alaska Career Ready, 2011). WorkKeys assessments are designed to measure whether students’ reading and math skills are adequate for either college or the workplace (McLarty & Vansickle, 1997). They were first used nationally in 1992, and in 2006 ACT began awarding National Career Readiness Certificates to students who scored at specific levels in the assessments (ACT, 2010). The assessments can lead to a certification of workplace skills, in addition to measuring core academic skills, which makes them appealing to both educators and employers.
New WorkKeys Research

Previous research on WorkKeys assessments has focused mainly on their use in workforce development (Greene, 2008; Hendrick, 2006; Miller, 1997; Rotundo & Sackett, 2004) or test-taker characteristics in academic settings (Barnes, 2002; Lindon, 2010; Stone, 2007). We found only two studies that looked at WorkKeys results in relation to college readiness (ACT, 2006; Bowles, 2004).

This brief discusses the results of a survey asking juniors at an Anchorage high school how taking the WorkKeys assessments affected their perceptions about how ready they were for college or work, and whether they found the assessments useful for future education or career planning. We employed a quantitative research method and developed a survey with close-ended items. Practitioners familiar with WorkKeys reviewed the instrument to ensure construct validity, and it was piloted with a small group of students prior to general administration.

Data for this study were collected in the spring of 2011. Students were solicited for voluntary participation on the day they learned their WorkKeys scores. Participants received an overview of WorkKeys, along with information about the survey research. The adjacent table shows that roughly half the juniors who had just received their WorkKeys scores filled out the survey, for a 49% response rate. Those who took the survey reported their WorkKeys scores and their grade point average (GPA), as well as their gender and ethnicity.

Figure 1 compares the WorkKeys scores of those who took the survey and of all those who took the WorkKeys assessments; survey respondents’ scores are representative of the score distribution of all test takers.

<table>
<thead>
<tr>
<th>Survey Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>173 of 364 juniors taking the WorkKeys tests filled out the survey (49% response rate)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Self-reported respondent characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender: 53% male 47% female</td>
</tr>
<tr>
<td>Ethnicity: 11% African American/Black 9% Alaska Native/Amer. Indian 21% Asian/Pacific Islander 19% Multi-ethnic 35% White</td>
</tr>
<tr>
<td>Grade Point Average: 24% 3.50-4.00 22% 3.00-3.49 28% 2.50-2.99 19% 2.00-2.49 5% 1.50-1.99 2% Below 1.50</td>
</tr>
</tbody>
</table>

Center for Alaska Education Policy Research
WorkKeys assessments and perceptions of college & career readiness

Figure 1: WorkKeys scores of respondents and the general student population

Though not all students taking the WorkKeys assessment completed the survey, these histograms depict that survey respondents were generally representative of the broader student population.
Source: X. Sun, Anchorage School District Assessment and Evaluation Department, personal communication, September 2, 2011.

Results

The survey asked students to agree or disagree with several statements about how the WorkKeys assessments had affected their perceptions about their readiness to go on to college or work, and the usefulness of the assessments in helping them plan for the future. Tables 1 and 2 show responses to those questions. We also asked students to rate their confidence in their own math and English skills, before and after taking the WorkKeys tests.
Table 1: Survey responses about readiness for college

<table>
<thead>
<tr>
<th>Question</th>
<th>Number of respondents (n)</th>
<th>Strongly disagree %</th>
<th>Disagree %</th>
<th>Agree %</th>
<th>Strongly agree %</th>
</tr>
</thead>
<tbody>
<tr>
<td>My WorkKeys results caused me to rethink my education options after high school.</td>
<td>173</td>
<td>11.0</td>
<td>38.2</td>
<td>33.5</td>
<td>17.3</td>
</tr>
<tr>
<td>I believe the WorkKeys results are useful in planning for education after high school.</td>
<td>173</td>
<td>3.5</td>
<td>13.9</td>
<td>58.4</td>
<td>24.3</td>
</tr>
<tr>
<td>After seeing my WorkKeys results, I feel confident that I have the skills to be successful in college.</td>
<td>173</td>
<td>6.9</td>
<td>26.6</td>
<td>50.3</td>
<td>16.2</td>
</tr>
<tr>
<td>There is no connection between my WorkKeys results and my education after high school.</td>
<td>171</td>
<td>16.4</td>
<td>53.2</td>
<td>22.2</td>
<td>8.2</td>
</tr>
</tbody>
</table>

