# APPENDICES

# WORKFORCE CONNECTIONS

## KEY "SOFT SKILLS" THAT FOSTER YOUTH WORKFORCE SUCCESS:

Toward a Consensus Across Fields

USAID FROM THE AMERICAN PEOPLE
Child TRENDS
fhi360 THE SCIENCE OF IMPROVING LIVES

# APPENDICES

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## APPENDIX A. FRAMEWORKS REVIEWED

**FRAMEWORKS OF SOFT SKILLS**

These are frameworks of types of soft skills, organized by citation.

| Citation | Framework |
|---|---|
| **Anderson, C., Skills in Demand: Uncovering the common skills for high paying, high growth jobs of the near future, in Education Week Webinar July 2014. 2014, IDC.** | C: Communication: listen, read, write to uncover agreement and misunderstanding, seek information, evaluate sources to identify discrepancies, motivation and bias<br><br>I: Integration: weigh relevance, interpret, extrapolate, interpolate, analyze, evaluate and decide based on principles and information<br><br>P: Presentation: Develop and present a reasoned and persuasive position, articulate strengths and weaknesses and incorporate feedback to improve both logic and persuasiveness. |
| **Benson, P. L., Scales, P. C., & Syvertsen, A. K. (2011). The contribution of the developmental assets framework to positive youth development theory and practice. In R. M. Lerner, J. V. Lerner, & J. B. Benson (Eds.). Advances in child development and behavior, vol. 41 (pp. 197--230). Burlington: Academic Press.**<br><br>**Benson, P. L., Scales, P. C., Hamilton, S. F., & Sesma, A. Jr. (2006). Positive youth development: Theory, research, and application. In W. W. Damon & R. M. Lerner (Eds.), Handbook of child psychology (6th ed.), volume 1, Theoretical models of human development (894–941). New York: John Wiley.** | **External Assets**<br><br>SUPPORT<br><br>1. Family Support: Family life provides high levels of love and support.<br>2. Positive Family Communication: Young person and his or her parent(s) communicate positively, and young person is willing to seek advice and counsel from parents.<br>3. Other Adult Relationships: Young person receives support from three or more nonparent adults.<br>4. Caring Neighborhood: Young person experiences caring neighbors.<br>5. Caring School Climate: School provides a caring, encouraging environment.<br>6. Parent Involvement in Schooling: Parent(s) are actively involved in helping the child succeed in school.<br><br>EMPOWERMENT<br><br>7. Community Values Youth: Young person perceives that adults in the community value youth.<br>8. Youth as Resources: Young people are given useful roles in the community.<br>9. Service to Others: Young person serves in the community one hour or more per week.<br>10. Safety: Young person feels safe at home, school, and in the neighborhood.<br><br>BOUNDARIES AND EXPECTATIONS<br><br>11. Family Boundaries: Family has clear rules and consequences and monitors the young person's whereabouts.<br>12. School Boundaries: School provides clear rules and consequences. |

13. Neighborhood Boundaries: Neighbors take responsibility for monitoring young people's behavior.
14. Adult Role Models: Parent(s) and other adults model positive, responsible behavior.
15. Positive Peer Influence: Young person's best friends model responsible behavior.
16. High Expectations: Both parent(s) and teachers encourage the young person to do well.

CONSTRUCTIVE USE OF TIME

17. Creative Activities: Young person spends three or more hours per week in lessons or practice in music, theater, or other arts.
18. Youth Programs: Young person spends three or more hours per week in sports, clubs, or organizations at
school and/or in community organizations.
19. Religious Community: Young person spends one hour or more per week in activities in a religious institution.
20. Time at Home: Young person is out with friends "with nothing special to do" two or fewer nights per week.

**Internal Assets**

COMMITMENT TO LEARNING

21. Achievement Motivation: Young person is motivated to do well in school.
22. School Engagement: Young person is actively engaged in learning.
23. Homework: Young person reports doing at least one hour of homework every school day.
24. Bonding to School: Young person cares about his or her school.
25. Reading for Pleasure: Young person reads for pleasure three or more hours per week.

POSITIVE VALUES

26. Caring: Young Person places high value on helping other people.
27. Equality and Social Justice: Young person places high value on promoting equality and reducing hunger and poverty.
28. Integrity: Young person acts on convictions and stands up for his or her beliefs.
29. Honesty: Young person "tells the truth even when it is not easy."
30. Responsibility: Young person accepts and takes personal responsibility.
31. Restraint: Young person believes it is important not to be sexually active or to use alcohol or other drugs.

SOCIAL COMPETENCIES

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|---|---|
| | 32. Planning and Decision Making: Young person knows how to plan ahead and make choices.<br>33. Interpersonal Competence: Young person has empathy, sensitivity, and friendship skills.<br>34. Cultural Competence: Young person has knowledge of and comfort with people of different cultural/racial/ethnic backgrounds.<br>35. Resistance Skills: Young person can resist negative peer pressure and dangerous situations.<br>36. Peaceful Conflict Resolution: Young person seeks to resolve conflict nonviolently.<br><br>POSITIVE IDENTITY<br><br>37. Personal Power: Young person feels he or she has control over "things that happen to me."<br>38. Self-Esteem: Young person reports having a high self-esteem.<br>39. Sense of Purpose: Young person reports that "my life has a purpose."<br>40. Positive View of Personal Future: Young person is optimistic about his or her personal future. |
| **Blades, R., Fauth, B., & Gibb, J. (2012). Measuring employability skills: A rapid review to inform development of tools for project evaluation. London: National Children's Bureau.** | Personal: Confidence, self-esteem, motivation, self-efficacy<br><br>Interpersonal: Social/interpersonal skills, communication skills, teamwork, assertiveness<br><br>Self-management: Self-control, reliability, positive attitude, presentation<br><br>Initiative & Delivery: Planning, problem-solving, prioritizing |
| **Boyatzis (1982) as cited in Kantrowitz, T. M. (2005). Development and construct validation of a measure of soft skills performance. (Doctor of Philosophy in the School of Psychology), Georgia Institute of Technology.** | Goal and action management: efficiency orientation, proactivity, diagnostic use of concepts, concern with impact<br><br>Leadership: self-confidence, use of oral presentations, logical thought, conceptualization<br><br>Human resource management: Use of socialized power, positive regard, managing group processes, accurate self-assessment<br><br>Directing subordinates: developing others, use of unilateral power, spontaneity<br><br>Focus on others: self-control, perceptual objectivity, stamina and adaptability, concern with close relationships<br><br>Specialized knowledge |

**Brewer, L. (2013). Enhancing youth employability: What? Why? and How? Guide to core work skills: ILO.**

Table 2: Core skills for employability

| Broad skill category | Core work skills/abilities |
|---|---|
| Learning to learn | • think abstractly<br>• use learning techniques to acquire and apply new knowledge and skills<br>• organize, process, and maintain information<br>• interpret and communicate information<br>• pursue independent learning<br>• conduct systematic inquiry; and follow through to find answers<br>• take responsibility for own learning<br>• spend time effectively<br>• stay on task<br>• select the best approach for tasks<br>• begin, follow through and complete tasks<br>• manage own learning<br>• adaptable<br>• works safely<br>• is willing to learn<br>• uses time efficiently without sacrificing quality |
| Communication | • competent in reading<br>• write to the needs of an audience<br>• write effectively in the languages in which the business is conducted<br>• listen and communicate effectively<br>• listen to understand and learn<br>• read independently<br>• read, comprehend and use materials, including graphs, charts, displays<br>• understand and speak the language which the business is conducted<br>• use numeracy effectively<br>• articulate own ideas and vision |
| Team work | • interact with co-workers<br>• understand and contribute to the organization's goals<br>• work within the culture of the group<br>• plan and make decisions with others and support the outcomes<br>• work in teams or groups<br>• respect the thoughts and opinions of others in the group<br>• coach, mentor and give feedback<br>• lead effectively<br>• lead when appropriate<br>• mobilize a group for high performance<br>• manage oneself at work<br>• accountability for actions taken<br>• build partnerships and coordinate a variety of experiences<br>• work toward group consensus in decision-making<br>• value others' input<br>• accept feedback<br>• resolve conflicts |
| Problem-solving | • think creatively<br>• solve problems independently<br>• test assumptions<br>• identify problems<br>• take the context of data and circumstances into account<br>• adapt to new circumstances<br>• ability to identify and suggest new ideas to get the job done (initiative)<br>• collect, analyse and organize information (planning and organization)<br>• ability to plan and manage time, money and other resources to achieve goals |

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|---|---|
| **Carnevale, A. P. (2013) 21st century competencies for college and career readiness. NCDA Career Developments.** | Knowledge: communications and media, sales and marketing, production and processing, personnel and human resources, public safety and security, clerical, computers and electronics, mathematics, English language, customer and personal service<br><br>Skills: active learning, complex problem solving, writing, time management, judgment and decision making, coordination, social perceptiveness, monitoring, reading comprehension, critical thinking, speaking, active listening<br><br>Abilities: writing expression, information ordering, inductive reasoning, speech clarity, deductive reasoning, written comprehension, near vision, problem sensitivity, oral expression, oral comprehension<br><br>Non-cognitive competencies: Work values, work interest, personal qualities |
| **Chegg. (2013). Bridge that Gap: Analyzing the Student Skill Index.** | Chegg's "Office Street Smarts"<br>Ability to make a persuasive argument<br>Ability to write to encourage action or make a request<br>Ability to communicate with authority figures and clients<br>Ability to collaborate with people from diverse backgrounds<br>Ability to complete a project as part of a team |
| **Conrad, C. A. (1999). Soft skills and the minority work force: A guide for informed discussion. Washington, DC: Joint Center for Political and Economic Studies.** | Thinking/cognitive skills:<br>Identifies problems<br>Considers and evaluates alternative solutions weighing their risks and benefits<br>Formulates and reaches decisions logically<br>Separates fact from opinion<br>Adjusts to unanticipated situations by applying established rules and facts<br>Works out new ways of handling recurring problems<br>Determines what is needed to accomplish work assignments<br><br>Oral communication skills:<br>Communicates in oral messages appropriate to listeners and situations<br>Understands and gives instructions<br>Obtains clarifies and verifies information through questioning<br><br>Personal qualities/work ethic:<br>Displays self-esteem<br>Knows self-management<br>Takes responsibility<br>Expresses willingness to learn<br>Is motivated<br>Understands need for organization, supervision, rules, policies, and procedures<br><br>Interpersonal/teamwork skills:<br>Conducts self according to the expressed or unexpressed norms of a group and participates according to his or her talents |

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| | Demonstrates respect for opinions, customs, and individual differences of others, Handles conflict maturely<br>Participates in group decisions<br>Appreciates the importance and value of humor<br>Offers and accepts criticism constructively |
| **ECOTEC (1998). Soft indicators: Demonstrating progress and recognising achievement, ESF Employment Initiative Support Unit.as cited in Blades, R., Fauth, B., & Gibb, J. (2012). Measuring employability skills: A rapid review to inform development of tools for project evaluation. London: National Children's Bureau.** | Attitudinal skills: self-esteem, positive regard for others, taking responsibility for own life, confidence, motivation, attitude, self-awareness, reduced depression/anxiety, aspirations<br><br>Life skills: social skills, attendance, time-keeping, personal presentation, personal hygiene, relevant conversation<br><br>Transferable skills: team work, problem solving, questioning, evaluating, initiative language skills, communication |
| **Education Audiovisual & Culture Executive Agency. (2011). MODEs: MODernising higher Education through Soft skills accreditation.** | Social: Communication, customer/user orientation, teamwork, leadership, negotiation, conflict management, contact network<br><br>Methodological: Creativity/innovation, decision making, management skills, analysis skills, adaptability to changes, results orientation, continuous improvement<br><br>Personal: Learning skills, commitment, professional ethics, tolerance to stress, self-awareness, life balance, culture adaptability |

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|---|---|
| **Education Development Center, Work Ready Now! EDC Work Readiness Program, Education Development Center: Boston, MA.** | Personal Development: learning styles, values and interests, tracking progress, assessing skills, goal setting<br><br>Interpersonal Communications: communication in the workplace, working as a team member, following instructions, speaking and listening, customer service, giving feedback<br><br>Work Habits and Conduct: workplace behaviors and attitudes, identifying and applying for jobs, balancing work and home life, time management, interviewing<br><br>Leadership: organizing and motivating others, leadership styles, effective leaders, conflict resolution, problem solving, team building<br><br>Safety and Health at Work: healthy lifestyles, stress management, hazards in the workplace, emergencies and accidents, health and safety laws and practices<br><br>Worker and Employer Rights and Responsibilities: Workers' rights, local labor laws, employer responsibilities<br><br>Financial Fitness: Saving, budgeting, managing money, financial institutions, making financial decisions<br><br>Introduction to Entrepreneurship: risk taking, types of businesses, local business people, readiness for entrepreneurship, characteristics of entrepreneurs |

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| **Employability Skills Profile from Bloom, M & Kitagawa, K. (1999). Understanding Employability Skills. The Conference Board of Canada.** | The Critical Skills Required of the Canadian Workforce:<br><br>Academic Skills:<br>Communicate<br>Understand and speak the languages in which business is conducted<br>Listen to understand and learn<br>Read, comprehend and use written materials,including graphs, charts and displays<br>Write effectively in the languages in which businessis conducted<br>Think<br>Think critically and act logically to evaluate situations, solve problems and make decisions<br>Understand and solve problems involving mathematics and use the results<br>Use technology, instruments, tools and information systems effectively<br>Access and apply specialized knowledge fromvarious fields (e.g., skilled trades, technology, physical sciences, arts and social sciences)<br>Learn<br>Continue to learn for life<br><br>Personal Management Skills:<br>Positive Attitudes and Behaviors<br>Self-esteem and confidence<br>Honesty, integrity and personal ethics<br>A positive attitude toward learning, growth and personal health<br>Initiative, energy and persistence to get the job done<br><br>Responsibility<br>The ability to set goals and priorities in work and personal life<br>The ability to plan and manage time, money and otherresources to achieve goals<br>Accountability for actions taken<br><br>Adaptability<br>A positive attitude toward change<br>Recognition of and respect for people's diversity and individual differences<br>The ability to identify and suggest new ideas to get thejob done—creativity<br><br>Teamwork Skills/Work with Others<br>Understand and contribute to the organization's goals<br>Understand and work within the culture of the group<br>Plan and make decisions with others and support the outcomes<br>Respect the thoughts and opinions of others in thegroup<br>Exercise "give and take" to achieve group results<br>Seek a team approach as appropriate<br>Lead when appropriate, mobilizing the group for high performance |

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| **Employability Skills Profile from Bloom, M & Kitagawa, K. (1999). Understanding Employability Skills. The Conference Board of Canada.** | Being (attitudes)<br>Personal management: self-esteem and confidence, positive attitude toward learning, accountability toward change, positive attitude toward change, recognition and respect of diversity.<br>Teamwork: Respect the thoughts and opinions of others.<br><br>Having (behaviors)<br>Academic: Continue to learn for life<br>Personal management: Have honesty integrity and personal ethics, have initiative energy and persistence, have ability to set goals and priorities, have ability to plan and manage time, have ability to identify and suggest new ideas<br>Teamwork: understand and contribute to the organization's goals, understand and work within the culture of the group, exercise give and take, seek a team approach, lead when appropriate, plan and make decisions with others<br><br>Doing (skills)<br>Academic: understand and speak the languages of business, listen to understand and learn, read comprehend and use written materials, write effectively in languages of business, think critically, understand and solve problems, access and apply specialized knowledge, use technology |
| **Ferber, T., Pittman, K., & Marshall, T. (n.d.). Steering a course toward effective youth policies: Dashboards for youth. Washington, DC: The Forum for Youth Investment** | Learning (developing positive basic and applied academic attitudes, skills and behaviors)<br><br>Working (developing positive vocational attitudes, skills and behaviors)<br><br>Thriving (developing physically healthy attitudes, skills and behaviors)<br><br>Connecting (developing positive social attitudes, skills and behaviors)<br><br>Leading (developing positive civic attitudes, skills and behaviors) |
| **Finegold, D. and A.S. Notabartolo, 21st-century competencies and their impact: An interdisciplinary literature review. (for Hewlett Foundation)** | Analytic skills: Critical thinking, problem solving, decision making, research and inquiry<br><br>Interpersonal skills: Communication, collaboration, leadership and responsibility<br><br>Ability to execute: Initiative and self direction, productivity<br><br>Information processing: Information literacy, media literacy, digital citizenship, ICT operations and concepts<br><br>Capacity for change/learning: creativity/innovation, adaptive learning/learning to learn, flexibility |

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| **From Finegold & Notabartolo (above): New Zealand Department of Labour Spotlight Competence Framework (Hampson & Junior, 2009)** | Shaping Awareness: capacity to develop, focus and shape your own and other participants' awareness by:<br>A1) Sensing contexts or situations<br>A2) Monitoring and guiding reactions<br>A3) Judging impacts<br><br>Interacting and relating: Capacity to negotiate interpersonal, organizational, and intercultural relationships by:<br>B1) Negotiating boundaries<br>B2) Communicating verbally and nonverbally<br>B3) Connecting across cultures<br><br>Coordinating: Capacity to organize your own work, link it into the overall workflow and deal with obstacles and disruptions by:<br>C1) Sequencing and combining activities<br>C2) Interweaving your activities with others<br>C3) Maintaining and/or restoring workflow |

**Guerra, N., Modecki, K., & Cunningham, W. (2014). Developing social-emotional skills for the labor market: The PRACTICE model. World Bank Policy Research Working Paper (7123).**

