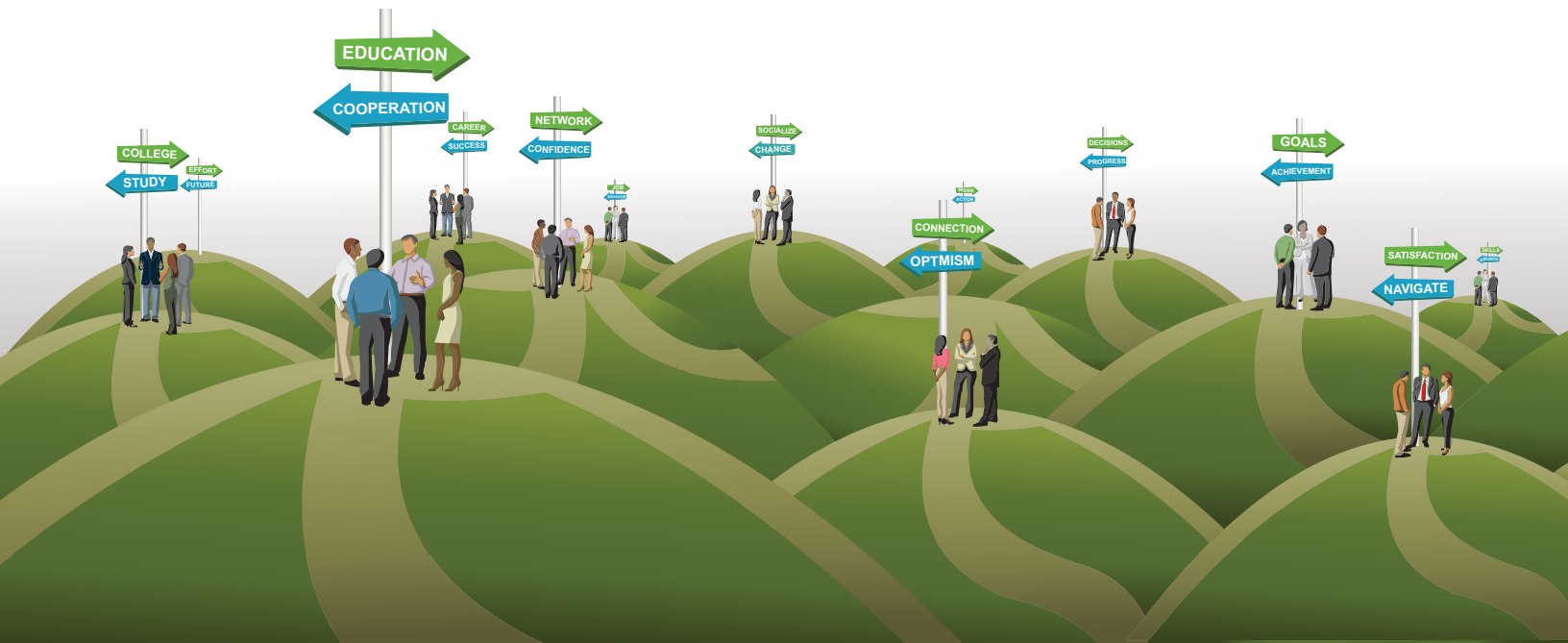


The Importance of Behavioral Skills and Navigation Factors for Education and Work Success



Daniel M. Elchert, PhD candidate
Christian A. Latino, PhD candidate
Becky L. Bobek, PhD
Jason Way, PhD
Alex Casillas, PhD



Daniel Elchert is completing his PhD at The University of Iowa while working as a research assistant at ACT. His research interests include investigating career development processes and how individuals navigate through their education and career.

Christian Latino is completing his PhD at the University of Iowa while working as a research assistant at ACT. His research interests include yoga and first generation college students.

Becky Bobek is a principal research scientist at ACT who conducts research in the area of education and career navigation, including the constructs (goals, interests, etc.) and processes (decision-making) that facilitate successful education and work transitions.

Jason Way is a research psychologist in Behavior and Navigation Research. He researches behavioral and psychosocial skills, including their relevance to important academic and work outcomes.

Alex Casillas is a principal research psychologist in Research on Assessment and Learning specializing in assessment design and behavioral predictors of performance and persistence in education and work settings.

Acknowledgments

The authors thank Kyle Swaney for his review and suggestions on an earlier version and Stephanie Su for data analysis support.

Table of Contents

Introduction	1
What are the ACT Holistic Framework Behavioral Skills and Navigation Factors?	1
ACT National Curriculum Survey® and Sample	2
Behavioral Skills and Navigation Factors Essential for Education and Work Success . .	3
Finding 1: A large majority of educators and workforce supervisors consider behavioral skills and navigation factors to be important for success in education and work settings. . .	3
Finding 2: Most education and workforce respondents consider Sustaining Effort an important behavioral skill for success.	4
Finding 3: While a majority of educators and supervisors consider Socializing with Others important for success, this percentage goes down over time.	5
Finding 4: A large majority of educators across grades 3–12 rate navigation factors as important for success, while fewer postsecondary and workforce respondents consider these factors important.	6
Finding 5: Far more teachers across grades 3–12 consider Having a Goal important to be ready for success than postsecondary instructors and workforce supervisors.	7
Finding 6: More teachers rate Sustaining Effort and Acting Honestly highly important for being ready for success than other behavioral skills.	8
Finding 7: Postsecondary instructors and workforce supervisors identify different behavioral skills as highly important.	9
Finding 8: Navigation factors related to understanding the self and the environment are rated highly important by many teachers across grades 3–12.	10
Finding 9: Highest rated navigation factors for postsecondary instructors and workforce supervisors focus on awareness and connections.	11
Recommendations	12
References	13
Appendix A: ACT National Curriculum Survey Items for Behavioral Skills and Navigation Factors	18
Appendix B: Descriptive Statistics of Behavioral Skills and Navigation Factors ACT National Curriculum Survey Items.	20

Introduction

Over the past decade, there has been greater recognition by educators, employers, and policymakers of the importance of behavioral skills and navigation factors (e.g., dependability, cooperation, interests, and goals) for education and career success. A growing body of research shows that these factors contribute to diverse positive outcomes in both education¹⁻⁴ and workforce⁵⁻⁸ settings. In addition, recent legislation (Every Student Succeeds Act, 2015) provides states with the flexibility to include a non-academic indicator (in conjunction with traditional academic achievement indicators) when measuring K-12 student progress and success, calling attention to the role of non-academic factors in contributing to educational outcomes. These factors are also important to employers. Surveys of employers indicate an increased need for employees with a range of behavioral and navigation skills that influence work outcomes.⁹ Recognizing the significance of behavioral skills and navigation factors, ACT recently advanced the ACT Holistic Framework, a more holistic approach to preparing people for success throughout their education and work journeys. This comprehensive, research-based framework includes core academic skills, cross-cutting capabilities, behavioral skills, and navigation factors across critical transitions that are considered essential for achieving education and career success.¹⁰

This report focuses on behavioral skills and navigation factors (drawn from the ACT Holistic Framework) that elementary, middle, and high school teachers, college instructors, and workforce supervisors consider important for success. The following four topics are discussed: 1) the behavioral skills and navigation factors featured in the ACT Holistic Framework, 2) a brief description of the 2016 ACT survey of college and career readiness expectations, by which data were collected on the factors considered integral to success in education and work, 3) survey results from educators and workforce supervisors, along with the potential implications of these findings, and 4) recommendations that translate the importance attributed to behavioral skills and navigation factors into actions for policymakers, educators, and employers.

What are the ACT Holistic Framework Behavioral Skills and Navigation Factors?