Students’ responses to the college readiness component of the survey suggest that the test encouraged almost half to rethink education options after high school, with two thirds indicating confidence in their ability to be successful in college. The vast majority of students (over 80%) stated that the assessments would be useful in planning for postsecondary options. 70% of students were able to see connections between the assessments and postsecondary education.

Table 2: Survey responses about readiness for careers

<table>
<thead>
<tr>
<th>Question</th>
<th>Number of respondents (n)</th>
<th>Strongly disagree %</th>
<th>Disagree %</th>
<th>Agree %</th>
<th>Strongly agree %</th>
</tr>
</thead>
<tbody>
<tr>
<td>After seeing my WorkKeys results, I feel confident that I have the skills to be successful in a career.</td>
<td>172</td>
<td>6.4</td>
<td>19.8</td>
<td>54.7</td>
<td>19.2</td>
</tr>
<tr>
<td>My WorkKeys results caused me to consider career options I had not thought about before.</td>
<td>173</td>
<td>9.8</td>
<td>37.6</td>
<td>41.6</td>
<td>11.0</td>
</tr>
<tr>
<td>I believe the WorkKeys results are useful in planning for my future career.</td>
<td>172</td>
<td>6.4</td>
<td>20.9</td>
<td>52.9</td>
<td>19.8</td>
</tr>
<tr>
<td>There is no connection between my WorkKeys results and my career plans.</td>
<td>171</td>
<td>17.5</td>
<td>45.6</td>
<td>28.7</td>
<td>8.2</td>
</tr>
</tbody>
</table>

Students’ confidence after reviewing WorkKeys scores was stronger with regards to careers. Whereas half felt that the assessments made them feel confident about their college success, 74% felt confidence around their capacity for career success. However, students indicated that the assessments were slightly less useful for career than postsecondary planning, and were also less likely to indicate that they were encouraged to rethink their career options upon seeing their score results. 63% of students identified connections between the assessments and careers, which was a slightly lower than their ability to connect it to postsecondary education plans.
Discussion

We analyzed the responses about college readiness and career readiness statistically and found them to have a significant relationship; therefore, we combined the results to report findings. Though ACT recognizes student scores of 3 or 4 for bronze or silver recognition of workforce readiness skills, it identifies Level 5 on reading and math as the equivalent of college readiness on the ACT college test (ACT, 2006). Therefore, the classification of “college ready” for this analysis was given to students who earned at least a 5 on both tests.

- **There is a wide gap between students’ perceptions about their readiness to go on to college or careers and their skill levels as measured by WorkKeys: students appear to be overly confident about their skills.** About two thirds (66%) of respondents agreed or strongly agreed with the statement, “After seeing my WorkKeys results, I feel confident that I have the skills to be successful in college.” Similarly, 74% agreed or strongly agreed with the statement, “After seeing my WorkKeys results, I feel confident that I have the skills to be successful in a career.” Yet only 37% of the students scored at the college-ready level on both Reading for Information and Applied Mathematics assessments. Those responses were consistent across score levels on the assessments, indicating that regardless of observed performance, there is a general feeling of capacity for success in college and career.

- **Most students believe the WorkKeys assessments are useful in helping them plan for the future.** This finding is based on the fact that 83% of the respondents agreed or strongly agreed that “WorkKeys results are useful in planning for education after high school” and 73% agreed or strongly agreed that “WorkKeys results are useful in planning for [a] future career.” Also, responses to the statement “The WorkKeys tests were a waste of time” were strongly negative, with 73% of students disagreeing or strongly disagreeing—which also shows most students see value in the assessments. These responses were also consistent across score levels.