**Table 1. PRACTICE Skills, Sub-Skills, Big Five Traits, and Biological Foundations**

| PRACTICE: Skills for Success | Sub-Skills (Skills, Attitudes, Beliefs, Behaviors) | Related Big Five Personality Traits | Biological Foundations |
|---|---|---|---|
| Problem-Solving | Social-information processing skills<br>Decision making<br>Planning skills | Conscientiousness | Executive Attention Systems—ability to focus attention and to inhibit negative emotionality |
| Resilience | Stress resistance<br>Perseverance<br>Optimism<br>Adaptability | Conscientiousness (*Grit*)<br>Neuroticism | Biological system that is focused on preventing harm |
| Achievement Motivation | Mastery orientation<br>Sense of purpose<br>Motivation to learn | Conscientiousness (*Grit*)<br>Openness to Experience | Biological tendency to seek out new environments<br>Orienting sensitivity—tendency to respond to sensory stimulation |
| Control | Delay of gratification<br>Impulse control<br>Attentional focus<br>Self management | Conscientiousness | Executive Attention Systems—to focus attention and to inhibit negative emotionality<br>Self Regulatory System—delay of gratification |
| Teamwork | Empathy/Prosocial<br>Low aggression<br>Communication skills<br>Relationship skills | Extraversion<br>Agreeableness | Biological system promoting active approach and exploration—tendency to enjoy social interaction and positive moods |
| Initiative | Agency<br>Internal locus of control<br>Leadership | Conscientiousness<br>Openness to Experience | Biological tendency to seek out new environments<br>Orienting sensitivity—tendency to respond to sensory stimulation |
| Confidence | Self efficacy<br>Self esteem<br>Positive identity | Neuroticism (Emotional Stability) | Biological system that is focused on preventing harm |
| Ethics | Honesty<br>Fairness orientation<br>Moral reasoning | Conscientiousness | Biological system promoting active approach and exploration—tendency to enjoy social interaction and positive moods |

**Hinds-Smith, S. (2009). Competency requirements of managers in hotels in Jamaica: The implications of soft skills. Rochester Institute of Technology, Rochester, NY.**

Communication skills: asks questions, delivers presentations, uses humor to make a point, voices opinions, shows enthusiasm

Persuasion skills: tries new ideas, gets buy in, seeks information, negotiates, influences others

Technical skills: develops strategies, multitasks, spends money wisely, delegates responsibilities, organizes work

Interpersonal skills: admits mistakes, develops rapport, listens to concerns, resolves conflict, promotes a team environment

Leadership: commands the respects of others, models behavior he/she would like to see in others, acts decisively, attends to details, defines objectives

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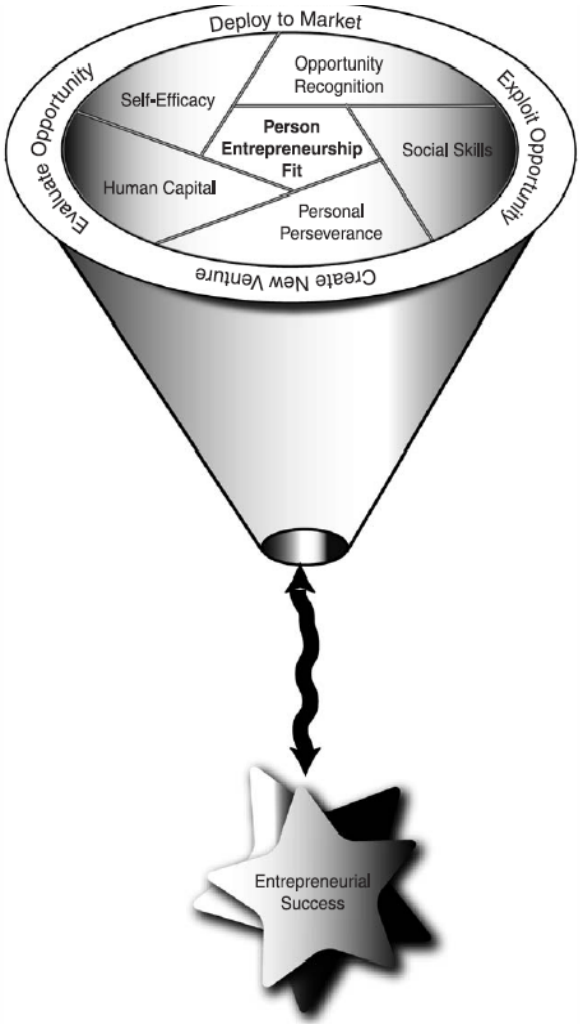
| **IYF Passport to Success unit topics for employability track** | Personal competencies<br>Problem solving & managing conflict<br>Healthy behaviors<br>Effective work habits<br>Skills for professional growth<br>Service learning |
| **Kantrowitz, T. M. (2005). Development and construct validation of a measure of soft skills performance. (Doctor of Philosophy in the School of Psychology), Georgia Institute of Technology.** | Communication skills<br>Leadership skills<br>Self-management skills<br>Decision making/problem solving skills<br>Management skills<br>Organization skills<br>Interpersonal skills<br>Political skills<br>Analysis/creativity skills<br>Selling skills |

**(Learning Metrics Task Force, 2013)**

**Table 1. Domains and Subdomains of Learning by Educational Stage**

| Domain | Subdomains | | |
|---|---|---|---|
| | Early Childhood | Primary | Postprimary |
| **Physical well-being** | • Physical health and nutrition<br>• Health knowledge and practice<br>• Safety knowledge and practice<br>• Gross, fine, and perceptual motor | • Physical health and hygiene<br>• Food and nutrition<br>• Physical activity<br>• Sexual health | • Health and hygiene<br>• Sexual and reproductive health<br>• Illness and disease prevention |
| **Social and emotional** | • Self-regulation<br>• Emotional awareness<br>• Self-concept and self-efficacy<br>• Empathy<br>• Social relationships and behaviors<br>• Conflict resolution<br>• Moral values | • Social and community values<br>• Civic values<br>• Mental health and well-being | • Social awareness<br>• Leadership<br>• Civic engagement<br>• Positive view of self and others<br>• Resilience/"grit"<br>• Moral and ethical values<br>• Social sciences |
| **Culture and the arts** | • Creative arts<br>• Self- and community-identity<br>• Awareness of and respect for diversity | • Creative arts<br>• Cultural knowledge | • Creative arts<br>• Cultural studies |
| **Literacy and communication** | • Receptive language<br>• Expressive language<br>• Vocabulary<br>• Print awareness | • Oral fluency<br>• Oral comprehension<br>• Reading fluency<br>• Reading comprehension<br>• Receptive vocabulary<br>• Expressive vocabulary<br>• Written expression/ composition | • Speaking and listening<br>• Writing<br>• Reading |
| **Learning approaches and cognition** | • Curiosity and engagement<br>• Persistence and attention<br>• Autonomy and initiative<br>• Cooperation<br>• Creativity<br>• Reasoning and problem solving<br>• Early critical thinking skills<br>• Symbolic representation | • Persistence and attention<br>• Cooperation<br>• Autonomy<br>• Knowledge<br>• Comprehension<br>• Application<br>• Critical thinking | • Collaboration<br>• Self-direction<br>• Learning orientation<br>• Persistence<br>• Problem Solving<br>• Critical decisionmaking<br>• Flexibility<br>• Creativity |

**Markman, G. D., & Baron, R. A. (2003). Person-entrepreneurship fit: why some people are more successful as entrepreneurs than others. Human Resource Management Review, 13, 281-301.**



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|---|---|
| **McNeil, B. Reeder, N., & Rich, J. (2012). A framework of outcomes for young people. The Young Foundation.** | Communication: Explaining; expressing; presenting; listening; questioning; using different ways of communicating<br><br>Confidence and agency: Self-reliance; self-esteem, self-efficacy, self-belief, ability to shape your own world and the world around you<br><br>Planning and problem solving: Navigating resources; organizing, setting and achieving goals; decision making; researching; analyzing; critical thinking; questioning and challenging; evaluating risks; reliability<br><br>Relationships and leadership: Motivating others; valuing and contributing to team-working; negotiating; establishing positive relationships; interpreting others; managing conflict; empathizing<br><br>Creativity: Imagining alternative ways of doing things; applying learning in new contexts; enterprising; innovating; remaining open to new ideas<br><br>Resilience and determination: Self-disciplined; self-management; self-motivated; concentrating; having a sense of purpose; persistent; self-controlled<br><br>Managing feelings: Reviewing; self-awareness; reflecting; self-regulating; self-accepting |
| **ACT. (2011). National Career Readiness Certificate Plus. http://www.act.org/newsroom/act-launches-enhanced-national-career-readiness-certificate/** | Work discipline: productivity and dependability<br>Teamwork: tolerance, communication, and attitude<br>Customer service orientation: interpersonal skills and perseverance<br>Managerial Potential: Persuasion, enthusiasm, and problem solving |

**Network for Teaching Entrepreneurship: The Entrepreneurial Mindset Index, https://www.nfte.com/why/emi**

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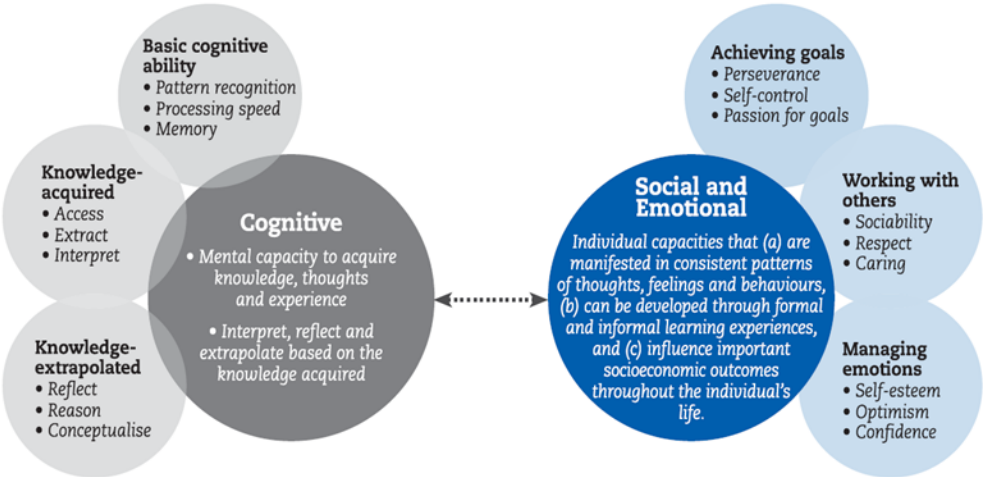
|---|---|
| **OECD. (2001). The definition and selection of key competencies: Executive Summary. Paris: OECD.** | Reflectiveness (metacognition, creative abilities, taking a critical stance)<br><br>Category 1: Using tools interactively<br>a. Ability to use language, symbols, and text interactively<br>b. Ability to use knowledge and information interactively<br>c. Ability to use technology interactively<br><br>Category 2: Interacting in heterogeneous groups<br>a. Ability to relate well to others<br>b. Ability to cooperate<br>c. Ability to manage and resolve conflicts<br><br>Category 3: Acting autonomously<br>a. Ability to act within the big picture<br>b. Ability to form and conduct life plans and personal projects<br>c. Ability to assert rights, interests, limits, and needs |
| **OECD. (2015). Skills for social progress: The power of social and emotional skills OECD Skills Studies: OECD Publishing.** |  |
| **OECD. (2001)."Chapter 4: Competencies for the Knowledge Economy". Education Policy Analysis 2001. OECD Publishing: cites Stasz, 2000 and the National Employer Survey in 1994 and 1997 for this framework** | Inter-personal skills: team work and ability to collaborate in pursuit of a common objective; leadership capabilities<br><br>Intra-personal skills: motivation and attitude, ability to learn, problem-solving skills, effective communication with colleagues and clients, analytical skills |

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|---|---|
| **Ouane, Adama. (2002). Defining and Selecting Key Competencies in Lifelong Learning. From: Contributions to the second DeSeCo Symposium, D.S. Rychen, L.H. Salganik, and M.E. Mclaughlin, Editors. 2002, Swiss Federal Statistical Office.** | UNESCO's Institute for Education Competencies for Lifelong Learning (LLL):<br>Communicating<br>Being able to live together<br>Critical thinking<br>Being able to change<br>Creativity |
| **Partnership for 21st Century Skills. (2009). 21st Century Student Outcomes.** | 21st century themes: global awareness, financial economic business and entrepreneurial literacy, civic literacy, health literacy<br><br>Learning and innovation skills: creativity and innovation (think creatively, work creatively with others, implement innovations), critical thinking and problem solving (reason effectively, use systems thinking, make judgments and decisions, solve problems), communication and collaboration (communicate clearly, collaborate with others),<br><br>Information, media and technology skills: information literacy (access and evaluate information, use and manage information), media literacy (analyze media, create media products), ICT (information, communications, and technology) literacy (apply technology effectively)<br><br>Life and career skills: flexibility and adaptability (adapt to change, be flexible), initiative and self-direction (manage goals and time, work independently, be self-directed learners), social and cross-cultural skills (interact effectively with others, work effectively in diverse teams), productivity and accountability (manage projects, produce results), leadership and responsibility (guide and lead others, be responsible to others) |
| **Partnership for 21st Century Skills. Up to the Challenge: The Role of Career and Technical Education and 21st Century Skills in College and Career Readiness** | 4Cs:<br>Critical thinking and problem<br>Communication<br>Collaboration<br>Creativity and innovation |

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| **Pellegrino, J. W., & Hilton, M. (2012). Education for life and work: Developing transferable knowledge and skills in the 21st century. Washington, DC: National Academy of Sciences.** | The Cognitive Domain includes three clusters of competencies: cognitive processes and strategies, knowledge, and creativity. These clusters include competencies, such as critical thinking, information literacy, reasoning and argumentation, and innovation.<br><br>The Intrapersonal Domain includes three clusters of competencies: intellectual openness, work ethic and conscientiousness, and positive core self-evaluation. These clusters include competencies, such as flexibility, initiative, appreciation for diversity, and metacognition (the ability to reflect on one's own learning and make adjustments accordingly).<br><br>The Interpersonal Domain includes two clusters of competencies: teamwork and collaboration and leadership. These clusters include competencies, such as communication, collaboration, responsibility, and conflict resolution. |
| **Smith, S., Donohue, P., & Bligh, E. (2014). Youth Livelihood Success: Beyond the Traditional Skill Set: International Rescue Committee.** | |

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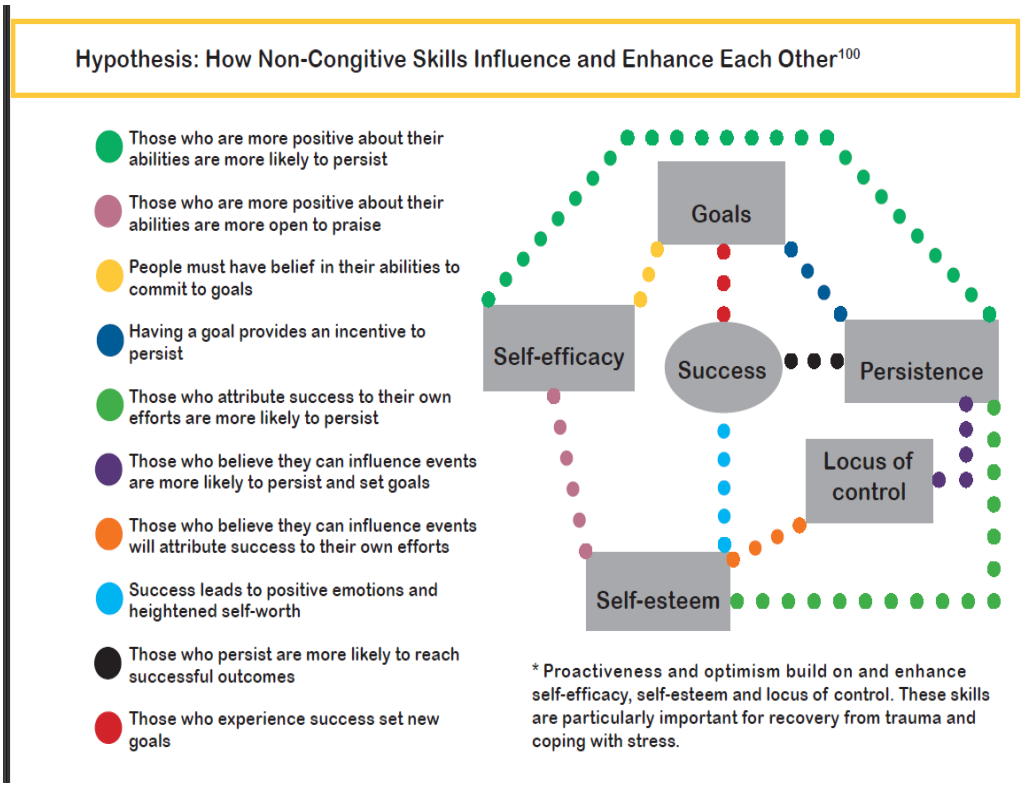
| **Smith, S., Donohue, P., & Bligh, E. (2014). Youth Livelihood Success: Beyond the Traditional Skill Set: International Rescue Committee.** |  |
| **SRI International. (2005). Getting ready for the Work Readiness Credential: A guide for trainers and instructors of job seekers. National Work Readiness Council.** | Communication skills: Speak so others can understand, listen actively, read with understanding, observe critically<br><br>Interpersonal skills: Cooperate with others, resolve conflict and negotiate<br><br>Decision-making skills: Use math to solve problems and communicate, solve problems and make decisions<br><br>Lifelong learning skills: Take responsibility for learning |