Broadly, the combination of behavioral skills and navigation factors refer to the range of behaviors, strategies, skills, attributes, and attitudes (as well as specific areas of knowledge that support these factors) that affect how individuals interact with their environments and, in turn, the subsequent effects of these interactions on individual development and outcomes.^{11,12} Building from years of ACT research on specific types of behavioral skills and navigation factors that contribute to academic success, the ACT Holistic Framework includes these factors in two of its domains—*behavioral skills* and *education and career navigation*. Behavioral skills are interpersonal, self-regulatory, and task-related behaviors that connect to successful performance in education and workplace settings. The behavioral skills are designed to help individuals succeed through effective interactions, stress management, and persistent effort.

Education and career navigation consists of the personal characteristics, processes, and knowledge that influence individuals as they journey along their education and career paths. The navigation factors are designed to help individuals make informed, personally-relevant

Behavioral Skills



Acting Honestly—

Describes the extent to which a person values and adheres to ethical and moral standards of behavior, as well as a personal level of humility.



Getting Along with Others—Describes the extent to which a person interacts positively and cooperates with others, and is generally kind, friendly, and tactful.



Keeping an Open Mind—Describes a person's level of open-mindedness and curiosity about a variety of ideas, beliefs, people, and experiences.



Maintaining Composure—Describes the extent to which a person is relatively calm, serene, and able to manage emotions effectively.



Socializing with Others—Describes a person's preferred level of social interaction, behavior in interpersonal situations, and optimism.



Sustaining Effort—Describes a person's level of diligence, effort, organization, self-control, and compliance.

Education and Career Navigation



Self-Knowledge—

Describes the awareness and perceptions of one’s own abilities, interests, skills, values, attitudes, and beliefs that contribute to understanding the self.



Environmental Factors—Describes the information, conditions, connections, and experiences related to education and work that are acquired primarily from external sources and surroundings.



Integration—

Describes the ongoing process of combining self-knowledge and environmental factors to form personally relevant knowledge structures used to make decisions, evaluate information and goals, and plan courses of education or work actions.



Managing Career and Education Actions—

Describes the ongoing process of implementing plans, and enacting purposeful behaviors that facilitate education and occupation progress.

decisions and build actionable plans that facilitate achieving goals. Within the behavioral skills and navigation domains, both broad and specific factors are specified. See sidebars for the broader descriptions of behavioral skills and navigation factors. For more details on these domains and the factors within them, refer to [Beyond Academics: A holistic framework for enhancing education and workplace success](#).

ACT National Curriculum Survey® and Sample

Every few years, thousands of K–12 teachers and postsecondary instructors complete the ACT National Curriculum Survey, identifying the knowledge and skills being taught and considered essential for college and career readiness in the subjects of English/writing, mathematics, reading, and science. In 2016, ACT expanded the survey by including questions about the importance of behavioral and navigation knowledge and skills for preparing individuals to be successful in education and work. For the first time, this survey was also completed by workforce professionals. ACT uses the results of this nationwide survey to update its suite of assessments and to inform the development of new college and career readiness solutions.

Print and electronic methods (e.g., advertisements, email, social media) were used to invite participants to complete the survey. Educators (at the elementary school, middle school, high school, and college levels) who teach courses in English/writing, mathematics, reading (e.g., language arts and social studies), and science (e.g., biology, chemistry, physics, and earth/space science) in public and private U.S. institutions participated in the survey. Workforce supervisors and employees (excluded from this report) from many different businesses also completed the survey. Table 1 shows numbers of survey respondents in each area.

Table 1. 2016 ACT National Curriculum Survey Respondents

Area	Number of Respondents
Elementary School	2,298
Middle School	1,331
High School	2,717
College	2,252
Workforce Supervisors	371

Although education and workforce survey participants were asked questions about a range of topics (e.g., academic content, assessments, use of technology, use of skills, standards—see [ACT National Curriculum Survey 2016](#) for these results), this report focuses on responses to questions about behavioral skills and education and career navigation (see Appendix A). For behavioral skills, respondents rated how important the broader set of behavioral skills (see page 1 sidebar) are for success. For education and career navigation, respondents rated the importance of these factors for success including self-awareness of strengths and weaknesses, making connections between education and work, identifying education/career goals, how to progress along education and career paths, academic/career planning, and being open to different learning opportunities. A number of navigation questions varied for the three respondent groups (Grades 3–12 educators, college instructors, and workforce supervisors) to account for age and context differences. While the underlying concepts remained the same, some differences in results across respondent groups may be due in part to question variability. All respondents provided ratings using a five-point scale where (0) was

'not important' and (4) was 'high importance.' Combined importance ratings within the top half of the scale (ratings of 3 and 4) are reported in Figures 1, 2, and 3. High importance ratings (rating of 4 only) are reported in Figures 4 and 5. For additional descriptive information about the survey items, see Appendix B.

Behavioral Skills and Navigation Factors Essential for Education and Work Success

Hundreds of research studies show that factors in the behavioral skills and education and career navigation domains are important for education and career success.¹³ For instance, researchers have found that these factors contribute to successful outcomes like good grades in school,^{4,14} college graduation,^{3,4} and job satisfaction,^{7,8} among others. Based on data from thousands of high school students, studies also show that these factors relate to staying in school.³ Additionally, over a decade of research with college students highlights the importance of behavioral skills and navigation factors for increasing grade point average.¹⁵ In the workforce, these factors have been shown to relate to completing work tasks, receiving promotions, and pay increases.^{16–21} In addition to these research findings, results from the ACT National Curriculum Survey show the importance of behavioral skills and navigation factors to educators and workforce supervisors.

Finding 1: A large majority of educators and workforce supervisors consider behavioral skills and navigation factors to be important for success in education and work settings.

An overwhelming 90% of elementary, middle, and high school teachers rated both the behavioral skills and navigation factors to be important for preparing students for success (Figure 1). Well over three-quarters of postsecondary instructors (86%) and workforce supervisors (83%) consider behavioral skills important to be successful in college and work, respectively. Additionally, nearly two-thirds of postsecondary and workforce survey respondents rated education and career navigation factors as important for preparing students and workers for success (65% and 67%, respectively).

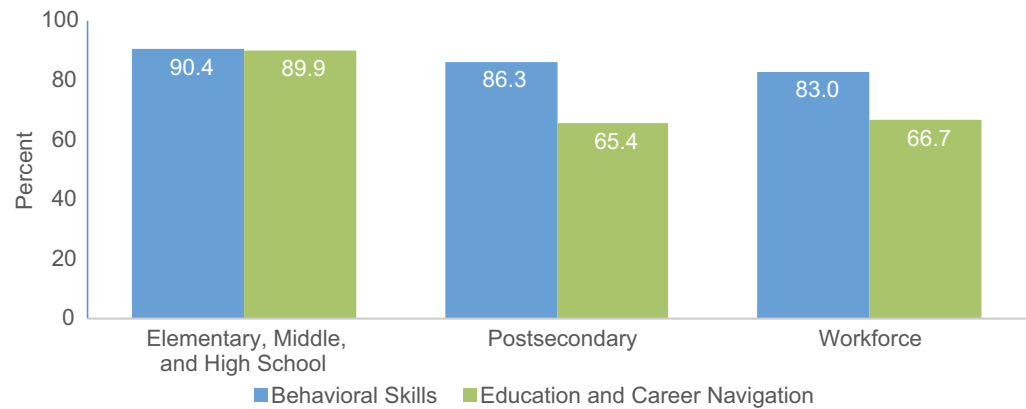


Figure 1. Averaged across all factors in a domain, the percentages of educators and workforce supervisors who rated behavioral skills and navigation factors as important (based on ratings of 3 and 4) for preparing individuals for success

Supporting Research

Such strong support for the importance of behavioral skills and navigation factors during school underscores the effects these types of skills and attributes have on students. For example, middle school students who consistently follow directions and dedicate genuine effort to completing homework assignments are less likely to be absent from school.²² On-time high school graduation is more likely for middle school students who have good conduct, are academically disciplined, and optimistic.²³ During high school, having a clear plan and setting achievable goals to go to college or find work increases students' chances of meeting these goals.²⁴ It is also the case that college students who persist through challenges are more likely to attend classes and do well in them.²⁵

The importance attributed to behavioral skills and navigation factors by workforce supervisors also highlights the influence they have on the success of workers. Employees who consistently get along with colleagues, are cooperative, and who communicate well are more effective in completing work tasks compared to persons without these qualities.^{26,27} Employees whose personal characteristics (e.g., interests, values) are compatible with the work they do are more likely to remain on the job.²⁸ Further, honest and truthful employees are less likely to contribute to a negative work atmosphere through gossip, theft, or under-productivity.²⁹ The research is consistent with the perceptions of educators and workforce supervisors that behavioral skills and navigation factors are critical for school and work success.