- **Students with low scores on the WorkKeys assessments were more likely to have scored lower than they expected to, compared to higher-scoring students.** That is, lower-scoring students were more likely to have overestimated their capabilities. Table 3
shows the results, dividing students into those who scored below level 5 on the assessments and those who scored at or above 5, the ACT threshold for college readiness.

Table 3: Cross-tabulation of WorkKeys expected and demonstrated performance

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Score level</th>
<th>n</th>
<th>Worse than expected %</th>
<th>Expected %</th>
<th>Better than expected %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading for Information</td>
<td>&lt;5</td>
<td>83</td>
<td>34.94</td>
<td>44.58</td>
<td>20.48</td>
</tr>
<tr>
<td></td>
<td>≥5</td>
<td>89</td>
<td>23.60</td>
<td>49.44</td>
<td>26.97</td>
</tr>
<tr>
<td>Applied Mathematics</td>
<td>&lt;5</td>
<td>94</td>
<td>27.66</td>
<td>52.13</td>
<td>20.21</td>
</tr>
<tr>
<td></td>
<td>≥5</td>
<td>79</td>
<td>15.19</td>
<td>54.43</td>
<td>30.38</td>
</tr>
</tbody>
</table>

Though approximately half of students’ expected and actual test performance aligned, students who scored below the college readiness threshold of 5 in math or reading were more likely to have over-estimated their skills prior to taking the assessments.

Implications

The findings have implications for educators, business people, and policymakers. First, the finding that high-school students see value in the WorkKeys assessments—which are standardized tests—is unusual (Paris, Roth, & Turner, 2000). WorkKeys assessments were only introduced in Alaska in 2011, so these findings may reflect their novelty. Still, that positive perception is an opportunity; to make the WorkKeys assessment results more valuable, students need to know more than just their scores. Self-efficacy literature—that is, literature that looks at what people believe about their own abilities—suggests that setting short-term achievement goals can help people enhance academic achievement and improve decision-making about careers (Nilsson, Schmidt, & Meek, 2002; Roderick & Engel, 2001). Policy should support not only the administrative staffing needed to administer the WorkKeys tests, but also guidance counseling and advising services that can help students to interpret results and maximize the developmental component of the exam, thus augmenting the college and career readiness of Alaska high-school students.

As students regard the test as valuable and appear to approach it with an interest and investment in their success, there is an opportunity to extend its applicability and impact to benefit employers. As the test is used widely and linked to other initiatives including the
Alaska Performance Scholarship, employers should be encouraged to request and review WorkKeys scores when considering applicants.

It must also be clear to students what it means to be academically prepared for further education or careers. Though nearly three-quarters of students surveyed reported grade point averages of A or B and regarded their skills as strong, these self-perceptions were not supported by standardized test scores. The findings of the study suggest that even high-achieving high school students may not be “college ready” as determined by standardized tests. As secondary graduation requirements do not currently align with college readiness metrics, there is an opportunity for programming that helps students to understand the differences between high school and college and better prepare for the changing academic demands that await them in the postsecondary setting. Additional and individualized college planning initiatives are recommended.

**Conclusion**

If the WorkKeys assessments are intended to motivate students to higher achievement, then the education system that mandates those assessments should implement supports to help students achieve more. Including WorkKeys in a broader program that prepares students for college and careers would be an important step. Other indicators of college readiness currently exist—such as advanced placement and dual credit college courses—and work-based learning opportunities are available to help students develop workplace skills. The findings of this study support the recommendation that WorkKeys assessments be an integrated element of a program to better prepare students for college and careers.
References


Work Ready/College Ready, 4 AAC § 06.715 and 06.717 (2010).