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|---|---|
| **Stein, S. (2000). Equipped for the future content standards: What adults need to know and be able to do in the 21st century. Washington, DC: National Institution for Literacy.** | Communication skills: Read with understanding, convey ideas in writing, speak so others can understand, listen actively, observe critically<br><br>Decision-making skills: Solve problems and make decisions, plan, use math to solve problems and communicate<br><br>Interpersonal skills: Cooperate with others, guide others, advocate and influence, resolve conflict and negotiate<br><br>Lifelong learning skills: Take responsibility for learning, learn through research, reflect and evaluate, use information and communications technology |
| **The Tuning Project generic learning outcomes, as presented in Gordon, J., Halasz, G., Krawczyk, M., Leney, T., Michel, A., Pepper, D., Putkiewicz, E., & Wisniewski, J. (2009). Key competences in Europe: Opening doors for lifelong learners across the school curriculum and teacher education. CASE Network Reports. Warsaw: Center for Social and Economic Research. See http://www.unideusto.org/tuningeu/ for more information** | Instrumental competencies: Capacity for analysis and synthesis, capacity for organization an planning, basic general knowledge, grounding in professional knowledge, oral and written communication, knowledge of a second language, computing skills, information management skills, problem solving, decision making<br><br>Interpersonal competences: critical and self-critical abilities, teamwork, interpersonal skills, ability to work in inter-disciplinary team, ability to communicate with experts in other fields, appreciation of diversity and multiculturalism, ability to work in international context, ethical commitment<br><br>Systemic competences: Capacity to apply knowledge in practice, research skills, capacity to learn, capacity to adapt to new situations, creativity, leadership, understanding other cultures, ability to work autonomously, project design and management, initiative and entrepreneurial spirit, concern for quality, will to succeed |

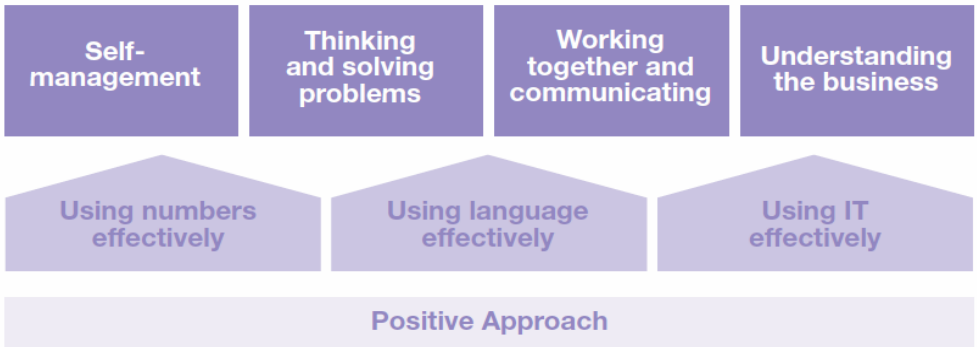
**Trier, Uri Peter. (2002). Key Competencies in OECD Countries - Similarities and Differences.**
**From: Contributions to the second DeSeCo Symposium, D.S. Rychen, L.H. Salganik, and M.E. Mclaughlin, Editors. 2002, Swiss Federal Statistical Office.**
**(This chart shows the differing points of emphasis between education and employment sectors from all 12 country reports to DeSeCo.)**

| Competence areas | Emphasis in education sector | Emphasis in economic sector |
|---|---|---|
| Self-management | Autonomous learning, meta-cognitive competencies | Action orientation, responsibility, taking decisions and risks, resource management, planning, shaping the workplace, management of time, assessing the impact and effectiveness of action, flexibility |
| Communication competencies | Linguistic competencies, foreign languages, cultural identity, intercultural competencies, media competence | IT competencies, presentation capabilities, internationalization |
| Learning competencies | Learning in domain-specific settings, mastering of learning strategies, metalearning and reflection, evaluative skills | Lifelong learning, motivation to learn, methodological skills, applying knowledge, putting learning into context in the workplace |
| Social competencies/ Teamwork/Cooperation | Social comprehension, positive social attitude | Interpersonal competencies, working in teams, cooperating and negotiating, resolving conflicts |
| Value orientation | Ethics, social and democratic values, tolerance, awareness of human rights | Personal virtues: integrity, reliability, loyalty, honesty |
| Creativity (medium weighting) | Aesthetic education, expression (medium weighting) | Innovation and change, entrepreneurship |
| Health, physical skills, attitude to body (medium weighting) | Physical education | Risk behavior, resilience |
| Ecological orientation | Attitudes to natural environment | Ecological responsibility at the work place |

**Table II: Competence Areas as Emphasized by the Education and Economic Sectors**

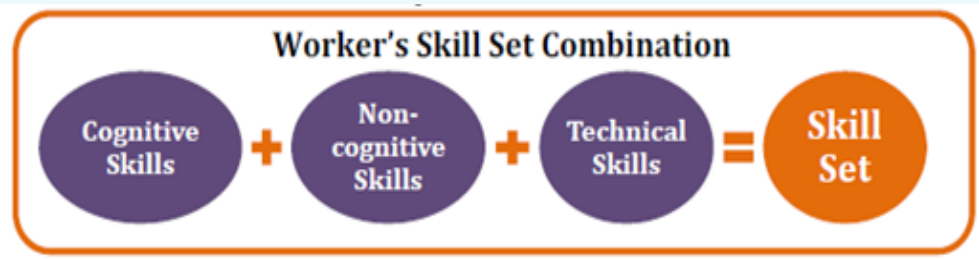
**U.S. Department of Labor, Office of Job Corps. (2013). Policy Requirements Handbook.**

Workplace relationships and ethics
Interpersonal skills
Personal growth and development
Independent living
Career and personal planning
Communications
Multicultural awareness
Information management

| | |
|---|---|
| **UK Commission for Employment and Skills. (2009). The employability challenge full report. South Yorkshire: UK Commission for Employment and Skills.** |  |
| **Wilson-Ahlstrom, A., Yohalem, N., DuBois, D., Ji, P., & Hilaker, B. (2014). From soft skills to hard data: Measuring youth program outcomes. Washington, DC: The Forum for Youth Investment.** | Communication: Self-expression, listening, public speaking and recognizing nonverbal cues.<br><br>Relationships and collaboration: Interpersonal skills, teamwork, flexibility and cultural competence.<br><br>Critical thinking and decision-making: Reasoning, making judgments and decisions, responsible problem-solving, creativity; and accessing, evaluating and using information.<br><br>Initiative and self-direction: Self-awareness, setting and working toward goals, management, working independently, and guiding and leading others. |
| **Yoshida, T., Yashiro, K., & Suzuki, Y. (2013). Intercultural communication skills: What Japanese businesses today need. International Journal of Intercultural Relations 37, 72-85.** | Attitude: open-mindedness (multiple perspectives), ability to enjoy differences, not having prejudices, introspection<br><br>Awareness of self and cultural differences<br><br>Business manners<br><br>Emotional management<br><br>Skills: Ability to express what you want to say, *Sasshi* (ability to guess what the other person is thinking), *Nintairyoku* (mental strength, endurance), logical thinking, initiative, communication skills, Japanese language skills, foreign language skills, listening skills |

## FRAMEWORKS WITH SOFT SKILLS IN CONTEXT OF OTHER SKILL TYPES

These are frameworks of skills needed for workforce outcomes that include soft skills, organized by citation.

| Citation | Framework |
|---|---|
| **Arias, O. (2012). Measuring skills and policies to develop them. Paper presented at the Third Bologna Policy Forum, Bucharest.** |  |
| **Aring, M., & Knoll, S. (2012). Convergent Learning Systems.** | Workplace culture – knowing what the culture is and how to contribute to it<br><br>Interpersonal skills – how to speak, listen, present, engage, motivate, challenge, coach, give and receive feedback<br><br>Intrapersonal skills – How to live with ambiguity, emotional intelligence, managing resources including time, money<br><br>Technical skills – How to manage processes |
| **Balesteri, K., Sambolt, M., Duhon, C., Smerdon, B., & Harris, J. (2014). The college and career readiness and success organizer. Washington, DC: College and Career Readiness and Success Center at American Institutes for Research.** | Academic content: state content standards; state and industry technical standards<br><br>Pathway knowledge: knowledge of college and career pathway options; knowledge of personal interests and skills and related pathways; personal goals and aspirations<br><br>Lifelong learning skills: social and emotional learning, higher order thinking skills, application of knowledge in cross-disciplinary contexts, academic success and employability skills, civic skills, technology skills, financial literacy and consumer skills |
| **Confederation of British Industry (2007) and Department for Children, Schools and Families (2010) as cited in Blades, R., Fauth, B., & Gibb, J.** | Skills: business and customer awareness, application of numeracy, communication and literacy and application of IT<br><br>Personal qualities: self-management, team working, problem solving<br><br>Positive attitude: a 'can-do' approach, openness to new ideas |

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|---|---|
| **(2012). Measuring employability skills: A rapid review to inform development of tools for project evaluation. London: National Children's Bureau.** | |
| **Cunningham, W., & Villasenor, P. (2014). Employer voices, employer demands, and implications for public skills development policy. World Bank Policy Research Working Paper (6853).** | |

**Table 4: Classification of Skills Reported in the Sample**

| Socio-emotional | Higher-order cog | Basic cog | Technical |
|---|---|---|---|
| Adaptability | Analysis Skills | Basic literacy | Advanced IT |
| Collaboration | Critical Thinking | Numeracy | Advanced vocational |
| Commitment | Decision-making | | Basic vocational |
| Control emotions | Entrepreneurship | | Computer Literacy |
| Conscientiousness | Foreign language | | Degree level |
| Cooperation | Intellect | | Degree subject |
| Creativity | Language | | Experience |
| Conflict aversion | Learning Processes | | Grades |
| Cultural diversity | Listening skills | | Hands-on training |
| Customer Awareness | Manage risk | | Industry-based skills |
| Customer Handling | Oral communication | | IT knowledge |
| Dependability | Organization | | Job-specific skills |
| Efficiency | Planning | | Office administration |
| Emotional Stability | Problem-solving | | Practical knowledge |
| Extraversion | Strategic management | | Professional skills |
| Flexibility | Time management | | Score on employer test |
| Hard worker | Thinking skills | | Statistical analysis |
| Honesty | Written-communications | | STEM |
| Initiative | | | Technical skills |
| Independence | | | Theoretical training |
| Integrity | | | University attended |
| Leadership | | | Work experience |
| Modesty | | | |
| Motivation | | | |
| Negotiating | | | |
| Negotiate conflict | | | |
| Networking | | | |
| Open to new ideas | | | |
| Personal appearance | | | |
| Positive attitude | | | |
| Proactive | | | |
| Punctuality | | | |
| Professionalism | | | |
| Responsibility | | | |
| Self-confidence | | | |
| Self-management | | | |
| Social values | | | |
| Stress-management | | | |
| Teamwork | | | |
| Work ethic | | | |

*the skills in the list were condensed from 140 different skills names in the 28 studies reviewed in this paper. The author's used the definition of each skill category to assign each skill to a category. One could argue that some skills better fit in another, or multiple, skill categories. The table is organized such that the skills categories that are most similar are next to each other.

**Cunningham, W., & Villasenor, P. (2014). Employer voices, employer demands, and implications for public skills development policy. World Bank Policy Research Working Paper (6853).**

Table 9: Skill Formation at Different Points of the Life-cycle

| Period | Early years (0-5) | Childhood (5-12) | Adolescence (13-16) | Early and Middle Adulthood (18-29) and (30+) |
|---|---|---|---|---|
| Type of Skills | Basic cognitive<br>Foundational socio-emotional | Basic Cognitive<br>Socio-emotional | Basic Cognitive<br>Socio-emotional<br>Higher-order cognitive | Socio-emotional<br>Higher-order cognitive<br>Technical |
| Key Actor | Family, ECD programs | Family, schools, peers | Schools, peers, mentors, family | Higher education institutions, training institutes, work place |
| **Sample programs to Guide Actors to Build the Skills** (for a list of evidence-based programs, see Guerra and Modecki, forthcoming) | Quality parenting (Nuevo Postnatal, Program on Cognitive Development, Early Enrichment Program)<br><br>Child-focused ECD (Perry Program, Head Start) | Holistic curriculum, teaching methodology, and monitoring and evaluation system (KIPP, EPSIS, Enseña Chile, RCCP)<br><br>After-school/extra-school/out-of-school programs/activities (BBBS, Student Success Teams) | | Apprenticeships (Jóvenes programs)<br><br>Skills certification system, support systems for worker transition to firms where new learning can occur |

*Source: own elaboration based on World Bank (2010) and Guerra and Modecki (forthcoming)*

**Davis, N., Hansmeyer, E., Minic, B., Prakash, S., & Rangan, S. (2013). TEN Youth: Unlocking enterprise growth by focusing on the future at the bottom of the talent pyramid. Innovations.**

Job-related skills:
Fundamental skills-literacy numeracy, digital literacy, language skills
Functional skills-ability to do practical tasks informed by technical knowledge; highly job specific
Firm-specific skills-related to an individual firm's actual systems, equipment, and operating procedures

Behavioral skills:
Reliability-being hard working, accountable, organized, persistent and honest; following rules and keeping commitments; having integrity and good follow-through
Flexibility-being adaptive, responsive, and cooperative
Future orientation-being motivated, enthusiastic; having self-control and being able to do willful planning and sustain deferred gratification
Problem solving-being able to think critically and make decisions; having good communication and cooperation skills

**Scottish Executive's Effective Interventions Unit (2009) as cited in Blades, R., Fauth, B., & Gibb, J. (2012). Measuring employability skills: A**

Personal development and social competence: confidence, self esteem, motivation, increased feelings of responsibility, higher personal and career aspirations, relationships with peers and authority, (basic) interpersonal and communication skills, team working

Basic work skills and attributes: Basic literacy (reading, writing), basic numerical

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| **rapid review to inform development of tools for project evaluation. London: National Children's Bureau.** | skills, including ability to manage money, timekeeping, reliability, ability to complete forms, CV writing, presentation<br><br>Core skills: Communication, numeracy, ICT, problem solving, interpersonal<br><br>Personal effectiveness and aptitude: planning, prioritizing, verbal reasoning, numerical reasoning |
| **Jobs for America's Graduates. (n.d.). JAG Model. http://old.jag.org/model_competencies.htm** | A. CAREER DEVELOPMENT COMPETENCIES<br><br>A.1 Identify occupational interests, aptitudes and abilities.<br>A.2 Relate interests, aptitudes and abilities to appropriate occupations.<br>A.3 Identify desired life style and relate to selected occupations.<br>A.4 Develop a career path for a selected occupation.<br>A.5 Select an immediate job goal.<br>A.6 Describe the conditions and specifications of the job goal.<br><br>B. JOB ATTAINMENT COMPETENCIES<br><br>B.7 Construct a resume.<br>B.8 Conduct a job search.<br>B.9 Develop a letter of application.<br>B.10 Use the telephone to arrange an interview.<br>B.11 Complete application forms.<br>B.12 Complete employment tests.<br>B.13 Complete a job interview.<br><br>C. JOB SURVIVAL COMPETENCIES<br><br>C.14 Demonstrate appropriate appearance.<br>C.15 Identify expectations that employers have of employees.<br>C.16 Identify problems of new employees.<br>C.17 Demonstrate time management.<br>C.18 Follow directions.<br>C.19 Practice effective human relations.<br>C.20 Appropriately resign from a job.<br><br>D. BASIC SKILLS COMPETENCIES<br><br>D.21 Comprehend verbal communications.<br>D.22 Comprehend written communications.<br>D.23 Communicate in writing.<br>D.24 Communicate verbally.<br>D.25 Perform mathematical calculations.<br><br>E. LEADERSHIP AND SELF DEVELOPMENT COMPETENCIES |

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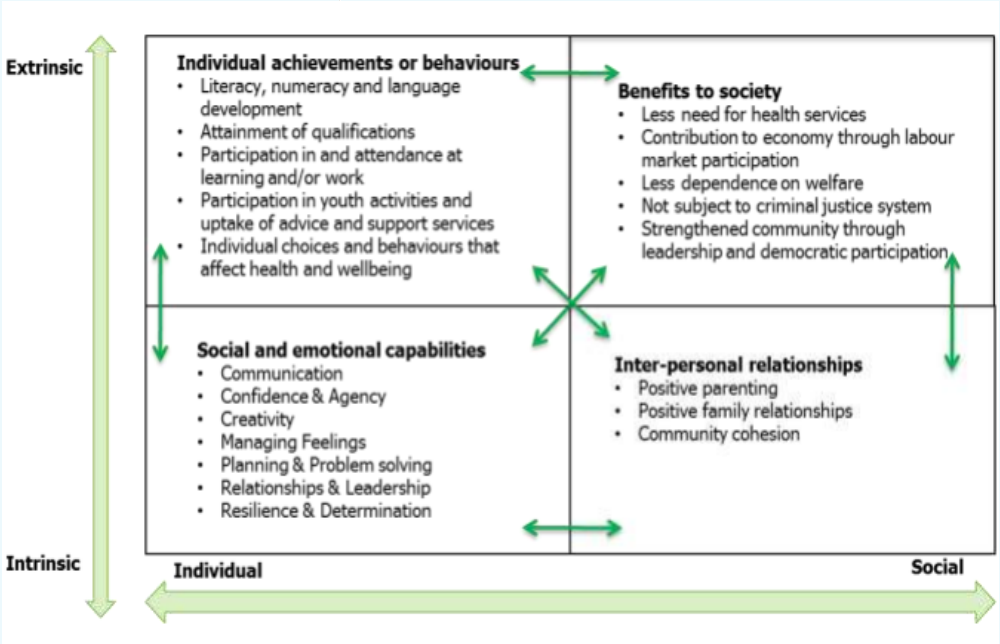
| | E.26 Demonstrate team membership.<br>E.27 Demonstrate team leadership.<br>E.28 Deliver presentations to a group.<br>E.29 Compete successfully with peers.<br>E.30 Demonstrate commitment to an organization.<br><br>F. PERSONAL SKILLS COMPETENCIES<br><br>F.31 Explain the types of maturity.<br>F.32 Identify a self-value system and how it affects life.<br>F.33 Base decisions on values and goals.<br>F.34 Identify process of decision-making.<br>F.35 Demonstrate ability to assume responsibility for actions and decisions.<br>F.36 Demonstrate a positive attitude.<br>F.37 Develop healthy self-concept for home, school and work. |
| **Lanning, J., Martin, R., & Vileneuve-Smith, F. (2008). Employability skills examined: Ten key messages from LSN's quest to understand employability skills. London: Learning and Skills Network.** | Knowledge (the cognitive domain)<br>Application of that knowledge in skills (the psycho-motor domain)<br>Attributes (the affective domain) that are usefully applied in the workforce |
| **McNeil, B. Reeder, N., & Rich, J. (2012). A framework of outcomes for young people. The Young Foundation.** |  |