Finding 2: Most education and workforce respondents consider Sustaining Effort an important behavioral skill for success.

With the exception of Socializing with Others, at every stage of development the other five behavioral skills are considered to be vital for education and work success. Among them, Sustaining Effort edges out the others in all but one stage (Figure 2). At least 96% of grades 1–12 teachers and postsecondary instructors rated Sustaining Effort as important to

attaining education outcomes like getting good grades. Similarly, 89% of workforce supervisors rated this skill as important for occupational outcomes like delivering quality work.

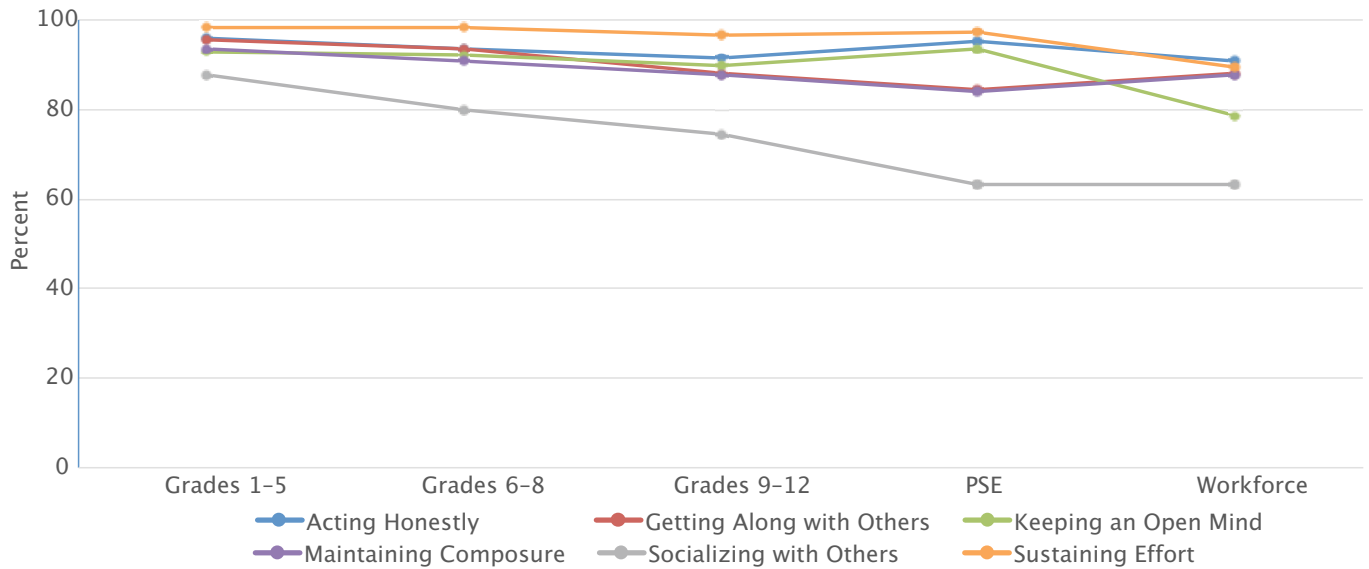


Figure 2. Behavioral skills importance ratings (based on ratings of 3 and 4) at the elementary school, middle school, high school, postsecondary, and workforce levels.

Supporting Research

Studies show that children who employ aspects of Sustaining Effort (e.g., a high degree of self-control, ambition, order, and persistence) are, as adults, more satisfied with their jobs, earn more money, and have higher positions within their companies at retirement.⁷ As young as elementary school, children who are diligent about the work assigned to them are less likely to procrastinate in their assignments.³⁰ Children and adolescents who are dependable and motivated are more likely to earn good grades in elementary, middle, and high school.² At the college level, students who exhibit academic self-discipline have higher first-year GPAs which makes them more likely to stay in school.^{31,32} While in the workforce, industrious employees are less likely to abuse company resources³³ and are less likely to quit.³⁴ Individuals who sustain effort personify the determination and organization necessary to persist through academic and professional challenges.

Finding 3: While a majority of educators and supervisors consider Socializing with Others important for success, this percentage goes down over time.

Three-quarters or more (ranging from 75% to 88%) of grades 1–12 teachers rated Socializing with Others—which deals with one’s level of social interaction, assertiveness, and optimism—as important for education success (Figure 2). Slightly less than two-thirds (63%) of postsecondary instructors and workforce supervisors rated this factor as important. This lower percentage of postsecondary and workforce respondents may highlight a difference in perception about Socializing with Others.

Supporting Research

Throughout elementary, middle, and high school, students are learning to interact with other people in varied social situations, and are developing critical interpersonal skills. Teachers recognize the value of students socializing with others through group work during classes, mentoring and tutoring, and experiential learning activities, all of which provide students with opportunities to develop critical interpersonal skills. Later on, college instructors may perceive socializing with others as less important because too much social interaction can distract students from their studies and other academic responsibilities. Similarly, workforce supervisors may view this factor as having the potential to interfere with or prevent the completion of work tasks.

Socializing with Others has been shown to influence individuals positively in school and work settings. In K–12 settings, sociable youth receive higher grades in classes³⁵, and optimistic youth are less absent from school.³⁶ Likewise, optimistic first-year college students get better grades and are better able to adjust to college than students who are less optimistic.³⁷ Furthermore, being able to interact with others has actually been shown to be a critical job skill, as these workers are more proficient in occupations that require regular interaction with different types of people (e.g., management and sales; Barrick & Mount, 1991).

Finding 4: A large majority of educators across grades 3–12 rate navigation factors as important for success, while fewer postsecondary and workforce respondents consider these factors important.

Examining education and career navigation factors separately (Figure 3), the pattern of ratings for Self-Awareness, Education/Work Connections, Planning, How to Progress along a Path, and Learning Options reveals high importance across grades 3–12 (above 80%). The percentage of postsecondary educators (ranging from 64% to 80%) and workforce supervisors (ranging from 57% to 83%) rating these navigation factors important is lower.