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|---|---|
| **Aring, M. (2014) The Convergence Zone: What We Do.** **http://www.convergentlearningzone.com/p/what-we-do.html** | Skills in navigating workplace culture - knowing what the culture is and how to contribute to it<br><br>Interpersonal skills - how to speak, listen, present, engage, motivate, challenge, coach, give and receive feedback<br><br>Intrapersonal skills - how to live with ambiguity, emotional intelligence, managing resources including time and finances<br><br>Pragmatic job-specific skills - how to manage processes |
| **Noam, G. (2014). Program in Education Afterschool and Resiliency. Presented at the Minnesota Convening.** **http://www.extension.umn.edu/youth/training-events/events/assess-it-to-address-it/docs/gil-noam-assess-it-to-address-it.pdf** | Non-cognitive skills (Learning styles and skills, e.g., persistence)<br><br>Soft skills (21st century skills e.g., teamwork, self-awareness)<br><br>Mental Health (Resilience e.g., ability to deal with serious adversity) |

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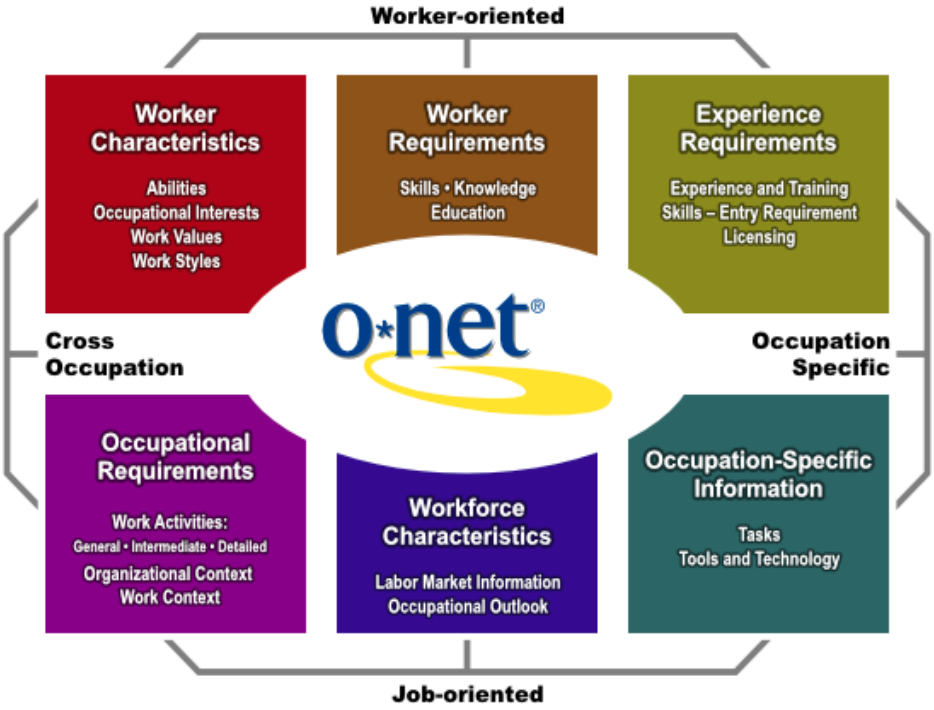
|---|---|
| **ONET categorization**<br>[http://www.onetcenter.org/content.html](http://www.onetcenter.org/content.html) |  |
| **Pennsylvania Academic and Career/Technical Training Alliance. (2011). Employability and soft skills manual. Pennsylvania Academic and Career/Technical Training Alliance.** | I. Postsecondary education<br>a. Recognize the connection between one's interests, abilities, and aptitudes for postsecondary education and career options<br>b. Identify and explore career/vocational areas of interest<br>c. Identify the education, qualifications, and experiences necessary to achieve these careers<br>d. Develop a plan for career and technical, postsecondary education (e.g., SAT prep, financial aid application)<br>e. Complete financial aid applications<br><br>II. Job seeking skills<br>a. Identify, secure, understand, and complete all documentation needed to gain employment<br>b. Develop and complete a resume and cover letter<br>c. Conduct a job search<br>d. Demonstrate mastery of interview skills<br>e. Develop a follow up strategy<br><br>III. Job keeping and career advancement skills<br>a. Take initiative in completing job tasks using problem solving, decision making |

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| | and analytical skills; and demonstrate dependability and reliability around these tasks<br>b. Work professionally and respectfully with a diversity of co-workers, supervisors, and customers, resolving conflict in a constructive manner<br>c. Work as a contributing member of a team<br>d. Participate fully in a work task or project form initiation to completion, using appropriate time management skills<br>e. Know how to ask for help when learning new task at the work site<br>f. Demonstrate effective communication techniques in the workplace<br>g. Give and receive constructive feedback at the work site<br>h. Know how to follow the rules of the workplace and maintain employment<br>i. Know the importance of personal hygiene and appearance required by the employer<br>j. Know how to change jobs in an appropriate, positive way<br>k. Develop a plan for career advancement<br><br>IV. Life skills<br>a. Manage personal finances effectively<br><br>V. Personal and social development skills<br>a. Identify and practice conflict resolution strategies to mediate problems at work, home, and school<br>b. Understand the role of culture and its effects on language, behavior, and thoughts<br>c. Understand one's own cultural heritage and experience, as well as those of others<br>d. Understand the role that family and peer networks play in personal, educational, and employment decisions<br>e. Understand and practice leadership qualities, values, and behaviors |
| **Perkins Collaborative Resource Network. Employability skills framework. Washington, DC: Department of Education Office of Career, Technical, and Adult Education. Retrieved October 16, 2014 from [http://cte.ed.gov/employabilityskills/](http://cte.ed.gov/employabilityskills/)** | 1. Applied knowledge<br>a. Applied academic skills: uses reading skills, using writing skills, uses mathematical strategies and procedures, uses scientific principles and procedures<br>b. Critical thinking skills: thinks critically, thinks creatively, makes sound decisions, solves problems, reasons, plans and organizes<br><br>2. Effective relationships<br>a. Interpersonal skills: understands teamwork and works with others, responds to customer needs, exercises leadership, negotiates to resolve conflicts, respects individual differences<br>b. Personal qualities: demonstrates responsibility and self-discipline, adapts and shows flexibility, works independently, demonstrates a willingness to learn, demonstrates integrity, demonstrates professionalism, takes initiative, displays positive attitude and sense of self-worth, takes responsibility for professional growth |

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| | 3. Workplace skills<br>a. Resource management: manages time, manages money, manages materials, manages personnel<br>b. Information use: locates information, organizes information, uses information, analyzes information, communicates information<br>c. Communication skills: communicates verbally, listens actively, comprehends written material, conveys information in writing, observes carefully<br>d. Systems thinking: understands and uses systems, monitors systems, improves systems<br>e. Technology use: understands and uses technology |
| **Philadelphia Youth Network. Youth Workforce Development System Competencies.** | <u>Reading Skills</u><br>Reads using effective strategies<br>Recalls information after reading<br>Reads for a variety of learning related and real-life work issues<br><br><u>Listening Skills</u><br>Listens actively for a variety of purposes<br>Interprets meaning of instruction and interaction<br><br><u>Speaking Skills</u><br>Speaks for a variety of purposes<br>Speak using effective communication skills<br><br><u>Writing Skills</u><br>Prepares a comprehensive writing sample of publishable quality<br>Conducts and documents inquiry-based research<br>Writes for academic, personal, social and school-to-career purposes<br><br><u>Math Skills</u><br>Solves problems that demonstrate the ability to represent numbers verbally, concretely, and symbolically<br>Solves problems in which there is a need to measure accurately<br>Solves problems that require an understanding of space, dimensional and solid concepts<br>Solves problems that require an understanding of variables, ratios and relationships<br>Solve problems by interpreting data and predicting outcomes<br>Develops the ability to formulate problems, to find solutions and draw conclusions.<br><br><u>Post-Secondary Education Skills</u><br>Recognize the connection between one's interests, abilities and aptitudes for post-secondary education and career options<br>Identify and explore career/vocational areas of interest<br>Identify the education, qualifications, and experiences necessary to achieve these careers |

Participate through internships in community or workplace experiences that are linked to academic learning
Develop a plan for career and technical post-secondary education and training (e.g., SAT preparation, financial aid application, etc)
Complete a field-based experience in post-secondary education
Identify and complete all documentation needed for application to post-secondary institution.
Completes financial aid applications

Job Seeking Skills
Identifies, secures, understands, and completes all documentation needed to gain employment
Develops and completes a resume and cover letter
Completes a job application
Demonstrates mastery of interview skills
Conduct a job search
Develop a follow-up strategy

Job Keeping and Career Advancement Skills
Takes initiative in completing job tasks using problem solving, decision making and analytical skills and demonstrate dependability and reliability
Work professionally and respectfully with a diversity of co-workers, supervisors and customers, resolving conflicts in a constructive manner
Demonstrates effective communication techniques in the workplace
Is able to work as a contributing member of a team
Is able to participate fully in a work task or project from initiation to completion, using appropriate time management skills.
Knows how to ask for help when learning a new task at the work site
Demonstrates effective communication techniques in the workplace
Can give and receive constructive feedback at the work site
Knows how to apply rules of the workplace to maintain employment
Knows the importance of personal hygiene and appearance required by the employer
Knows how to change jobs in a healthy way
Develops a plan for career advancement

Life Skills
Manages personal finances effectively
Knows how to manage the demands of work, school, and personal life
Navigate transportation systems to get to school, work and community based programs
Make decisions for healthy living
Apply safety behaviors in school and community
Identify and explore an array of leisure and recreational activities

Personal and Social Development Skills

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|---|---|
| | Identify and explore personal creativity and its relationship to personal and educational goals<br>Recognize the importance of self-esteem and its impact on future life decisions<br>Utilize caring adults as a resource in making life decisions<br>Identify and practice conflict resolution strategies to mediate problems at work, home and school<br>Demonstrates the ability to identify and assess community resources in order to further personal and educational goals<br>Demonstrate self-discipline, integrity, honesty, compassion, and responsibility in relationship to self and others<br>Develop an awareness of civic, legal and social responsibility<br>Practice making informed choices that reflect respect for the law, the rights of all people, and service to community<br>Understand culture and its effects on language, behavior and thoughts<br>Understand one's own cultural heritage and experience, as well as those of others<br>Understands the role that family and peer networks play in personal, educational and employment decisions<br>Understand and practice leadership qualities, values and behaviors<br>Develop and practice critical thinking skills |

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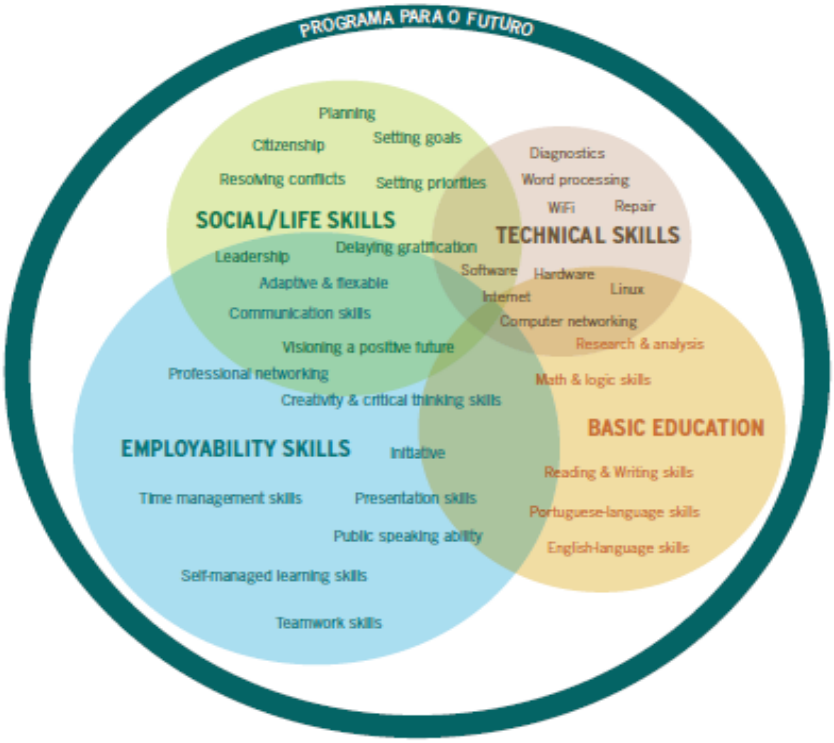
| **Rusten, E., Ogasawara, T., & Brady, K. (2005). Programa Para O Futuro: Enabling disadvantaged youth to build new futures: A new model for employability training. Washington, DC: AED.** |  <br>Figure 2. The PPF curriculum integrated content from four broad skill areas. |
| **STEP Skills (2014). Snapshot 2014. http://www.worldbank.org/content/dam/Worldbank/Feature%20Story/Education/STEP%20Snapshot%202014_Revised_June%2020%202014%20(final).pdf** | Cognitive skills<br><br>Socio-emotional skills: openness, conscientiousness, extraversion, agreeableness, emotional stability (neuroticism), grit, hostile bias, decision-making<br><br>Job relevant skills: computer use, contact with clients, solving and learning at work, autonomy and repetitiveness |
| **The Secretary's Commission on Achieving Necessary Skills. (1991). What Work Requires of Schools: A SCANS Report for America 2000.** | **Foundation:**<br>Basic Skills: Reads, writes, performs arithmetic and mathematical operations, listens and speaks<br><br>A. Reading--locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules<br>B. Writing--communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts<br>C. Arithmetic/Mathematics--performs basic computations and approaches |

practical problems by choosing appropriately from a variety of mathematical techniques
D. Listening--receives, attends to, interprets, and responds to verbal messages and other cues
E. Speaking--organizes ideas and communicates orally

Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons

A. Creative Thinking--generates new ideas
B. Decision Making--specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative
C. Problem Solving--recognizes problems and devises and implements plan of action
D. Seeing Things in the Mind's Eye--organizes, and processes symbols, pictures, graphs, objects, and other information
E. Knowing How to Learn--uses efficient learning techniques to acquire and apply new knowledge and skills
F. Reasoning--discovers a rule or principle underlying the relationship between two or objects and applies it when solving a problem

Personal Qualities: Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

A. Responsibility--exerts a high level of effort and perseveres towards goal attainment
B. Self-Esteem--believes in own self-worth and maintains a positive view of self
C. Sociability-demonstrates understanding, friendliness, adaptability, empathy, and
D. Self-Management--assesses self accurately, sets personal goals, monitors progress, and exhibits self-control

E. Integrity/Honesty--chooses ethical courses of action

**Workplace Competencies**

I. Resource management: identifies, organizes, plans, and allocates resources
a. time: understands, follows, and prepares a schedule
b. money: prepares and follows a budget
c. material: allocates material resources
d. people: allocates personnel resources

II. Information management: acquires and uses necessary information
a. identifies, finds, and selects necessary information
b. assimilates and integrates information from multiple sources
c. represents, conveys, and communicates information to others effectively

| | |
|---|---|
| | d. converts information from one form to another<br>e. prepares, interprets, and maintains quantitative and non-quantitative records and information, including visual displays<br><br>III. Social interaction<br>a. participates as an effective member of a team<br>b. facilitates group learning<br>c. teaches others new skills<br>d. serves clients/customers<br>e. influences (informs, explains, persuades, convinces) an individual or group<br>f. negotiates to arrive at a decision<br>g. works well with all kinds of people<br>h. understands how the social/organizational system works<br><br>IV. Systems behavior and performance<br>a. understands how system components interact to achieve goals<br>b. identifies, anticipates, and manages consequences<br>c. monitors and corrects performance, identifies trends and anomalies<br>d. links symbolic representations to real-world phenomena<br>e. integrates multiple displays<br><br>V. Technology interaction<br>a. selects and uses appropriate technologies<br>b. visualizes operations and programs machines to perform work<br>c. employs computers for input, presentation, and analysis<br>d. troubleshoots and maintains technologies<br>e. designs systems to perform complex tasks effectively |
| **UNESCO. (2012). Youth and skills: Putting education to work. Paris: UNESCO.** | Foundational skills<br><br>Transferable skills<br><br>Technical and vocational skills |
| **Universities UK (2002). Enhancing employability, recognizing diversity, as cited in Martin, R., Villeneuve-Smith, F., Marshall, L., & McKenzie, E. (2008). Employability skills examined: Shedding light on the views of stakeholders and employers. London: Learning Skills Network.** | Employability development has 3 aspects:<br>1. the development of employability attributes<br>2. the development of self-promotional and career management skills<br>3. a willingness to learn and reflect on learning |

| | |
|---|---|
| **Work Readiness Skills (adapted from Workforce Readiness Report Card) from Briones, R. M. (2010). Workforce development initiatives for out-of-school youth--What works? A participatory research with youth and communities in Southern Philippines.** | Basic knowledge/skills: Reading comprehension, Writing, Mathematics, Science, Government/economics, Humanities/arts, Foreign language, History/geography<br><br>Applied skills: Critical thinking/problem solving, Oral communication, Written communication, Teamwork/collaboration, Diversity, Information technology application, Leadership, Creativity/innovation, Lifelong learning/self-direction, Professionalism/work ethic, Ethics/social responsibility |
| **Working Group for International Cooperation in Skills Development. (2003). Skills for life and work. Debates in Skills Development Paper 9. Geneva: Working Group for International Cooperation in Skills Development (See page 24)** | Cognitive skills<br>Personal skills<br>Inter-personal skills |

## APPENDIX B: BIG FIVE FACET ALIGNMENT

| Big Five Measure: NEO-PI[1] | Big Five Measure: IPIP[2] | Roberts, R. (2014) ProExam[3] | Other Support | Term Used in Paper |
|---|---|---|---|---|
| | | Conscientiousness | | |
| Competence | Self-efficacy | | | |
| Order | Orderliness | | | Organized |
| Dutifulness | Dutifulness | Industriousness | | Hardworking and Dependable |
| Achievement striving | Achievement Striving | Achievement/effort | | Self-motivation |
| Self-discipline | Self-discipline | Self-control | | Self-control |
| Deliberation | Cautiousness | Attention to detail | | |
| | | Work ethic | | Hardworking and Dependable |
| | | | • ONET Work Styles<br>• Sackett & Walmsley (2014)<br>• Hough & Ones (2001)<br>• Goldberg (McCroskey & Richmond)<br>• Roberts (2005, unpublished)<br>• Duckworth (2009) | Integrity/ethics |
| | | Grit/time management | | |
| | | Emotional Stability | | |
| Anxiety | Anxiety | Calm and relaxed | | |
| Hostility | Hostility | | | |
| Depression | Depression | | | Positive attitude |
| Self-consciousness | Self-consciousness | Restrained | • Hough & Ones (2001)<br>• Goldberg | Positive self-concept |

[1] Costa, P. T., & McCrae, R. R. (1992). Neo PI-R professional manual: Odessa, FL: Psychological assessment resources. Costa, P. T., & McCrae, R. R. (2008). The revised neo personality inventory (neo-pi-r). *The SAGE handbook of personality theory and assessment, 2*, 179-198.
[2] Goldberg, L. R. (2014). International Personality Item Pool: A scientific collaboratory for the development of advanced measures of personality and other individual differences. Retrieved Dec 4, 2014, from http://ipip.ori.org/
[3] Roberts, R. (2014). PowerPoint Presentation. ProExam

| Big Five Measure: NEO-PI[1] | Big Five Measure: IPIP[2] | Roberts, R. (2014) ProExam[3] | Other Support | Term Used in Paper |
|---|---|---|---|---|
| | | | (1990, 1992) | |
| Impulsiveness | Impulsiveness | Self-controlled | • Sackett & Walmsley (2014) | Self-control |
| Vulnerability | Vulnerability | Resilient | • Hough & Ones (2001) | Resilient |
| | | Stress tolerant | | Resilient |
| | | Extraversion | | |
| Warmth | Friendliness | | • Hough & Ones (2001)<br>• Goldberg (1992) | Social skills |
| Gregariousness | Gregariousness | | | |
| Assertiveness | Assertiveness | Assertive | • Sackett & Walmsley (2014)<br>• Hough & Ones (2001)<br>• Goldberg (McCroskey & Richmond) | Persuasive |
| Activity | Activity level | Energetic | | Positive attitude |
| Excitement-seeking | Excitement-seeking | Social boldness | | Initiative-taking |
| Positive emotions | Positive emotions | | | Positive attitude |
| | | Talkative | | |
| | | Socially dominant | | |
| | | Agreeableness | | |
| Trust | Trust | Trusting/humility | | |
| Compliance | | | | Social skills |
| Altruism | Altruism | Altruistic | | |
| Straightforwardness | Morality | | | Integrity/ethics |
| Modesty | Modesty | | | |
| Tender-mindedness | Sympathy | Sympathetic | | Empathy/Care for others |
| | Cooperation | Cooperation | | Social skills |
| | | Teamwork | • Sackett & Walmsley (2014)<br>• Goldberg | Teamwork |

| Big Five Measure: NEO-PI[1] | Big Five Measure: IPIP[2] | Roberts, R. (2014) ProExam[3] | Other Support | Term Used in Paper |
|---|---|---|---|---|
| | | | (1990, 1992) | |
| | | Collaborative | | |
| | | Kind | | |
| | | | | Learning and growth orientation |
| | | Openness to Experience | | |
| Fantasy | Imagination | Innovation, creativity | | Creativity |
| Aesthetics | Artistic interests | Aesthetics | | Creativity |
| Feelings | Emotionality | | | |
| Actions | Adventurous | | | |
| Ideas | Intellect | Intellectual curiosity | | Higher-order thinking skills |
| Values | Liberalism | | | |
| | | Culture | • Hough & Ones (2001)<br>• Goldberg (1992)<br>• Woo (2014) | Cultural sensitivity |
| | | Reflective | • Goldberg (1990, 1992)<br>• Woo (2014) | Learning orientation |
| | | | • Woo et al (2014) | Initiative-taking |

## APPENDIX C: GROUPING OF TERMS FROM THE LITERATURE

Below is the taxonomy of skills devised by the research team from terms in the literature. Terms in parentheses were reverse-coded.

| Term | Terms from the literature |
|---|---|
| **Ability to multi-task** | • Ability to multi-task |
| **Adaptability** | • Receptive to change<br>• Adaptable<br>• Flexibility<br>• Capacity to tolerate ambiguity<br>(Rigidity) |
| **Autonomy** | • Independent<br>• Preference for challenge over affiliation<br>• Acting autonomously<br>• Ability to work/think independently |
| **Commitment to employer** | • Shows commitment "beyond the cause"<br>• Engagement and commitment<br>• Committed to the employer<br>• Dedication/Loyalty to employer<br>• Organizational commitment |
| **Communication** | • Visual communication skills (recognizing body language)<br>• Ability to disseminate knowledge<br>• Communication skills<br>• Speaking<br>• Active listening<br>• Writing expression<br>• Oral expression and comprehension: able to listen and follow directions<br>• Clear/effective communication<br>• Presenting<br>• Convey ideas in writing<br>• Expressiveness<br>• Ability to use language, symbols, and text interactively |
| **Creativity** | • Innovative<br>• Creative<br>• Creativity: "Imagining alternative ways of doing things; applying learning in new contexts; enterprising; innovating; remaining open to new ideas"<br>• Experimentation |
| **Cultural sensitivity** | • Capacity to operate in diverse environments<br>• Sensitive to diversity<br>• Cultural sensitivity<br>• Global thinking<br>• Cultural awareness and expression<br>• Cultural literacy<br>• Diversity<br>• Multicultural awareness<br>• Understanding the role of culture and its effects on language, behavior, and thoughts<br>• Understanding one's own cultural heritage and those of others<br>• Awareness and respect for diversity |

| | |
|---|---|
| **Customer service** | • Provides good customer service<br>• Customer service focus<br>• Business and customer awareness – basic understanding of the key drivers for business success and the need to provide customer satisfaction |
| **Empathy/Care for others** | • Being a "giver"<br>• Empathy<br>• Self-described social character: Caring<br>• Positive reciprocity<br>• Conscientious of other workers |
| **Goal orientation** | • A person with high aspirations<br>• Career planning<br>• Considerations of future consequences<br>• Expectation of salary<br>• Future orientation<br>• Educational aspirations<br>• Goal setting skills |
| **Hard working and dependable** | • Work ethic<br><u>Diligence</u><br>• Diligence<br>• Demonstrates precision and accuracy in their work<br>• Disciplined in terms of delivery<br>• Hard working<br>• Willing to work hard<br>• Stays late<br>• Effort<br>• Persistence<br>• Detail-oriented<br>• Perseverance<br>• People who persist when others give up, work hard<br><u>Grit</u><br>• Grit (perseverance of effort)<br><u>Reliability</u><br>• Dependability<br>• Reliability |
| **Higher-order thinking skills** | • Problem solving<br>• Critical thinking<br>• Problem solving/critical thinking<br>• Problem solving/critical thinking/decision-making<br>• Problem solving/decision-making<br>• Deductive reasoning<br>• Logical reasoning<br>• Ability to use technology interactively<br>• Ability to use knowledge and information interactively<br>• Observe critically<br>• Interpreting information<br>• Intellectance (achieves quality with information, analyzes finances/operations, seems market savvy, displays good judgment)<br>• Analytical skills<br>• Decision-making<br>• Situational judgment |
| **Initiative taking** | • Someone who takes initiative |

| | |
|---|---|
| | • Entrepreneurship<br>• Early entrepreneurial social skills in adolescence (leadership and early commercial activities)<br>• Entrepreneurial personality (high in extraversion, conscientiousness and openness, and low in neuroticism and agreeableness)<br>• Proactiveness/initiative<br><u>Risk taking</u><br>• Someone who is prepared to take risks<br>• Preference for challenge over affiliation<br>• Impulsivity<br>• Risk-taking propensity<br>• Harm avoidance<br>• Courage |
| **Integrity/Ethics** | • Honesty<br>• Integrity<br>• Trustworthiness<br>• Positive values<br>• Ethics/ethical<br>• Social responsibility<br>• Character<br>• Does what's right<br>• Sincerity<br>• Civic values |
| **Leadership** | • Leadership skills<br><u>Management of people</u><br>• Able to manage well<br>• Managing people<br>• Delegating |
| **Learning and growth orientation** | • Ability to learn<br>• Willingness to grow<br>• Learns from their mistakes and is not defeated by them<br>• Active learning<br>• Learning to learn<br>• Knows how to ask for help<br>• Information seeking skills<br><u>Reflective</u><br>• Understands and takes direction<br>• Monitors and corrects performance<br>• Reflects and evaluates<br>• Responds well to supervision<br>• Gives and receives constructive feedback |
| **Networking** | • Networking |
| **Organized** | • Order<br>• Coordination<br>• Organizational skills<br>• Personal management |
| **Persuasive** | • Negotiation<br>• Advocate and influence<br>• Guides others<br>• Influencing skills<br>• Social potency (is forceful and decisive, fond of influencing others, fond of leadership |

| | |
|---|---|
| | roles)<br>• Assertiveness |
| **Planfulness** | • Ability to from a plan<br>• Ability to work with a plan<br>• Plans money, materials, human resources<br>• Planning<br>• Thrift<br>• Managing projects<br>• Efficiency<br>• Time management |
| **Positive attitude** | • Positive and enthusiastic<br>• Brings humor to the workplace<br>• Positive/good attitude<br>• Enjoying the work they do<br>• "I want to be here" rather than "I have to be here"<br>• Work interest<br>• Happiness<br><u>Optimism</u><br>• Hopeful attitude<br>• Optimism |
| **Positive self-concept** | • Ability to understand their environment and appreciate their boundaries<br>• Self-aware (knowing strengths and limitations)<br>• Self-esteem<br>• Self-confidence<br>• Self-efficacy<br>• Appropriate attitudes (especially among unskilled workers)<br>• Self-belief<br>• Well-being (feels good about self and sees a bright future)<br>• Pride in their work<br>(Poor self-esteem) |
| **Professionalism** | • Punctuality<br>• Professionalism<br>• Know the importance of personal hygiene and appearance required by the employer<br>• Know how to change jobs in an appropriate, positive way<br>• Business etiquette<br>• Appearance and personality<br>• Poised<br>• Presentation |
| **Resilience** | • Solid in the face of adversity<br>• Resilience<br>• Emotional resilience<br>• Overcoming challenges and asking for help when necessary |
| **Responsibility** | • Takes responsibility for their work<br>• Ownership of a role<br>• Personal accountability<br>• Responsible<br>• Accountability (produce results)<br>• Readiness to accept responsibility<br><u>Internal locus of control</u><br>• Internal locus of control<br>• Internal attribution |

| | |
|---|---|
| | (External attribution)<br>(External locus of control)<br>(Stable and unstable attribution) |
| **Self-control** | • High level of emotional intelligence/emotionality/emotional management<br>• Self-disciplined<br>• Self-management<br>• Self-control<br>• Attentiveness<br>• Discipline<br>• Self-regulation<br>• Constraint (combination of self-control, harm avoidance, traditionalism): Endorses social norms, acts in a cautious and restrained manner, avoids thrills<br>• Adjustment (remains even tempered, manages people crisis and stress, shows resiliency, demonstrates patience)<br>• Prudence (stays organized, works with integrity, abides by rules, follows safety procedures)<br>• Know how to follow the rules of the workplace and maintain employment<br>• Patience<br>• Rule-abiding behavior<br>• Control<br>• Tolerating frustrations<br>• Emotional regulation |
| **Self-motivation** | • Need for achievement<br><u>Self-motivated</u><br>• Desire to learn<br>• Self-starting/Self-motivated<br>• Result oriented<br>• Self-direction<br>• Life-long learning/self-direction<br>• Willingness to learn<br>• Passion<br><u>Agency</u><br>• Positive emotionality-Agency (combination of achievement and social potency): seeks pleasurable experiences by engaging in the environment and conquering the challenges it may present |
| **Social skills** | • Social skills<br>• Social perceptiveness<br>• Interpersonal skills<br>• People skills<br>• Sociability<br>• Prosocial<br>• Social closeness (is sociable, likes people and turns to others for comfort)<br>• Likeability (shows interpersonal skill, exhibits capacity to compromise, demonstrates tactfulness and sensitivity, shares credit)<br>• Relationship skills<br>• Can foster positive relationships<br>• Ability to relate well to others<br>• Peer relations<br>• Position emotionality-Communion (social closeness, well-being): Seeks pleasurable experiences by establishing warm relationships with others)<br><u>Conflict resolution</u> |

| | |
|---|---|
| | • Ability to manage conflict<br>• Behaviors in situations of conflict<br><u>Respectful</u><br>• Respectful of others<br>• Politeness<br>(Antisocial)<br>(Withdrawal)<br>(Poor relationships)<br>(Poor social skills) |
| **Teamwork** | <u>Teamwork</u><br>• Teamwork<br>• Capacity to work well with others<br>• Work as a member of a team<br>• Compromises<br>• Collaboration<br>• Cooperation<br>• Affiliation need |

Below is the taxonomy of outcomes devised by the research team from the terms in the literature.

| Outcome Bucket | Terms from the literature |
|---|---|
| **Employment** | • Contractual work hours<br>• Duration of unemployment<br>• Employer's hiring decision (in 1987)<br>• Employer's hiring decision (in 1992)<br>• Employment status = whether employed or not employed at time of follow up survey<br>• Formality of employment<br>• Found a job<br>• Handle disequilibria well ("capacity to occupy advantageous positions on the short side of non-clearing labor markets in disequilibrium; avoid downward pressure on earnings associated with being on the long side")<br>• Hours worked at age 35<br>• Increased likelihood of workforce participation (Chile) and likelihood of employment (Chile, Argentina)<br>• Labor Market Attachment<br>• Labor market participation<br>• Number of job offers<br>• Receiving unemployment support (benefits)<br>• Spending >6 months looking for first job (versus finding a job right after graduating)<br>• Spending a year or more in concurrent spells of unemployment from age 16-29<br>• Time to first employment after immigration<br>• Unemployment > 12 months (if unemployed >4 months) by age 26<br>• Unemployment > 4 months by age 26<br>• Unemployment duration<br>• Unemployment status 14 years after high school graduation<br>• Weekly wages 14 years after high school graduation<br>• Work in upper-class white collar jobs<br>• Work qualification level |

| | |
|---|---|
| | Prompts in employer surveys or other literature:<br>• What are the most important skills for new workers?<br>• What do new workers in entry level jobs need to be able to do well enough to carry out critical entry level tasks?<br>• What matters to hiring managers?<br>• What are the minimum professional competencies and personal traits expected from entry-level employees?<br>• What do corporations seek when they hire MBAs?<br>• Attributes employers seek on a candidate's resume<br>• Employers rate the importance of candidate skills/qualities<br>• Skills that a candidate who recently left school should have developed<br>• Most critical skills for candidate who has recently left school<br>• Skills that would be a deal breaker for a candidate not to have<br>• What skills are "essential for a job"?<br>• Asked of youth - what is most important for getting a job?<br>• What skills are important according to training firms?<br>• What are the key core skills employees need? |
| **Performance/ Promotion** | • Adult social position: occupational status and highest educational qualification earned<br>• Contextual task or job performance<br>• Duration of employment<br>• Early promotion recommendations<br>• Extrinsic career success<br>• Higher level of effort & reduced turnover<br>• Job performance<br>• Job performance & training performance (combined)<br>• Job performance (includes performance ratings, absenteeism, number of accidents, training ratings, etc.)[4]<br>• Job retention<br>• Likelihood of experiencing occupational status transitions<br>• Holds a managerial role<br>• Meeting employer's expectations<br>• Motivation to stay at the job<br>• Objective performance (promotions, productivity, salary)<br>• Occupational attainment (occupational status, job complexity, education level, earnings, getting dirty on the job (reversed))<br>• Organizational Citizenship Behavior[5]<br>  ○ Occupational Citizenship Behavior: Altruism<br>  ○ Occupational Citizenship Behavior: Generalized compliance<br>• Occupational level<br>• Occupational prestige<br>• Occupational status<br>• Organizational satisfaction |

[4] Studies that included only training performance as the outcome were excluded.