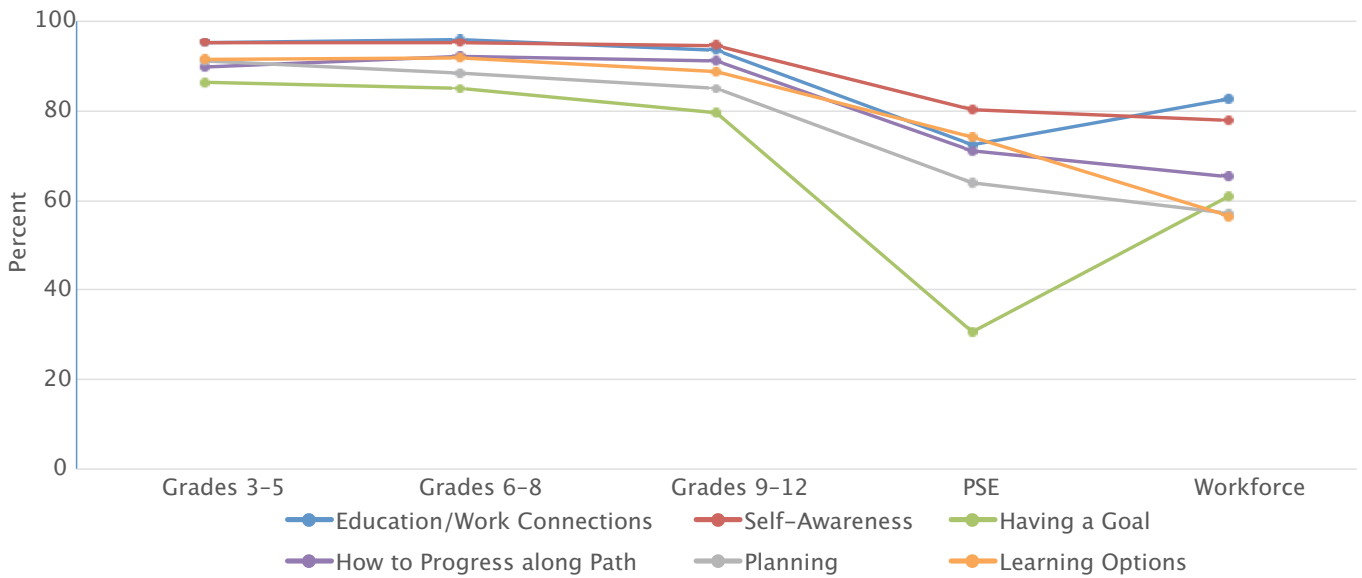


Figure 3. Education and career navigation importance ratings (based on ratings of 3 and 4) at the elementary school, middle school, high school, postsecondary, and workforce levels.

Supporting Research

This pattern suggests that elementary, middle, and high school teachers are keenly aware of the influence navigation factors have on students as they progress through the education system. During elementary school, students who are open to participating in different classroom activities tend to feel more confident in their ability to complete academic tasks.³⁸ In middle school, students who are exposed to personalized interpretations of their career interests experience an increase in their confidence to plan and explore these careers.³⁹ Likewise, high school students who make actionable plans to attend college are more confident about choosing their future college courses.⁴⁰ Students in elementary, middle, and high school clearly benefit from incorporating navigation factors into their educational experiences.

A majority of postsecondary instructors and workforce supervisors also acknowledge the importance of navigation factors related to making connections, awareness, pathway progress, and planning. These factors contribute to important college and work outcomes. For example, college students who are aware of their academic strengths and select majors that complement these strengths attain their degrees in less time than students with majors that do not reflect these academic skills and interests.⁴¹ At the workforce level, planning for future job opportunities and establishing career goals are related to higher job satisfaction.^{17,42}

Finding 5: Far more teachers across grades 3–12 consider Having a Goal important to be ready for success than postsecondary instructors and workforce supervisors.

Over three-quarters of grades 3–12 teachers (80–86%) considered Having a Goal important for education success (Figure 3). Interestingly, about one-third (31%) of postsecondary educators rated Having a Goal to be important for success in college, whereas 60% of supervisors rated Having a Goal as important for workforce success. The percentage of

importance ratings for Having a Goal nearly doubled from postsecondary instructors to workforce supervisors.

Supporting Research

Research is consistent with the high percentage of teachers across grades 3–12 who consider goals important. Early on, elementary and middle school students are developing aspirations (tentative future goals) about their education and career success, which are critical to considering realistic options later on.⁴³ In middle school, students who set clear goals and seek out information about the world of work have a better idea of future work opportunities compared to students who do not investigate the world of work.⁴⁴ During high school, there is a positive relationship between students who implement course goals and subsequent achievement.⁴⁵ Further, high school students who have a career goal are more likely to develop actionable, achievable education plans than students without a career goal.²⁴ Students whose career goals during high school are personally-relevant are more likely to explore potential job opportunities.²⁴

As noted above, the postsecondary finding contrasts sharply with findings for Grades 3–12 and workforce, with only about one-third of postsecondary educators rating Having a Goal as important for college success. This result may be due to the fact that, unlike for Grades 3–12 and workforce, postsecondary institutions typically impose a formal goal-oriented structure on the individual (in the form of a declared major or program of study). Since most colleges require a declared major by the sophomore year, most college students have an explicit goal for the majority of their college life. Thus, it is not surprising that postsecondary educators, as a group, place less importance on Having a Goal. Nevertheless, research shows that having academic goals contributes to academic performance and staying in college.³ Moreover, having clearer goals upon entering college is also linked to future life satisfaction and experiencing a sense of direction and purpose in the workforce.⁴⁶

In the workforce, goal-oriented individuals generally have higher self-confidence in their ability to perform well at work.⁴⁷ Workers with clear goals also report feeling a sense of personal growth and progression towards these goals, as opposed to people without goals who may lack a clear direction.⁴⁶

Finding 6: More teachers rate Sustaining Effort and Acting Honestly highly important for being ready for success than other behavioral skills.

Across grades 1–12, the highest percentage of teachers overall rated Sustaining Effort (78–89%) and Acting Honestly (63–85%) as highly important behavioral skills for being successful (Figure 4). Over half of teachers rated Keeping an Open Mind highly important (53%–65%). As grade levels increase, fewer teachers rated Getting Along with Others (49%–81%) and Maintaining Composure (43%–64%) highly important. At every grade, the lowest percentage of teachers rated Socializing with Others as a highly important behavioral skill (34–59%).

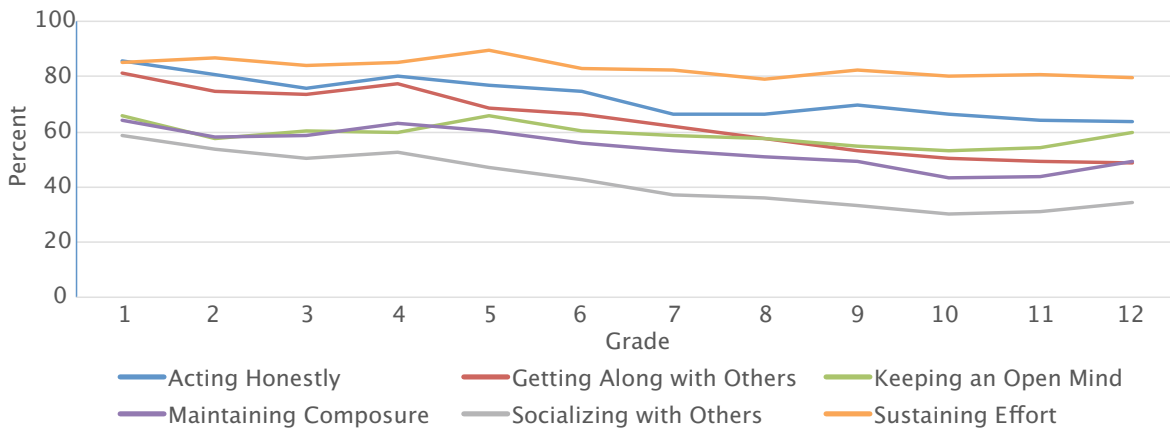


Figure 4. Percentage of teachers across grades 1–12 rating behavioral skills highly important (represents only high importance ratings of 4) for education success.