[5] Occupational citizenship behavior and counterproductive work behavior were not the original aims of this study, and were not specifically sought-out as outcomes. However, when they were included in studies reviewed, they are included. Justification for Organizational Citizenship Behavior: *"For job performance, current theory and research have generally converged on the belief that the performance domain should be extended to include task performance, organizational citizenship behavior, and counterproductive work behavior (Rotundo & Sackett, 2002; Sackett, 2002; Viswesvaran & Ones, 2000). Organizational citizenship behavior (OCB) is generally considered to be a set of behaviors that are not directly task related but contribute to the goals of the organization by improving its social and psychological environments (Rotundo & Sackett, 2002)."*

| | |
|---|---|
| | • Organizational security<br>• Overall managerial performance<br>• Performance rating<br>• Promotions<br>• Recognition<br>• Resource power (ability to hire, fire, give pay raises, supervise people, supervise many people)<br>• Responsibility (responsibilities at work)<br>• Sales success<br>• Stable work career<br>• Success & performance<br>• Success in the workforce<br>• Supervisor ratings of job performance<br>• Work autonomy (sets own hours, controls budget, whether supervised)<br>• Work competence<br>• Work experience at age 30<br>• Work performance<br>• Work stimulation (using skills at work, learning new things at work, have others come to you for advice at work)<br>• Years of work experience<br>(Counterproductive work behavior)<br>(Derailment (when an otherwise promising executive is fired, forced to quit, or no longer gets promotions))<br>(Likelihood of quitting)<br><br><u>Prompts in employer surveys or other literature:</u><br>• What are the skills for being a star employee?<br>• What are the skills for being a top performer?<br>• What are the abilities vital for success?<br>• What are the skills that adults need to effectively carry out their roles as parents, citizens, and workers?<br>• What are the skills of an ideal employee?<br>• Employer-reported list of desired competencies<br>• What is the most important leadership quality according to CEOs?<br>• Employers listing of most important soft skills<br>• Qualities most needed as perceived by employees |
| **Wages/Income** | Hourly or annual:<br>• Wage<br>• Income<br>• Salary<br>• Earnings<br><br>Others, more detailed:<br>• Financial security<br>• Lifetime Income<br>• Starting wage<br>• Wealth<br>• Within-occupation wages |
| **Entrepreneurial** | Auditor appraisal of entrepreneurial success |

| | |
|---|---|
| **success** | Career satisfaction<br>Company gross income<br>Employment growth rate<br>Entrepreneurial growth<br>Entrepreneurial performance<br>Entrepreneurial profitability<br>Entrepreneurial success<br>Entrepreneurial success: Credit rating<br>Entrepreneurial success: Employment growth<br>Entrepreneurial success: Perceived profitability<br>Entrepreneurial success: Subjective satisfaction<br>Expected future success<br>Feeling good as entrepreneur<br>Log earnings for entrepreneurs<br>Making progress in founding process (among nascent entrepreneurs)<br>Post-start up employment growth<br>Probability of business expansion<br>Sales or profits growth rate<br>Satisfied with past success<br>Self-appraisal of entrepreneurial success<br>Success of business owners<br><br><u>Prompts in employer surveys or other literature:</u><br>Entrepreneurs' ideas of what is important for entrepreneurship |

## APPENDIX D: TERMS FROM MULTIPLE DISCIPLINES

The figures below illustrate some of the other terms frequently used across disciplines for the workforce soft skills discussed in this paper. These figures demonstrate the need for greater consensus across disciplines when describing the same soft skills. These lists are not comprehensive, but instead serve as examples of the variety of terms used.

Employers:
"Respectful of others"
"Willing to help others"
"Fosters relationships"

Psychology/Economics:
"Likability"
"Social skills"
"Positive peer relations"
Reverse: "Withdrawal"

Education:
"Social intelligence"
"Conflict management"
"Social competence"
"Relationship skills"
"Respectful"

Social Skills

Employers:
"Clear written communication"
"Strong oral communication"
"Active listening"
"Persuasiveness"

Psychology:
"Expressiveness"
"Assertive communication"

Education:
"effective written communication"
"effective oral communication"

Communication

Employers:
"Deductive reasoning"
"Judgment"
"Problem-solving"

Education:
"Good situational judgment"
"Gathers and uses information to make decisions"
"Critical thinking skills"
"Problem-solving"

Problem solving,
Decision making,
Critical thinking

(Higher-order thinking skills)

Employers:
"Self-disciplined"
"Self-management"

Psychology:
"Constraint"
Reverse: "Externalizing behaviors"
"Self-regulation"
"Emotional stability"

Economics:
"Self-regulation"

Education:
"Rule-abiding"
"Manages emotions"
"Attention"
"Self-regulation"

Self-control

Employers:
"Pride in their work"

Psychology:
"Self-efficacy"
"Self-confidence"
"self-esteem"
"Wellbeing: Feels good about self and sees a bright future"

Economics:
"Self-esteem"
"Self-assessed intelligence"

Education:
"Positive core self-evaluation"
"Academic self-concept"

Positive Self-Concept

Employers:
"Work ethic"
"Reliability"

Psychology/Education:
"Grit"
"Persistence"
"Diligence"
Big Five: "Conscientiousness"

Economics:
"Predicted effort"
"Industrious"
"Perseverant"

Hardworking and dependable

Employers:
"Honesty"
"Sincerity"
"Ethics"

Psychology:
"Principled"
"Integrity"
"Moral reasoning"
"Trustworthy"

Education:
"Professional ethics"
"Character"

Integrity/Ethics

Employers:
"Willingness to learn"
"Desire"
"Passion"
"Drive"

Psychology/Economics:
"Achievement motivation"
"Agency"
"Intrinsic motivation"

Education:
"Self-direction"
"Mastery orientation"

Self-motivated

Employers:
"Enthusiastic"
"Can-do attitude"
"Good humored"

Psychology/Economics:
"Optimism"
"Hope"

Education:
"Engagement"

Positive attitude

Employers:
"Collaboration"
"Able to work in a team"

Education:
"Works with others"
"Cooperation"
"Works in heterogeneous groups"

Teamwork

## APPENDIX E: DETAILED PROJECT METHODOLOGY

A multi-faceted approach was taken to generate the skills presented in this report. First, the authors conducted a thorough international and interdisciplinary literature review on skills predicting workforce outcomes. Throughout the literature review process, the authors also consulted with dozens of recognized experts and key stakeholders.

**LITERATURE REVIEW**

An extensive literature review forms the basis of the work presented in this report. The authors included both academic and non-academic research from a wide variety of disciplines, including psychology, workforce development, economics, education, sociology, youth development, and occupational psychology from around the world in the review. Ultimately, 385 studies were reviewed.

**Soft skills** - The competencies, behaviors, attitudes, and personal qualities that enable people to effectively navigate their environment, work well with others, perform well, and achieve their goals. These skills are broadly applicable and complement other skills such as technical, vocational, and academic skills.

**Workforce outcome** - Four general types of workforce outcomes emerged from the review: employment; performance or promotion; wages or income; and entrepreneurial success. Analyses were conducted to ascertain key skills related, concurrently or prospectively, to each outcome group.

The authors used a variety of search engines in order to be inclusive of different types of publications. These included traditional academic search engines as well as more inclusive search engines such as Google Scholar and Global Studies. The research team searched these databases primarily in English, but when it became clear that certain regions of the world were not well-represented in the English-language literature, searches were also performed with Spanish and French search terms, as follows:

| English | Spanish | French |
|---|---|---|
| Soft skills | Competencias blandas | Compétences transversals |
| Workforce entry | Empleo | Employ |
| Life skills | Habilidades interpersonales | Compétences non techniques emploi afrique |
| Workforce | Habilidades socioemocionales | |
| Employment | Empleo | |
| Non-cognitive skills | Encuesta a los empleadores | |

The database search results were reviewed until the project team decided that new reports were no longer on-target. Depending on the search engine and search terms used, between 10 and 100 studies were reviewed per keyword search.

As a complementary strategy, the research team also reviewed publications' reference lists for relevant pieces. This proved to be the most fruitful method of finding relevant articles. In addition to these traditional literature review methods, the research team was also made aware of additional publications, and works in progress, through the expert consultation process (described below).

When possible, the research team reviewed the original research publications rather than secondary sources. In the same vein, the research team aimed to review original journal article publications rather than literature reviews in order to accurately determine a study's methodological rigor.

As noted, 385 publications representing a number of different types of publications were retrieved through this process. Types of publications include empirical evidence (generally published as journal articles or independent reports), employer surveys, consensus projects, and other less rigorous publications including public-audience reports, opinion pieces, program evaluations, and non-rigorous literature reviews.

In order to be included in the review, publications must have met certain inclusion criteria. These included: recency, being non-sector-specific since the research team is interested at this point in skills that are relevant across sectors, the inclusion of a skill, and, for empirical literature, and the inclusion of a workforce outcome (as defined in the text box above). Studies included in the review are from 1995 to the present, with the exception of some seminal pieces. Employer surveys and consensus projects are not always specific about the outcomes they are addressing. In this case, if it is clear that the study is relevant to success in the workforce, it was included. Studies that investigated educational outcomes (i.e., years of schooling, grades) or positive youth development more generally without attention to workforce implications are not included.

Initially, the project aimed to have more stringent criteria for empirical evidence (i.e., statistical controls for gender, nationally representative sampling). However, throughout the course of the review, it became clear that imposing rigorous inclusion criteria on the project would limit the potential to include empirical literature from outside of developed countries. Even without excluding less rigorous studies, only a handful of longitudinal empirical studies were available for developing countries. In total, 385 studies were reviewed and 172 met the inclusion criteria and were deemed relevant to this project.

Once relevant publications were identified, members of the research team reviewed them and inserted a summary of the articles into a Microsoft Excel spreadsheet. This spreadsheet contains detailed information on the study's methodology and findings by outcome of interest. Specifically, each resource is coded based on the characteristics below:

- Geographic coverage
- Whether it is based exclusively in the United States
- Whether it is based on a specific industry
- Study design (literature review, policy piece, quantitative analysis, qualitative analysis, expert panel, etc.)
- Sample (e.g., demographic information)

- Sample size
- Control variables
- Whether subgroup results based on gender or age are included
- Predictor (independent variable)
- Workforce outcome (dependent variable)
- Relationship between predictor and outcome
- Skill categorization
- Outcome categorization as employment, wage/income, performance/promotion, or entrepreneurship
- Included informal sector
- Whether the study focuses on youth or entry-level employment

Each study is assigned a quality code which captures its type and rigor based on the following options.[6] The first digit in the code describes the type of study. The second digit describes the level of rigor. A higher second digit indicates a less rigorous study. All studies meeting the above minimal criteria (recency, being non-sector-specific, the inclusion of a skill, and, for empirical literature, and the inclusion of a workforce outcome) were included in the review.

Chart 1. Quality Codes

| Code | Description |
|---|---|
| **10** | Empirical study with a large sample (200), representative sampling, longitudinal, with controls |
| **11** | Empirical study with 2 or 3 of the following: large sample, representative sampling, longitudinal, with controls |
| **12** | Empirical study with 1 of the following: large sample, representative sampling, longitudinal, with controls |
| **13** | Empirical study with low rigor (0 of the following: large sample, representative sampling, longitudinal, with controls) |
| **20** | Employer survey (rigorous : scientific sampling, large, etc.) |
| **21** | Employer survey (non-rigorous) |
| **30** | Expert consultation with all of the following: large study, widely recognized, interdisciplinary participants, cross-sectoral, credentialed experts, selection criteria, multinational |
| **31** | Expert consultation with 5-6 of the following criteria: large study, widely recognized, interdisciplinary participants, cross-sectoral, credentialed experts, selection criteria, multinational |
| **32** | Expert consultation with 3-4 of the following criteria: large study, widely recognized, interdisciplinary participants, cross-sectoral, credentialed experts, selection criteria, multinational |
| **33** | Expert consultation with 0-2 of the following criteria: large study, widely recognized, interdisciplinary participants, cross-sectoral, credentialed experts, selection criteria, multinational |

[6] The quality codes were designed specifically for this study. However, they are based on quality codes used for a review of evidence on indicators of positive youth development, published in the Handbook of Child Well-Being (Lippman, Ryberg et al., 2013).

| | |
|---|---|
| **40** | Meta-analysis (international) |
| **41** | Meta-analysis (U.S. only) |
| **42** | Literature review (rigorous: includes scientific selection of articles, criteria for inclusion, peer-reviewed, cross-sectoral) |
| **43** | Literature review (non-rigorous: does not meet above criteria) |
| **50** | Conceptual framework/construct development/survey without results |
| **60** | Program evaluation (rigorous) |
| **61** | Program evaluation (non-rigorous) |
| **70** | Popular press (newspaper/magazine article/press release) |

For each study, findings were recorded in one row per separate finding in the spreadsheet. This enabled each skill-outcome relationship to have a separate row in the study which indicates the relevant skill, the workforce outcome related to the skill, and the nature of the relationship (significant and positive, significant and negative, mixed findings, non-significant, or not applicable if not an empirical study). In order to compare skills across studies, terms used by each study were categorized into skill groupings (see Appendix C). These terms were selected by the project staff because they are recognizable to a non-research audience, including youth and employers. Expert advisors reviewed and provided guidance on these classifications and terms. In addition, outcomes were grouped into four categories, including employment, performance and promotion, wages and earnings, and entrepreneurship. To tally the skills that received the most support in the literature, the spreadsheet was manipulated to count the number of positive findings where a skill was linked to a workforce outcome. For empirical studies, findings needed to be positive, indicating that the skill led to a desired outcome, and statistically significant in order to be counted as "support". The data in the spreadsheet were then analyzed to identify the skills with the most support for each of the four outcome groups. Supportive findings from non-empirical literature are included in these tallies. Mixed, negative, or non-significant findings were taken into account in skill selection and are discussed for each skill under the "strength of evidence" sections. This spreadsheet was manipulated first with the Big Five Personality Factors (*Conscientiousness, Emotional stability/Neuroticism, Agreeableness, Extraversion, and Openness to Experience*) intact and a second time with these factors broken into their facets. This process is described below.

The research team duplicated this process to produce a tally of positive findings among literature that was specifically focused on youth or entry-level workers. The literature was coded based on the sample information available into either "youth or entry-level," "adult only," or "unknown." Then, tallies of the positive findings for each skill, by workforce outcome, were generated using only this sub-set of literature focused on youth and entry-level workers. There were not enough studies to separate "youth" literature from "entry-level" literature, so these two populations were combined.

## INCORPORATING BIG FIVE PERSONALITY FACTORS

In order to compare the results of a large body of literature which utilizes measures from the Big Five Personality Factors, the research team has "mapped" the facets of these larger constructs to the relevant skills that emerged from the remaining literature. The Big Five Personality Factors have been shown to be predictive, to varying degrees, of workplace success. They include *Conscientiousness*, *Emotional Stability/Neuroticism*, *Agreeableness*, *Extroversion*, and *Openness to Experience.* These compound traits have been demonstrated to be measureable across cultures and languages and malleable over time (Kyllonen, Lipnevich, Burrus, & Roberts, 2009; Mike, Harris, Roberts, & Jackson, unpublished; Ng, 2015; B. W. Roberts, Walton, & Viechtbauer, 2006; Schmitt, Allik, McCrae, & Benet-Martinez, 2007; Woo, Chernyshenko, Longley et al., 2014; Zecca et al., 2012). While widely researched, the Big Five Personality Factors are quite broad, and each has multiple facets which can be obscured if just the Big Five Factor is studied. Also, because measures of the Big Five have been included in a number of longitudinal databases, they have been the focus of numerous empirical studies and they therefore dominate empirical findings. For these reasons, the research team sought to identify and examine the facets that comprise each Big Five Personality Factor, and designed a way to include these findings, given our taxonomy.

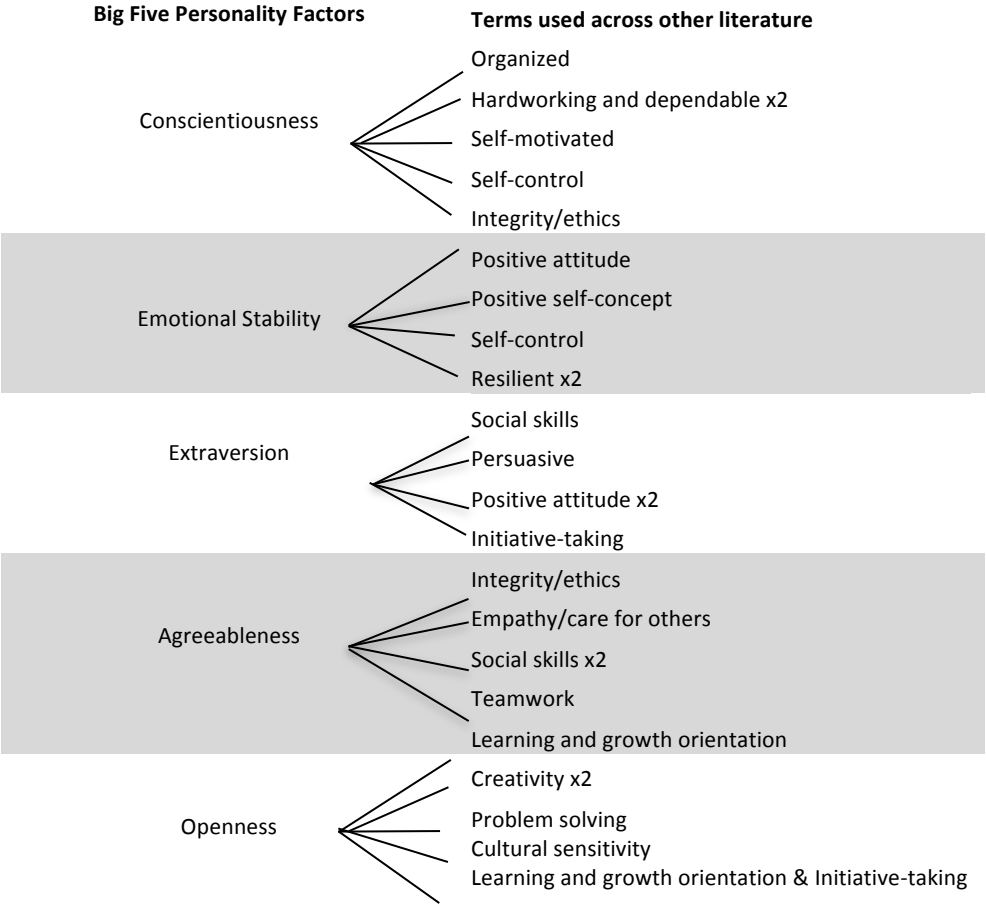
Defining these factors and the specific facets they each incorporate is still under debate in the field. An emerging literature has used factor analysis to examine various measures and help define more universally the facets subsumed under each major trait (B. W. Roberts, Chernyshenko, Stark, & Goldberg, 2005; Woo, Chernyshenko, Longley et al., 2014). Using this literature as a guide, the research team matched each facet to its most closely associated skill "group" (those in Appendix C) identified in our literature review. This method has been used to compare the Big Five to other skills taxonomies in previous work by Sacket & Walmsley (2014). Some facets of the Big Five are traits that are not truly *skills*, such as gregariousness or hostility; these personal qualities were not mapped onto our skill list as they are not relevant to the scope of this paper. In order to verify our decisions in mapping the facets, the research team consulted previous work which has compared terms from various measures and taxonomies to the each of the Big Five Factors (Goldberg, 1990, 1992; Hough & Ones, 2001; Kautz, Heckman, Diris, ter Weel, & Borghans, 2014; MacCann, Duckworth, & Roberts, 2009; B. Roberts, Mike, Harris, & Jackson, 2015; B. W. Roberts et al., 2005; Woo, Chernyshenko, Longley et al., 2014).

To compare the findings from the literature using the Big Five to the results of our literature review, it was necessary to weight the facets (we weighted them equally and will explain why below). In each of the major measurement tools for the Big Five, there are six facets; therefore, each of the Big Five Personality Factors was given a weight of one, like the other soft skills in our review, and the relevant findings for each trait were divided by six (under the assumption of equal weighting of the facets). The relevant facets (those that aligned with a soft skill) were given 1/6 of the number of supportive findings from its parent Big Five Factor in order to simulate its role in the outcome achieved. By using this method, facets of the Big Five are included in the review without disproportionally weighting results derived from studies that use the Big Five.

Current literature is still emerging on the degree to which the each facet drives the success predicted by Big Five parent factor. Previous literature has suggested that facets vary in their relationship to outcomes, although to what degree and for which outcomes has not yet been fully explored (Judge, Rodell, Klinger, Simon, & Crawford, 2013; Vinchur, Schippmann, Switzer Iii, & Roth, 1998; Woo, Chernyshenko, Stark, & Conz, 2014). Based on the current state of knowledge, the research team cannot at this time simulate the weighting of the facets in terms of their importance and therefore have chosen to divide each larger factor evenly by the number of facets (six).

The results are meant to demonstrate which skills are most important for workplace success, taking into account the findings from the Big Five literature. Because some of the skills in our taxonomy are subsumed under the Big Five Factors, they receive even more support from the literature when the Big Five studies are added. This exercise is meant to include those soft skills which are obscured when using the compound traits of the Big Five, using language that employers and youth can understand. In some cases, such as with "hardworking and dependable," a skill aligns with more than one facet, as seen in Appendix B. This is designated in the list below by "x2", meaning it had a weight of two. Appendix B shows the matching of facets to skills in our taxonomy. Below, Chart 2 presents a brief summary of the skills that aligned with the malleable facets of each trait.

### Chart 2. Big Five Facets



## TALLYING EVIDENCE FROM THE LITERATURE REVIEW

Below are two tables with the most supported terms in the literature. The first table includes the Big Five Personality Factors intact (in red), the second table is the result of breaking up the Big Five Factors into their facets and adding these findings to the relevant skill. The terms are in order of the amount of positive findings they enjoy.

Chart 3. Most supported soft skills by the literature for all populations

| | All Outcomes | Employment | Performance | Income | Entrepreneurship |
|---|---|---|---|---|---|
| 1. | Conscientiousness<br><br>Higher-order thinking skills (tied) | Communication | Conscientiousness | Emotional stability/ Neuroticism | Agreeableness |
| 2. | Communication | Higher-order thinking skills | Emotional stability/ Neuroticism | Responsibility | Extraversion |
| 3. | Emotional stability/ Neuroticism | Teamwork | Extraversion | Conscientiousness | Openness to Experience |
| 4. | Social skills | Social skills | Higher-order thinking skills | Extraversion | Conscientiousness |
| 5. | Extraversion | Hard work and dependability | Social skills | Openness to Experience | Emotional stability/ Neuroticism |
| 6. | Teamwork | Leadership | Agreeableness | Positive self-concept | Initiative taking |
| 7. | Openness to Experience | Positive self-concept | Communication | Positive attitude<br><br>Social skills (tied) | Communication |
| 8. | Positive self-concept | Positive attitude<br><br>Planfulness (tied) | Self-control<br><br>Teamwork<br><br>Openness to Experience (tied) | Hard work and dependability | Social skills<br><br>Self-motivated (tied) |
| 9. | Leadership | Learning and growth orientation | Leadership | Self-control | Adaptability |
| 10. | Hard work and dependability | Integrity/Ethics | Self-motivated | Leadership | Positive self-concept |
| 11. | Self-control | Self-motivated | Positive self-concept | Higher-order thinking skills | Creativity |

| | | | | |
|---|---|---|---|---|
| | | | | Positive self-concept<br><br>Leadership (tied) |
| 12. Positive attitude | Self-control<br><br>Professionalism (tied) | Learning and growth orientation | Communication | [Remaining skills are tied with 1 finding each] |
| 13. Responsibility<br><br>Agreeableness (tied) | [five skills are tied: Creativity, Cultural sensitivity, Adaptability, Responsibility, Conscientiousness] | Positive attitude<br><br>Commitment to employer (tied) | Goal orientation | |
| 14. Self-motivated | | Hard work and dependability | Self-motivated<br><br>Planfulness (tied) | |
| 15. Learning and growth orientation | | Adaptability | [Remaining skills are tied with 1 finding each] | |

Chart 4. Most supported soft skills by the literature (with Big Five broken up) for all populations

| All Outcomes | Employment | Performance | Income | Entrepreneurship |
|---|---|---|---|---|
| 1. Higher-order thinking skills | Communication | Social skills | Responsibility | Social skills |
| 2. Communication | Higher-order thinking skills | Self-control | Positive attitude | Initiative taking |
| 3. Social skills | Teamwork | Hard work and dependability | Positive self-concept | Creativity |
| 4. Hard work and dependability | Hard work and dependability | Higher-order thinking | Self-control | Self-motivated |
| 5. Positive attitude | Social skills | Positive attitude | Hard work and dependability | Positive attitude |
| 6. Self-control | Positive attitude | Self-motivated | Social skills | Communication |
| 7. Positive self-concept | Positive self-concept | Integrity/Ethics | Higher-order thinking skills | Learning and growth orientation |
| 8. Teamwork | Leadership | Teamwork | Leadership<br><br>Resilience (tied) | Hard work and dependability |
| 9. Self-motivated | Integrity/Ethics | Communication | Self-motivated | Integrity/Ethics |

| | | | | |
|---|---|---|---|---|
| | | | Initiative-taking (tied) | |
| 10. Integrity/Ethics | Learning and growth orientation | Positive self-concept | Communication | Self-control |
| 11. Leadership<br><br>Learning and growth orientation (tied) | Self-control | Learning and growth orientation | Creativity | Teamwork |
| 12. Initiative taking | Planfulness | Leadership | Integrity/Ethics | Positive self-concept<br><br>Persuasive<br><br>Higher-order thinking skills (tied) |
| 13. Creativity | Self-motivated | Creativity<br><br>Resilience (tied) | Organized | Adaptability<br><br>Resilience (tied) |
| 14. Responsibility | Professionalism | Organized | Persuasive | Empathy/care for others |
| 15. Resilience | Creativity | Commitment to employer | Goal orientation | Cultural sensitivity |

Chart 5. Literature review findings for most supported skills for all populations.
Findings in red brackets are additional findings from the Big Five Factor literature.

| Soft Skills | Findings | | | |
|---|---|---|---|---|
| | Positive | Mixed | Negative | Non-significant |
| **Higher-order thinking skills** | 105<br>(8.83) | -<br>(.33) | 2<br>(1.67) | 7<br>(7.83) |
| **Communication** | 103 | - | - | 4 |
| **Social Skills** | 70<br>(24.83) | -<br>(2.34) | -<br>(14) | 40<br>(27.84) |
| **Teamwork** | 55<br>(7.17) | -<br>(.67) | -<br>(6) | 2<br>(9.33) |
| **Positive self-concept** | 51<br>(13.67) | 2<br>(1.33) | -<br>(.33) | 22<br>(6) |
| **Leadership** | 51 | - | - | 10 |
| **Hard working and dependable** | 50<br>(35) | 1<br>(1.34) | 1<br>(.67) | 18<br>(11.67) |
| **Self-control** | 46<br>(31.17) | 1<br>(2) | -<br>(1) | 15<br>(11.83) |

| | | | | |
|---|---|---|---|---|
| **Positive attitude** | 45<br>(34.67) | 2<br>(1.99) | -<br>(4.33) | 10<br>(24.3) |
| **Responsibility** | 43 | 2 | 1 | 14 |
| **Self-motivated** | 41<br>(17.5) | -<br>(.67) | -<br>(.67) | 7<br>(5.83) |
| **Integrity/ Ethics** | 31<br>(24.67) | 2<br>(1.34) | -<br>(6.67) | 3<br>(15.16) |

## APPENDIX F: EXPERTS CONSULTED

**Experts**

Bonnie Politz, **Independent Consultant**
Nancy Taggart* and Nancy Chervin, **Education Development Center, Inc.**
Wendy Cunningham, Alexandria Valerio, Maria Laura Sanchez Puerta, Tania Rajadel, and Joost De Laat, Samhita Kumar, Alys Willman **World Bank**
Dan Oliver, **International Youth Foundation**
Obed Diener, **FHI360**
Lara Goldmark, **FHI360**
Kristin Brady, **FHI360**
Monika Aring**, FHI360**
Jack Boyson, **Independent consultant**, formally with IYF
Branka Minic, **Independent Consultant**
Xiaodong Zhang Cheri, Fancsali Michaela, Gulemetova Laurence, Marie Dessein, **IMPAQ International**
Andy Munoz and Will Greenway, **National Center for Innovation and Excellence**
Peter Scales, **Search Institute**
Lee Nordstorm, Ami Thakkar, Luis Crouch, **RTI**
Katie Bach, **McKinsey**
Shubha Jayaram, **R4D**
Richard Roberts, **ProExam**
Thomas Gold, **Network for Teaching Entrepreneurship**
Robyn Lovelock, **International Rescue Committee**

**Academics**

Pat Tolan, University of Virginia
Nancy Guerra, **University of Delaware**
Joan Dejaeghere, **University of Minnesota**
Larry Aber and Carly Tubbs, **New York University**

**Focus Group Attendees (excluding those listed above)**

Magdalena Fulton, Creative Associates
Sarabecka Mullen, **International Youth Foundation**
Katie Vickland, **Carana Corporation**
Ami Thakkar, **RTI**
Julia Schultz, **Making Cents**
Carol Ann Smith, **Winrock International**
Steve Robbins, **ETS**
Heath Weems, **ETS**
Eileen McGivney, **Brookings Institution**
Suzanne Duryea, **IDB**
Martin Evans, **UNICEF**
Annalisa Schnitzler, **BIBB**
Koji Miyamoto, **OECD**

## APPENDIX G. SUMMARY OF STAKEHOLDER INPUT

**General comments**

Participants indicated that they see the project as very worthwhile, needed, and ambitious. Other funders and efforts will take note of the skills that emerge as a priority for USAID as well as the measures of them. Some thought should be given to the use of the terms "soft skills" and "non-cognitive skills" because the definitions and acceptance of terms vary.

**Selected skills**

Participants recommended acknowledging the importance of cognitive and technical skills in framing the paper and focus on soft skills. There was wide agreement that it would be beneficial to reach consensus on a small, core group of skills that cut across all sectors, regions, and populations, and then identify specific skills that are important by sector, gender, age, urbanicity and region.

**Considerations for review of prior work**

*Cross-cultural considerations*

In general, participants agreed that it is possible and necessary to define a set of skills that cut across cultures and contexts**.**

The definition of these skills currently varies, and common definitions are necessary. Measurement may need to vary by context, however. Some skills from the "top skills" list may even prove irrelevant for workforce outcomes in certain contexts. However, having a set of common skills to measure across all programming contexts is an important starting point.

- Skills also need to be identified that are applicable in emergency and violent contexts;
- Literature on skills is slanted toward middle and upper income concepts;
- Skills research is focused on large enterprises and formal sectors, but youth in many contexts are working in small enterprises and informal sectors
- Social networks for finding work are important, in addition to skills.
- Boundaries and expectations (external to youth in social ecological model) and commitment to learning (internal self-perception, motivation, values) were most predictive in generally collectivist societies, but specific relationships to labor force outcomes have not been tested.
- Measuring locus of control can be problematic across contexts.
- Measuring outcomes in terms beyond wages or employment is important to understand whether lives are improved (i.e., women can experience violence or vulnerability once they become wage earners).

*Malleability*

- Some skills are easier to teach than others. (i.e., locus of control has to be nurtured over many years, but communication skills can be taught easily.)
- Employers are not interested in the skills that they will not be able to change. They want to screen those people out before they hire (i.e., those who do not have grit, resilience, motivation). Behavioral skills that employers want include reliability, flexibility, problem-solving, communication, and ability to work in teams.
- The degree to which a skill is malleable and cost effective to teach is critical.
- Training in skills depends upon their "level". Foundational skills (i.e., self-regulation) are taught through therapeutic-like training vs. higher level (i.e., problem solving) can be taught in a similar way to cognitive skills. Training in these skills involves:
    - Understanding them
    - Practice: role plays and simulations
    - Reflection/feedback on performance
    - Reinforcing: creating a safe space for the student to learn; role modeling from teachers/students; and consequences for deviation

*Age, life course, and self-reinforcing skills*

- Age is important to consider. The Big Five Personality Factors are predictive for adults; but motivation, self-regulation, and other foundational skills are more important to observe among for 15- to 20-year-olds.
- There are some skills that increase the likelihood of improving other skills (i.e., self-control). This sequencing of curricula is important, as some skills are foundational to others.
- Individual strengths in specific skills can be reinforced over time through self-selection, programs, and work experience.

*Methodological considerations*

- *Considerations for employer surveys*
    - Consider the demand side of youth employment as well as supply side, since there is a skill mismatch between workforce development programs and employers' needs.

    - There may be problems generalizing or comparing across employer surveys. Focus on relative comparisons *within* programs or countries, rather than absolute comparisons *across* programs or countries.
    - It is important to take employer survey responses into consideration, but it is also important to consider what actually happens with hiring and promoting in reality. Often employers are not thinking the same thing as the developers of the surveys in defining skills.
    - For employer surveys, definitions are important, even defining "top priority" or "most needed" for skills gaps can vary, or mean different things across employers.
    - The skills employers need do not always align with their nominations of the most important skills. This suggests that youth are gaining these somehow, so no adjustments are needed. The biggest gaps identified are in problem solving, oral communication, and work ethic.
    - Most youth actually work for small enterprises, whereas most employer surveys are conducted by large enterprises.
    - The proportion of jobs in the informal and formal sector, and what is considered informal and formal, varies across countries.
- *For empirical research*
    - Much of the empirical research is outdated. Several participants suggested that the research team focus less on academic research, as each academic field will have their own agenda.
    - Some participants recommended that the research team focus on RCTs or program evaluations that are trying to change these skills and improve workforce outcomes. These will be more helpful than a continued focus on the economic literature because at this point the field needs to know what can be changed and how it helps vs. what personality types are correlated with outcomes.
- *For selection of small set of skills*
    - Separate out the facets of the Big Five Personality Factors, since the traits are less malleable than the facets.
    - There was disagreement about whether to align the skills with previous personality research. The research team was cautioned to stay away from personality traits as these are more innate characteristics and not skills which can be changed.
    - There is an important distinction between the skills needed for job entry and success at work. There are many workforce outcomes in the world of work. In the future, at the very

least a “0 or 1” outcome for “employed, or not employed and looking for work”. Then, researchers should look at more nuanced details.

- Some participants recommended that the research team consider defining a shorter list of foundational skills (4 or so), and then outline additional skills which are important based on sector, entry point in the workforce, context, gender, etc.
- Participants variously recommended that the research team should not be too narrow, but also not too broad in defining or grouping skills. Also, the research team should eliminate overlap among the skill definitions.
- The set of skills should be important for long-term success. The duration of programs will probably be too short to see any change in long-term outcomes, but the skills being measured and identified as improving are those which will lead to the long term outcome of sustained employment.

**Entrepreneurship**

Entrepreneurship is not as important as anticipated for developing countries, since it is not a large scale solution to youth unemployment. It is important to understand whether entrepreneurship was the desired employment choice for an individual or born out of a lack of stable work. Assessing the quality of entrepreneurship as well as informal employment is important. Only one to five percent of people have the personality traits to become a successful entrepreneur; success is also very dependent on the context and opportunities available.