Supporting Research

Consistent with research on Sustaining Effort, being persistent when completing assignments leads to higher grades as early as elementary school² and rule-following adolescents are less likely to bully others.⁴⁸ Early investments in Sustaining Effort and Acting Honestly pay off later in life, as well. For instance, college students who are diligent, motivated, structured, and modest earn higher GPAs and are less likely to cheat, abuse substances, and plagiarize.⁴⁹

The high importance attributed to behavioral skills during early elementary school may reflect the early education focus on teaching social norms and classroom-appropriate behavior. The decrease in the percentages of teachers rating behavioral skills as important during middle school and high school may reflect the educational shift in focus toward cognitive, academic content at higher grade levels.⁵⁰ Despite this shift, behavioral skills are still critical throughout all grade levels. For example, at the high school level, researchers conclude that students who are kind to others and adept at managing stress are less likely to be absent from school³⁶ and more likely to have good grades.³⁵

Finding 7: Postsecondary instructors and workforce supervisors identify different behavioral skills as highly important.

Postsecondary instructors most frequently rated Sustaining Effort, Acting Honestly, and Keeping an Open Mind as highly important behavioral skills (see sidebar). These skills, represented by the effort to complete assignments, being ethical when taking tests, and being open to new ideas during college are acutely relevant to success.^{14,49} For instance, hard-working college students who persevere are more likely to have good leadership and interpersonal skills¹ and actively manage their own learning.⁵¹ Ethical students tend to work with integrity, and open-minded students tend to be continuous learners and embrace diverse cultures.¹

Results from workforce supervisors indicate that Acting Honestly, Getting Along with Others, and Maintaining Composure are the most important behavioral skills needed for work success (see table on page 10). These factors suggest that supervisors want to maintain an ethical workplace where individuals can function effectively in teams and manage the pressures of

work. Many studies support this. For example, honest and calm employees who effectively interact with difficult clients are the most highly rated by supervisors,⁵² and employees who are emotionally calm also tend to experience greater job satisfaction and have higher incomes.⁷ Additionally, employees who are kind to their colleagues are generally less likely to steal and cause interpersonal problems.⁵³

Behavioral Skills: Highly Important Postsecondary and Workforce Rankings		
Rank	Postsecondary	Workforce
1	Sustaining Effort	Acting Honestly
2	Acting Honestly	Getting Along with Others
3	Keeping an Open Mind	Maintaining Composure
4	Getting Along with Others	Sustaining Effort
5	Maintaining Composure	Keeping an Open Mind
6	Socializing with Others	Socializing with Others

Finding 8: Navigation factors related to understanding the self and the environment are rated highly important by many teachers across grades 3–12.

Overall, the highest percentage of teachers across grades 3–12 rated Education/Work Connections (61%–74%) and Self-Awareness (62%–73%) as highly important navigation factors when preparing for educational success (Figure 5). Over half of teachers indicated that being open to different Learning Options (50%–62%) and understanding How to Progress along an education or career path (57%–63%) was highly important. Nearly three-quarters (72%) of grade 5 teachers rated Planning as highly important, while fewer (52%–65%) teachers in other grades indicated Planning to be highly important for success. The lowest percentage of teachers overall rated Having a Goal as a highly important navigation factor (40%–56%).

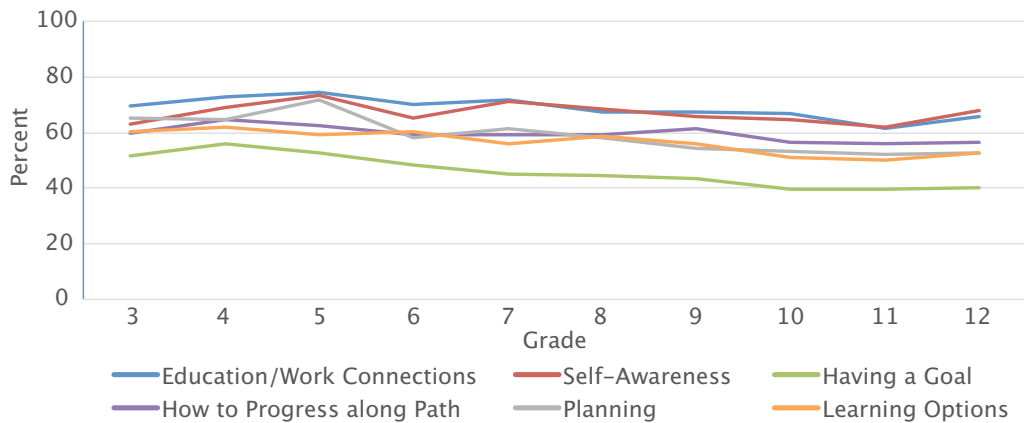


Figure 5. Percentage of teachers across grades 3–12 rating education and career navigation factors highly important (represents only high importance ratings of 4) for education success.

Supporting Research

The significance of making connections between education and work and becoming aware of strengths and weaknesses is quite evident to elementary, middle, and high school teachers. For many students, an understanding of the relevance of school learning to future work motivates them to achieve academically. When students have accurate awareness of personal and academic strengths and weaknesses, this self-knowledge can be used to guide education and career aspirations and plans. Middle school students who are self-aware are inclined to find school meaningful,⁵⁴ and to consider future career options.⁵⁵ During high school, students who understand the connection between academic performance in classes and future education and work opportunities tend to envision potential job options and feel supported by their teachers.⁵⁶ Likewise, high school students who understand their academic interests and strengths are more likely to perform well academically and to learn new skills.⁵⁷

Finding 9: Highest rated navigation factors for postsecondary instructors and workforce supervisors focus on awareness and connections.

The most highly rated education and career navigation factors for postsecondary instructors are Self-Awareness and Education/Work Connections, followed by Learning Options (see table on page 12). These factors highlight the need for college students 1) to understand their strengths and weaknesses when they select coursework and choose majors, 2) to determine how the knowledge and skills they are learning can be applied to possible future work, and 3) to make use of diverse learning opportunities that support navigating through college and transitioning into the workforce successfully. For example, college students who pursue majors that complement their academic abilities obtain better grades in these majors.⁵⁸ Further, college students who are able to connect their skills to potential jobs are more confident in their professional choices,⁵⁹ and more likely to network with others relevant to their job prospects during college.⁶⁰ Additionally, college students who have opportunities to participate in internships tend to secure full-time jobs more quickly after college.⁶¹

Education & Career Navigation: Highly Important Postsecondary and Workforce Rankings		
Rank	Postsecondary	Workforce
1	Self-Awareness	Education/Work Connections
2	Education/Work Connections	Self-Awareness
3	Learning Options	How to Progress along Path
4	How to Progress along Path	Planning
5	Planning	Having a Goal
6	Having a Goal	Learning Options

Supervisors also rated Self-Awareness and Education/Work Connections as the top two highly important navigation factors for workforce success (see table above). These factors suggest that supervisors understand the importance of capitalizing on the identified strengths of employees and providing for the further development of areas that need improvement, as well as the benefits of employees being able to apply what they have learned in school on the job. Employees with jobs that reflect their personal attributes have better relationships with managers, less work-related stress, and are not as likely to leave their jobs.^{18,62} Employees who apply their education-related skills in their work also experience higher job satisfaction.¹⁷

The above results show that behavioral and navigation factors are considered essential for education and career success. For elementary, middle, and high school educators, the development and effective use of these factors are central to student achievement and progress in school as well as a healthy school climate. For postsecondary educators and workforce supervisors, there are also clear performance and persistence benefits during college and at work that result from applying behavioral skills and navigation factors. With educators, supervisors, and researchers emphasizing the significance of these factors, there is an even greater call to action for educators, employers, and policymakers to focus on behavioral skills and education and career navigation—a number of recommendations follow.

Recommendations

Educators

- Identify opportunities to incorporate the development of knowledge and skills in the behavioral skills and navigation domains into daily lessons and classroom routines
- Employ behavioral skills and navigation factors in formative assessment solutions to further personalize learning and to monitor student progress in the development of these critical skills
- Encourage students to seek out services (e.g., advising, tutoring, academic and career counseling) that are designed to help students with developing critical behavioral and navigation knowledge and skills
- Participate in professional development opportunities that provide the information and tools needed to facilitate the development of behavioral and navigation knowledge and skills in classrooms and after-school programs

Employers

- Incorporate measures of behavioral skills and navigation factors into organizational training, professional development programs, and performance systems (e.g., 360 ratings, quarterly or mid-year reviews)
- Provide opportunities for employees to develop and refine their behavior and navigation skills through mentoring, professional development programs (e.g., cross-training), workshops, online courses, self-guided activities, etc.
- If using behavioral skills and navigation factors for selection purposes, ensure that those factors are relevant to the job and that the measures have been validated for that job/ context

Policymakers

- Provide fiscal support for the resources needed to develop behavioral and navigation knowledge and skills throughout the K-Career continuum
- Ensure greater coordination across K–12, postsecondary, and workforce related to the alignment of objectives, programs, and measurable outcomes
- Support legislation that provides for more holistic accountability models and incorporates behavioral skills and education and career navigation factors

References

1. McAbee, S.T., Oswald, F.L., & Connelly, B.S. "Bifactor models of personality and college student performance: A broad versus narrow view." *European Journal of Personality* 28 no. 6 (2014): 604–619. doi:10.1002/per.1975.
2. Poropat, A.E. "A meta-analysis of the five-factor model of personality and academic performance." *Psychological Bulletin* 135 no. 2 (2009): 322–338. doi:10.1037/a0014996.
3. Robbins, S.B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. "Do psychosocial and study skill factors predict college outcomes? A meta-analysis." *Psychological Bulletin* 130 no. 2 (2004): 261–288. doi:10.1037/0033-2909.130.2.261.
4. Allen, J., & Robbins, S.B. "Prediction of college major persistence based on vocational interests, academic preparation, and first-year academic performance." *Research in Higher Education* 49 no. 1 (2008): 62–79. doi:10.1007/s11162-007-9064-5.
5. Barrick, M.R., & Mount, M.K. "The big five personality dimensions and job performance: A meta-analysis." *Personnel Psychology* 44 no. 1 (1991): 1–26.
6. Dudley, N.M., Orvis, K.A., Lebiecki, J.E., & Cortina, J.M. "A meta-analytic investigation of conscientiousness in the prediction of job performance: examining the intercorrelations and the incremental validity of narrow traits." *Journal of Applied Psychology* 91 no. 1 (2006) 40–57. doi:10.1037/0021-9010.91.1.40.
7. Judge, T.A., Higgins, C.A., Thoresen, C.J., & Barrick, M.R. "The Big Five personality traits, general mental ability, and career success across the life span." *Personnel Psychology* 52 no. 2 (1999) 621–651. doi:DOI 10.1111/j.1744-6570.1999.tb00174.x.
8. Oh, I-S., Guay, R.P., Kim, K., Harold, C.M., Lee, J-H., Heo, C-G., & Shin, K-H. "Fit happens globally: A meta-analytic comparison of the relationships of person-environment fit dimensions with work attitudes and performance across East Asia, Europe, and North America." *Personnel Psychology* 67 no. 1 (2014): 99–152. doi:10.1111/peps.12026.

9. Casner-Lotto, J., & Barrington, L. *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce*. (Washington, DC: Partnership for 21st Century Skills, 2006). <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED519465&site=ehost-live>.
10. Camara, W., O'Connor, R., Mattern, K., & Hanson, M.A., eds. *Beyond Academics: A Holistic Framework for Enhancing Education and Workplace Success*. Iowa City, IA: ACT, 2015.
11. Kyllonen, P.C. "Designing tests to measure personal attributes and noncognitive skills." In: Lane S, Raymond MR, Haladyna TM, eds. *Handbook of Test Development*. 2nd ed. (New York, NY: Routledge/Taylor & Francis Group, 2016), 190–211.
12. Farrington, C.A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T.S., Johnson, D.W., & Beechun, N.O. *Teaching Adolescents to Become Learners. The Role of Noncognitive Factors in Shaping School Performance: A Critical Literature Review*. (Chicago, IL: UChicago Consortium, 2012).
13. Mattern, K., Burrus, J., Camara, W., O'Connor, R., Hansen, M.A., Gambrell, J., Casillas, A., & Bobek, B. *Broadening the Definition of College and Career Readiness: A Holistic Approach. ACT Research Report Series, 2014 (5)*. Vol 5. (Iowa City, IA: ACT, 2014). <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED555591&site=ehost-live>.
14. O'Connor, M.C., & Paunonen, S.V. "Big Five personality predictors of post-secondary academic performance." *Personality and Individual Differences* 43 no. 5 (2007): 971–990. doi:10.1016/j.paid.2007.03.017.
15. Richardson, M., Abraham, C., & Bond, R. "Psychological correlates of university students' academic performance: A systematic review and meta-analysis." *Psychological Bulletin* 138 no. 2 (2012): 353–387. doi:10.1037/a0026838.
16. Choi, B.Y., Park, H., Yang, E., Lee, S.K., Lee, Y., & Lee, S.M.L. Understanding career decision self-efficacy: A meta-analytic approach. *Journal of Career Development* 39 no. 5 (2012) 443–460. doi:10.1177/0894845311398042.
17. Koen, J., Klehe, U-C., Van Vianen, A.E.M., Zikic, J., & Nauta, A. "Job-search strategies and reemployment quality: The impact of career adaptability." *Journal of Vocational Behavior* 77 no. 1 (2010): 126–139. doi:10.1016/j.jvb.2010.02.004.
18. Kristof-Brown, A.L., Zimmerman, R.D., & Johnson, E.C. "Consequences of individuals' fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit." *Personnel Psychology* 58 no. 2 (2005): 281–342.
19. Tornau, K., & Frese, M. "Construct clean-up in proactivity research: A meta-analysis on the nomological net of work-related proactivity concepts and their incremental validities." *Applied Psychology* 62 no. 1 (2013): 44–96. doi:10.1111/j.1464-0597.2012.00514.x.
20. Van Iddekinge, C.H., Putka, D.J., & Campbell, J.P. "Reconsidering vocational interests for personnel selection: The validity of an interest-based selection test in relation to job knowledge, job performance, and continuance intentions." *Journal of Applied Psychology* 96 no. 1 (2011): 13–33. doi:10.1037/a0021193.
21. Zikic, J., & Klehe, U-C. "Job loss as a blessing in disguise: The role of career exploration and career planning in predicting reemployment quality." *Journal of Vocational Behavior* 69 no. 3 (2006): 391–409. doi:10.1016/j.jvb.2006.05.007.

-
22. ACT. *Identifying Skills to Succeed in School, at Work, and in The "real World."* Iowa City, IA: ACT, 2016.
 23. Moore, J.L., Way, J.D., Casillas, A., Burrus, J., Allen, J., & Hanson, M.A. "Effects of psychosocial characteristics of middle school students on high school grades and on-time graduation." *European Journal of Psychological Assessment* 32 no. 1 (2016): 75–83. doi:10.1027/1015-5759/a000334.
 24. Rogers, M.E., & Creed, P.A. "A longitudinal examination of adolescent career planning and exploration using a social cognitive career theory framework." *Journal of Adolescence* 34 no. 1 (2011): 163–172. doi:10.1016/j.adolescence.2009.12.010.
 25. Oswald, F.L., Schmitt, N., Kim, B.H., Ramsay, L.J., & Gillespie, M.A. "Developing a biodata measure and situational judgment inventory as predictors of college student performance." *Journal of Applied Psychology* 89 no. 2 (2004): 187–207. doi:10.1037/0021-9010.89.2.187.
 26. Saks, A.M., Uggerslev, K.L., & Fassina, N.E. "Socialization tactics and newcomer adjustment: A meta-analytic review and test of a model." *Journal of Vocational Behavior* 70 no. 3 (2007): 413–446. doi:10.1016/j.jvb.2006.12.004.
 27. Riggio, R.E., & Taylor, S.J. "Personality and communication skills as predictors of hospice nurse performance." *Journal of Business Psychology* 15 no. 2 (2000): 351–359.
 28. Carr, J.C., Pearson, A.W., Vest, M.J., & Boyar, S.L. "Prior occupational experience, anticipatory socialization, and employee retention." *Journal of Management* 32 no. 3 (2006): 343–359. doi:10.1177/0149206305280749.
 29. Chirumbolo, A. "The impact of job insecurity on counterproductive work behaviors: The moderating role of Honesty–Humility personality trait." *Journal of Psychology* 149 no. 6 (2015): 554–569. doi:10.1080/00223980.2014.916250.
 30. Lay, C., Kovacs, A., & Danto, D. "The relation of trait procrastination to the big-five factor conscientiousness: an assessment with primary-junior school children based on self-report scales." *Personality and Individual Differences* 25 no. 2 (1998): 187–193. doi:10.1016/S0191-8869(98)00005-1.
 31. Allen, J., Robbins, S.B., Casillas, A., & Oh, I-S. "Third-year college retention and transfer: Effects of academic performance, motivation, and social connectedness." *Research in Higher Education* 49 no. 7 (2008): 647–664. doi:10.1007/s11162-008-9098-3.
 32. Friedman, B.A., & Mandel, R.G. "The prediction of college student academic performance and retention: Application of expectancy and goal setting theories." *Journal of College Student Retention* 11 no. 2 (2009): 227–246. doi:10.2190/CS.11.2.d.
 33. Berry, C.M., Ones, D.S., & Sackett, P.R. "Interpersonal deviance, organizational deviance, and their common correlates: A review and meta-analysis." *Journal of Applied Psychology* 92 no. 2 (2007): 410–424. doi:10.1037/0021-9010.92.2.410.
 34. Zimmerman, R.D. "Understanding the impact of personality traits on individuals' turnover decisions: A meta-analytic path model." *Personnel Psychology* 61 no. 2 (2008): 309–348.
 35. Lounsbury, J.W., Sundstrom, E., Loveland, J.L., & Gibson, L.W. "Broad versus narrow personality traits in predicting academic performance of adolescents." *Learning and Individual Differences* 14 no. 1 (2003): 67–77. doi:10.1016/j.lindif.2003.08.001.
 36. Lounsbury, J.W., Steel, R.P., Loveland, J.M., & Gibson, L.W. "An investigation of personality traits in relation to adolescent school absenteeism." *Journal of Youth and Adolescence* 33 no. 5 (2004): 457–466. doi:10.1023/B:JOYO.0000037637.20329.97.

37. Chemers, M.M., Hu, L., & Garcia, B.F. "Academic self-efficacy and first year college student performance and adjustment." *Journal of Educational Psychology* 93 no. 1 (2001): 55–64. doi:10.1037//0022-0663.93.1.55.
38. Beghetto, R.A. "Correlates of intellectual risk taking in elementary school science." *Journal of Research in Science and Teaching* 46 no 2. (2009): 210–223. doi:10.1002/tea.20270.
39. Turner, S.L., & Lapan, R.T. "Evaluation of an intervention to increase non-traditional career interests and career-related self-efficacy among middle-school adolescents." *Journal of Vocational Behavior* 66 no. 3 (2005): 516–531. doi:10.1016/j.jvb.2004.02.005.
40. Ochs, L.A., & Roessler, R.T. "Predictors of career exploration intentions: A Social Cognitive Career Theory perspective." *Rehabilitation Counseling Bulletin* 47 no. 4 (2004) 224–233. doi:10.1177/00343552040470040401.
41. Allen, J., & Robbins, S. "Effects of interest-major congruence, motivation, and academic performance on timely degree attainment." *Journal of Counseling Psychology* 57 no. 1 (2010): 23–35. doi:10.1037/a0019085.
42. Savickas, M.L. "Reinvigorating the study of careers." *Journal of Vocational Behavior* 61 no 3. (2002): 381–385. doi:10.1006/jvbe.2002.1880.
43. Hartung, P.J., Porfeli, E.J., & Vondracek, F.W. "Child vocational development: A review and reconsideration." *Journal of Vocational Behavior* 66 no. 3 (2005) 385–419. doi:10.1016/j.jvb.2004.05.006.
44. Turner, S.L., Trotter, M.J., Lapan, R.T., Czajka, K.A., Yang, P., & Brissett, A.E.A. "Vocational skills and outcomes among Native American adolescents: A test of the Integrative Contextual Model of career development." *The Career Development Quarterly* 54 no. 3 (2006): 216–226. doi:10.1002/j.2161-0045.2006.tb00153.x.
45. Moeller, A.J., Theiler, J.M., & Wu, C. "Goal setting and student achievement: A longitudinal study." *Modern Language Journal* 96 no. 2 (2012): 153–169. doi:10.1111/j.1540-4781.2011.01231.x.
46. Hill, P.L., Jackson, J.J., Roberts, B.W., Lapsley, D.K., & Brandenberger, J.W. "Change you can believe in: Changes in goal setting during emerging and young adulthood predict later adult well-being." *Social Psychology and Personality Science* 2 no. 2 (2011): 123–131. doi:10.1177/1948550610384510.
47. Payne, S.C., Youngcourt, S.S., & Beaubien, J.M. "A meta-analytic examination of the goal orientation nomological net." *Journal of Applied Psychology* 92 no. 1 (2007): 128–150. doi:10.1037/0021-9010.92.1.128.
48. Book, A.S., Volk, A.A., & Hosker, A. "Adolescent bullying and personality: An adaptive approach." *Personality and Individual Differences* 52 no. 2 (2012): 218–223. doi:10.1016/j.paid.2011.10.028.
49. de Vries, A., de Vries, R.E., Born, M.P. "Broad versus narrow traits: Conscientiousness and honesty-humility as predictors of academic criteria." *European Journal of Personality* 25 no. 5 (2011): 336–348. doi:10.1002/per.795.
50. Garcia, E. *The Need to Address Noncognitive Skills in the Education Policy Agenda*. (Washington, DC: Economic Policy Institute, 2014). <http://www.epi.org/files/2014/the-need-to-address-noncognitive-skills-12-02-2014.pdf>.

-
51. Wolters, C.A., & Hussain, M. "Investigating grit and its relations with college students' self-regulated learning and academic achievement." *Metacognition and Learning* 10 no. 3 (2015): 293–311. doi:10.1007/s11409-014-9128-9.
 52. Johnson, M.K., Rowatt, W.C., & Petrini, L. "A new trait on the market: Honesty-Humility as a unique predictor of job performance ratings." *Personality and Individual Differences* 50 no. 6 (2011): 857–862. doi:10.1016/j.paid.2011.01.011.
 53. Gonzalez-Mulé, E., Mount, M.K., & Oh, I. "A meta-analysis of the relationship between general mental ability and non-task performance." *Journal of Applied Psychology* 99 no. 6 (2014): 1222–1243. doi:10.1037/a0037547.
 54. Yeager, D.S., & Bundick, M.J. "The role of purposeful work goals in promoting meaning in life and in schoolwork during adolescence." *Journal of Adolescent Research* 24 no. 4 (2009): 423–452. doi:10.1177/0743558409336749.
 55. Janeiro, I.N. "Motivational dynamics in the development of career attitudes among adolescents." *Journal of Vocational Behavior* 76 no. 2 (2010): 170–177. doi:10.1016/j.jvb.2009.12.003.
 56. Lapan, R.T., Aoyagi, M., & Kayson, M. "Helping rural adolescents make successful postsecondary transitions: A longitudinal study." *Professional School Counseling* 10 no. 3 (2007): 266–272. doi:10.5330/prsc.10.3.u6j3j64h48p27w25.
 57. Lent, R.W., Tracey, T.J.G., Brown, S.D., Soresi, S., & Nota, L. "Development of interests and competency beliefs in Italian adolescents: An exploration of circumplex structure and bidirectional relationships." *Journal of Counseling Psychology* 53 no. 2 (2006): 181–191. doi:10.1037/0022-0167.53.2.181.
 58. Nye, C.D., Su, R., Rounds, J., & Drasgow, F. "Vocational interests and performance: A quantitative summary of over 60 years of research." *Perspectives on Psychological Science* 7 no. 4 (2012): 384–403. doi:10.1177/1745691612449021.
 59. Stringer, K., Kerpelman, J., & Skorikov, V. "Career preparation: A longitudinal, process-oriented examination." *Journal of Vocational Behavior* 79 no. 1 (2011): 158–169. doi:10.1016/j.jvb.2010.12.012.
 60. De Vos, A., Dewilde, T., & De Clippeler, I. "Proactive career behaviors and career success during the early career." *Journal of Occupational and Organizational Psychology* 82 no. 4 (2009): 761–777. doi:10.1348/096317909X471013.
 61. Gault, J., Redington, J., & Schlager, T. "Undergraduate business internships and career success: Are they related?" *Journal of Marketing Education* 22 no. 1 (2000): 45–53. doi:10.1177/0273475300221006.
 62. Greguras, G.J., & Diefendorff, J.M. "Different fits satisfy different needs: Linking person-environment fit to employee commitment and performance using Self-Determination Theory." *Journal of Applied Psychology* 94 no. 2 (2009): 465–477. doi:10.1037/a0014068.

Appendix A: ACT National Curriculum Survey Items for Behavioral Skills and Navigation Factors

Behavioral Skills Items

Grades 1–12

Prompt: Please rate the areas below according to how important each one is for attaining successful educational outcomes (e.g., earning a good GPA, graduating on time, staying out of trouble) for students in your school.

1. Acting honestly (e.g., acting sincerely and genuinely, treating others fairly)
2. Getting along with others (e.g., cooperating with other students, working effectively in groups)
3. Keeping an open mind (e.g., curiosity toward a variety of ideas and experiences, being creative)
4. Maintaining composure (e.g., remaining calm, keeping emotions under control)
5. Socializing with others (e.g., establishing friendships, maintaining a social support network)
6. Sustaining effort (e.g., staying focused, persisting through challenges, completing work)

Postsecondary

Prompt: Please rate the areas below according to how important each one is for students to be ready for success when they enter college.

See items above.

Workforce

Prompt: Please rate the areas below with regard to how important each one is for individuals to be ready for success in the workforce.

See items above.

Education and Career Navigation Items

Grades 3–12

Prompt: Please rate the areas below according to how important each one is for students to be ready for education success.

1. Awareness of the connection between academic learning and future work
2. Awareness of one's own academic strengths and weaknesses
3. Having an education plan tailored to one's knowledge and skill needs
4. Understanding that there are a variety of educational paths one can take
5. Recognizing that doing better early in one's schooling is related to doing better in later grades
6. Openness to exploring new and different activities in and out of school

Postsecondary

Prompt: Please rate the areas below according to how important each one is for students to be ready for success when they enter college.

1. Awareness of the connection between academic learning and future career options
2. Awareness of one's own academic strengths and weaknesses
3. Having a clear, identified direction (e.g., major, career)
4. Understanding what is needed to progress in one's educational path
5. Recognizing that educational/career planning is necessary throughout the postsecondary experience
6. Openness to exploring different career options and opportunities

Workforce

Prompt: Please rate the areas below with regard to how important each one is for individuals to be ready for success in the workforce.

1. Recognizing how what has been learned during education/training experiences is applicable to one's work
2. Awareness of one's own strengths and weaknesses
3. Having clear, identified career goals
4. Understanding what is needed to achieve one's career goals
5. Recognizing that career planning is necessary throughout one's work life
6. Flexibility towards changing one's job or career direction

Appendix B: Descriptive Statistics of Behavioral Skills and Navigation Factors ACT National Curriculum Survey Items

Item	Elementary School				Middle School				High School				Postsecondary				Workforce			
	Mean	Median	SD		Mean	Median	SD		Mean	Median	SD		Mean	Median	SD		Mean	Median	SD	
Acting honestly	3.73	4	.58		3.60	4	.66		3.55	4	.73		3.69	4	.61		3.55	4	.73	
Getting along with others	3.68	4	.59		3.52	4	.67		3.36	4	.76		3.23	3	.79		3.49	4	.81	
Keeping an open mind	3.54	4	.68		3.49	4	.68		3.44	4	.73		3.59	4	.65		3.16	3	.96	
Maintaining composure	3.53	4	.65		3.42	4	.69		3.33	3	.73		3.21	3	.77		3.47	4	.83	
Socializing with others	3.35	3	.76		3.13	3	.84		3.01	3	.87		2.76	3	.91		2.82	3	1.0	
Sustaining effort	3.82	4	.51		3.78	4	.48		3.77	4	.52		3.77	4	.50		3.50	4	.75	
[Grades 3–12] Awareness of the connection between academic learning and work																				
[Postsecondary] Awareness of the connection between academic learning and future career options	3.65	4	.65		3.65	4	.59		3.56	4	.67		2.99	3	.94		3.25	3	.87	
[Workforce] Recognizing how what has been learned during education/training experiences is applicable to one's work																				
[Grades 3–12, Postsecondary] Awareness of one's own academic strengths and weaknesses	3.62	4	.63		3.62	4	.61		3.59	4	.63		3.18	3	.83		3.14	3	.94	
[Workforce] Awareness of one's own strengths and weaknesses																				
[Grades 3–12] Having an education plan tailored to one's knowledge and skill needs																				
[Postsecondary] Having a clear, identified direction (e.g., major, career)	3.37	4	.82		3.25	3	.79		3.17	3	.84		1.98	3	1.0		2.72	3	1.0	
[Workforce] Having clear, identified career goals																				

Item	Elementary School			Middle School			High School			Postsecondary			Workforce		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
[Grades 3–12] Understanding that there are a variety of educational paths one can take	3.50	4	.78	3.50	4	.67	3.47	4	.70	2.92	3	.88	2.79	3	1.0
[Postsecondary] Understanding what is needed to progress in one's educational path															
[Workforce] Understanding what is needed to achieve one's career goals															
[Grades 3–12] Recognizing that doing better early in one's schooling is related to doing better in later grades															
[Postsecondary] Recognizing that educational/career planning is necessary throughout the postsecondary experience	3.55	4	.74	3.44	4	.77	3.34	4	.83	2.77	3	.97	2.65	3	1.1
[Workforce] Recognizing that career planning is necessary throughout one's work life															
[Grades 3–12] Openness to exploring new and different activities in and out of school															
[Postsecondary] Openness to exploring different career options and opportunities	3.50	4	.73	3.46	4	.70	3.39	4	.74	2.99	3	.92	2.61	3	1.1
[Workforce] Flexibility towards changing one's job or career direction															



ACT is an independent, nonprofit organization that provides assessment, research, information, and program management services in the broad areas of education and workforce development. Each year, we serve millions of people in high schools, colleges, professional associations, businesses, and government agencies, nationally and internationally. Though designed to meet a wide array of needs, all ACT programs and services have one guiding purpose—helping people achieve education and workplace success.

For more information, visit www.act.org.