## APPENDIX H. EVIDENCE FOR KEY SOFT SKILLS ACROSS ALL WORKFORCE OUTCOMES

Descriptions of these skills, and the evidence that supports them, are included below. The skills are discussed in the same order as found in Figure III.2:

**Social skills**
**Higher order thinking skills, including problem-solving, critical thinking and decision-making**
**Self-control**
**Positive self-concept**
**Communication**
**Hardworking and dependable**
**Self-motivation**
**Teamwork**
**Positive attitude**
**Responsibility**
**Integrity/Ethics**

## SOCIAL SKILLS

**Definition**: Social Skills are a cluster of skills necessary to get along well with others, including:

- Respecting and expressing appreciation for others (requiring cultural sensitivity),
- Demonstrating context-appropriate behavior and ability to behave according to social norms (requiring self-control and positive self-concept), and
- Using a range of skills or processes aimed at resolving conflict (requiring empathy, critical thinking, problem solving, decision-making, and integrity) (Lippman, Ryberg et al., 2013).

This definition reflects a complex interaction of many other skills, but can be conceptualized and measured as a discrete skill, and one that is very important for achieving success in the workforce. Social skills can be generalized as the way one interacts with others.

Numerous terms from the reviewed literature were classified as social skills, capturing the emotional, social, and cognitive components of the skill. Terms from the literature include: interpersonal or social skills, conflict management or negotiation, ability to relate well to others, antisocial behavior (reverse coded), likeability, working with others, and being respectful of others. See Appendix C for a complete list of terms from the literature and Appendix D for a description of terms used for social skills across fields.

**Observable workplace behaviors:** Employee behaves according to social norms in the workplace, acts respectfully toward others and refrains from creating conflict, works to resolve conflicts when they arise, and works well with and is friendly toward people from diverse backgrounds.

***Employment.*** The link between social skills and employment enjoys empirical support from two rigorous longitudinal studies in the United Kingdom. One study found that youths' positive peer relations were protective against unemployment at age 26 for girls even after controlling for cognitive development, but did not protect against prolonged unemployment for either gender once an individual was unemployed (Feinstein, 2000). Social skills, measured in childhood, predicted both being employed and the level of employment at age 42 after controlling for parent, child, and local characteristics (Carneiro, Crawford, & Goodman, 2007). However, an additional empirical study failed to find a relationship between elements of social skills, including behavior in conflict situations and the ability to relate to others, and employment or formality of employment in the Dominican Republic (Ibarraran, Ripani, Taboada, Villa, & Garcia, 2012).

Employers also support the importance of social skills for employment across formal and informal sectors. Employers responding to surveys in Egypt, India, Vietnam, the United States, and a selection of countries in Africa emphasized the importance of interpersonal skills, social perceptiveness, and respect for seniors (Aring, 2012; Burnett & Jayaram, 2012b; Carnevale, 2013; National Association of Colleges and Employers, 2013).

Social skills appear in the top skill recommendations of six consensus projects focused on Europe and the United States. The Modernising higher Education through Soft skills project (ModES) project in Europe rated negotiation as their 16$^{th}$ skill and conflict management as their 17$^{th}$ skill—both components of social skills (Education Audiovisual & Culture Executive Agency, 2011). In addition, the Definition and Selection of Key Skills (DeSeCo) project, focusing on OECD countries, included "interactions in heterogeneous groups" as one of their main skill sets. Two subcomponents of this category, conflict resolution and ability to relate well to others, relate directly to social skills (OECD, 2001b). The Key Competencies for Lifelong Learning project in the European Union recommended the broad domain of civic and social skills (Gordon et al., 2009). An additional project from the U.K. (McNeil, Reeder, & Rich, 2012) and the Partnership for 21$^{st}$ Century Skills from the U.S. (Partnership for 21st Century Skills, 2007) included social skills and building relationships as key skills for employment.

Additionally, a literature review by the National Academy of Sciences (U.S.) included conflict resolution as an important skill in its resulting framework (Pellegrino & Hilton, 2012), as did a review by the Forum for Youth Investment (Forum for Youth Investment, 2015). A non-rigorous literature review in Kenya focusing on the informal sector also found that social skills are important to training firms (Balwanz, 2012). An International Labour Organization (ILO) paper includes social skills in a literature review resulting in a skills framework (International Labour Organization, 2008), as does a recent review and framework from the OECD (OECD, 2015b). Other types of literature, including frameworks and policy pieces focusing on the United States support the importance of social skills (Pennsylvania Academic and Career/Technical Training Alliance, 2011; Perkins Collaborative Resource Network, ; SRI International, 2005; U.S. Department of Labor Office of Job Corps, 2013a, 2013b), as does another framework of employability skills focusing on five developed countries (Blades, Fauth, & Gibb, 2012).

***Performance and promotion***. The empirical literature linking social skills to job performance includes two longitudinal studies supporting the importance of social skills. The first is set in a Midwestern city in the United States and examines the relationship between childhood antisocial behavior and social skills, and adulthood workplace competence, finding that social skills predict workforce competence in adulthood while antisocial behavior predicts a lack of workforce competence, even after controlling for academic achievement (Masten, Desjardins, McCormic, Kuo, & Long, 2010). An additional study, set in New Zealand found a positive relationship between sociability and establishing relationships at age 18 and occupational attainment and work stimulation at age 26 (B. W. Roberts, Caspi, & Moffitt, 2003). However a third, somewhat older study also set in the United States failed to find a relationship between interpersonal skills and task performance (Neuman & Wright, 1999). Additionally, a meta-analysis found "likeability" operationalized as a person who "shows interpersonal skill, exhibits capacity to compromise, demonstrates tactfulness and sensitivity, shares credit" predicted job performance (J. Hogan & Holland, 2003, p. 105). This analysis did not specify the region of its study sample.

Employers from countries around the world as diverse as Brazil, China, Indonesia, the Philippines, and the United States indicated the importance of social skills for getting ahead, in employer surveys. Specifically, employers indicated that the ability to deal with people is important in Indonesia; an ideal employee is able and willing to help others in China; and in Brazil an ideal employee has relationship skills and is respectful of others (Briones, 2010; di Gropello, Kruse, & Tandon, 2011; Playfoot & Hall, 2008; Riordan & Rosas, 2003; Robles, 2012).

With regard to consensus projects, both SCANS and Equipped for the Future came to consensus around social skills. Specifically, these U.S.-based projects recommended sociability, conflict resolution and negotiation, and the ability to teach others new skills (Stein, 2000; The Secretary's Commission on Achieving Necessary Skills, 1991). Other literature included two U.K.-based literature reviews (Ferris, Perrewe, Anthony, & Gilmore, 2000; Hurrell, 2009) and one worldwide literature review (Singh, 2000) which cited social skills as important for job performance.

***Income and wages.*** Support for the relationship between social skills and income comes exclusively from empirical studies, most of which are focused on the developed world. One exception studied employers of 17-25 year olds in Chile, Argentina, and Brazil, and found a link between social skills and higher salaries. Interestingly, the authors also looked at characteristics of the companies that tended to value social skills and found that these companies paid 34 percent higher salaries, on average, than companies that tended to value cognitive skills (Bassi, 2012). An additional study in the Dominican Republic failed to find a relationship between the following elements of social skills and earnings: behavior in conflict, ability to relate to others, and empathy and communication skills (Ibarraran et al., 2012).

The remaining empirical studies were large-scale longitudinal studies from the United States, New Zealand, the United Kingdom, Sweden, and Finland. These studies find that elements of social skills,

including the ability to relate to others, prosocial behavior, peer relations, and not being withdrawn, measured between the ages of 10 and 18 predict earnings well into young adulthood. These studies meet either our most rigorous or second most rigorous criteria and most of these studies control for cognitive development (Duckworth et al., 2012; Feinstein, 2000; Lleras, 2008; Obschonka, Duckworth, Silbereisen, & Schoon, 2012; Osborne-Groves, 2005; B. W. Roberts et al., 2003).

Additional studies in the United Kingdom and the United States failed to find a relationship between certain elements of social skills and earnings (Carneiro et al., 2007; Duncan & Dunifon, 1998; Feinstein, 2000).

***Entrepreneurial success.*** There are a small number of empirical studies linking social skills with entrepreneurial success. In Great Britain, a multivariate longitudinal study found that social skills measured at age 10 predicted higher wages among entrepreneurs (Obschonka et al., 2012). Additionally, a study in China found a positive relationship between entrepreneurs putting effort into getting others to like them and having strong social perceptions, and some, but not all measures of successful businesses (Baron & Tang, 2009).

Additionally, a non-rigorous international literature review found a link between social skills and entrepreneurial success (Markman & Baron, 2003). A survey of young male and female entrepreneurs ages 20 to 35 from the West Bank identified interpersonal skills as important for their success as well (Youth Entrepreneurship Development, 2011).

***Endorsement from the field.*** Social skills were endorsed four times in our expert consultations, and support was also strong in focus groups with youth and employers. According to youth in Mozambique, knowing how to get along with people is important in obtaining employment. More specific skills mentioned in this focus group included using appropriate language, which can also be considered a communication skill, and being able to work with people across different parts of a company. The support for social skills was echoed in focus groups with employers in Mozambique and Zimbabwe, and in a panel of employers in Boston, MA. Conflict resolution is an in-demand skill according to an employer in Zimbabwe and being friendly, especially in customer-service roles, was brought up by another Zimbabwean employer.

### STRENGTH OF EVIDENCE FOR *"SOCIAL SKILLS"*

Social skills are important for achieving success across all four outcome groups. The support for social skills is balanced across types of evidence, with empirical support for all outcomes.

The empirical evidence in support of social skills is almost exclusively focused on developed countries. These studies have strong methodologies, with many large-scale, longitudinal, and multivariate designs. It must be kept in mind that not all empirical studies found significant results between social skills and outcomes. A number of studies failed to find a relationship. Importantly, though, no studies found that social skills led to negative employment outcomes.

Employees from around the world also agree that social skills are important for obtaining employment, as well as getting ahead once on the job. As expected, employer surveys did not apply to the outcome of entrepreneurial success; however, there was also no employer support for the relationship between social skills and income.

Social skills also appears in lists of suggested skills from many frameworks collected for this project. Elements of social skills are found in the Work Ready Now! Workforce Readiness program of the Education Development Center (Education Development Center, n.d.), a framework of skills needed in the Japanese business sector (Yoshida, Yashiro, & Suzuki, 2013), a framework produced by the Joint Center for Political and Economic Studies (Conrad, 1999), and the New Zealand Spotlight Competence Framework (Finegold & Notabartolo, 2010). In addition, youth and employers in focus groups across Africa agreed that social skills are an important skill for workforce outcomes.

Social skills are subsumed under two Big Five Personality Factors: Agreeableness and Extraversion, neither of which is highly predictive of workforce outcomes although some studies reviewed demonstrate significant, positive relationships. Social skills is aligned with terms used to describe two facets of Agreeableness (Goldberg, 1990; Sackett & Walmsley, 2014). Across all workforce outcomes, Agreeableness was cited by four empirical studies, four meta-analyses, and three literature reviews as predicting positive workforce outcomes. The majority of this literature had designs that were not at the highest level of rigor, however.

Across all workforce outcomes, Extraversion was cited by 14 empirical studies, five meta-analyses, and three literature reviews as predicting positive workforce outcomes. As mentioned above, before accounting for these findings, social skills were among the top skills of importance across all outcome groups. After the break out of the Big Five, social skills remained among the top skills across all outcomes and rose to be the most important skill for entrepreneurial success.

The literature supports social skills as a universally important skill—across outcomes, types of evidence, regions of the world, and types of employment. Indeed, it is hard to imagine a position in which social skills would not be an asset.

## HIGHER ORDER THINKING SKILLS, INCLUDING PROBLEM SOLVING, CRITICAL THINKING, AND DECISION-MAKING

**Definition:** This skill encompasses three inter-related constructs: problem solving, critical thinking, and decision-making, which have necessarily been combined here because the research literature reviewed often measured them together as one construct. For example, Casner-Lotto and Barrington (2006, p. 16)

define this combination as the ability to "exercise sound reasoning and analytical thinking; use knowledge, facts, and data to solve workplace problems, apply math and science concepts to problem solving." Problem solving, critical thinking, and decision-making are often combined because critical thinking serves as the basis for problem solving and decision-making. Each of these skills may reflect the same underlying skill set that involves identifying an issue and taking in information from multiple sources to evaluate options in order to reach a reasonable conclusion (Stein, 2000). See Brewer (2013) for a more extensive definition that includes skills the research team have categorized elsewhere, such as planfulness and adaptability.

Effective problem solving, critical thinking, and decision-making require self-control and integrity/ethics. These higher-order thinking skills support other workplace skills such as communication and being hardworking and dependable.

**Observable workplace behaviors:** Employee is able to solve workplace problems independently using available resources, prior knowledge, and experience; employee makes logical, thoughtful decisions; employee demonstrates ability to think through steps of a task, and anticipate challenges as well as consequences of decisions and actions.

***Employment.*** Three empirical studies found a positive significant relationship between decision-making and employment; these studies included samples in Armenia, Georgia, Tajikistan and Uzbekistan (Herrera-Sossa, Valerio, Monroy-Taborda, & Chen, 2015; Nikoloski & Ajwad, 2014; Valerio, Herrera-Sosa, Monroy-Taborda, & Chen, 2015). Higher-order thinking skills have much more support among employer surveys. Internationally, problem solving and critical thinking are identified by employers as important for employment around the world. Surveys in Armenia, Brazil, the Philippines, Georgia, India, Mexico, Morocco, Saudi Arabia, Turkey, Vietnam and the informal sectors of Vietnam and Cambodia support the importance of problem solving or critical thinking (Aring, 2012; Bodewig & Badiani-Magnusson, 2014; Burnett & Jayaram, 2012b; Di Gropello, 2010; Herrera-Sossa et al., 2015; Mourshed, Farrell, & Barton, 2012; Valerio et al., 2015). In addition, a review of 28 employer surveys found that problem solving was a top skill in Pakistan, Macedonia, and Lebanon and decision-making was also a top skill for employment in Macedonia, although this finding was not specifically for youth (Cunningham & Villasenor, 2014).

In the United States, seven different studies of employer input, most of which focused on entry-level jobs, identified problem solving, critical thinking, or decision-making as important for employment (Anderson, 2014; Aring, 2012; Carnevale, 2013; Casner-Lotto & Barrington, 2006; Maes, Weldy, & Icenogle, 1997; National Association of Colleges and Employers, 2013). For example, in one survey over 50 percent of employers indicated that they search for problem solving skills when reviewing resumes (National Association of Colleges and Employers, 2013). In another survey, both decision-making and problem solving were identified as top skills in hiring decisions (Maes et al., 1997).

Six consensus projects identified higher-order thinking skills in their lists of key skills. Specifically, the ILO includes problem solving as one of their four core employability skills for youth entering the workforce. They define problem solving broadly with many sub-components that the research team consider to be

separate skills, including thinking creatively and adapting to new circumstances (Brewer, 2013). In the United States, the Department of Education included all three sub-skills in their Employability Skills Framework (Perkins Collaborative Resource Network), while the Ready by 21 framework includes several sub-elements of all three skills (Forum for Youth Investment, 2015). In Europe, the Modernising higher Education through Soft skills project (ModES) identified decision-making and analytic skills in their framework (Education Audiovisual & Culture Executive Agency, 2011). The Learning Metrics Task Force (2013), examining countries all over the world, include both critical thinking and problem solving in their skill set. Additionally, a U.K. project includes "planning and problem solving" in its resulting framework (McNeil et al., 2012), as does the Definition and Selection of Key Skills (DeSeCo) project of the OECD which includes problem solving elements in its broader category of "using tools interactively" (OECD, 2001b), and the an ILO framework of critical occupational skills (International Labour Organization, 2008).

In addition to the evidence presented above from employer surveys and consensus projects, higher-order thinking skills are endorsed by a number of less rigorous pieces, including four literature reviews (Burnett & Jayaram, 2012b; Finegold & Notabartolo, 2010; Forum for Youth Investment, 2015; Pellegrino & Hilton, 2012), as well as four policy pieces (Partnership for 21st Century Skills, 2010; U.S. Department of Labor Office of Job Corps, 2013a, 2013b; World Bank, 2013), a survey of youth in Arab countries (International Finance Corporation World Bank & Islamic Development Bank, 2011), and a report focusing on critical skills necessary for new entry-level workers (SRI International, 2005). Two frameworks focused on employability skills in developed countries also include higher-order thinking (Blades et al., 2012; Pennsylvania Academic and Career/Technical Training Alliance, 2011).

***Performance and promotion.*** Empirically, three meta-analyses examined the relationship between higher-order thinking skills and job performance. These skills (creating/conceptualizing, analyzing/interpreting, and situational judgment) were all found to be positively related to job performance (Bartram, 2005; J. Hogan & Holland, 2003; McDaniel, Morgesen, Finnegan, Campion, & Braverman, 2001).

One employer survey with qualitative and quantitative components found that critical thinking was an important skill for an "ideal employee" across the developing countries examined. More specifically, decision-making was highly ranked by employers in both India and Brazil and problem solving was used to describe ideal employees in Brazil and South Africa (Playfoot & Hall, 2008). Additional surveys in the United States and Indonesia found that problem solving was important to employers (Burrus, Jackson, Xi, & Steinberg, 2013; di Gropello et al., 2011; Riordan & Rosas, 2003). None of these surveys focused specifically on youth, however.

Three consensus projects: Equipped For the Future and SCANS, both based in the U.S., and the U.K. Commission for Employment and Skills, include this skill in their lists of key skills. Equipped For the Future has all three skills in their framework (Stein, 2000). The SCANS project identified three foundational skills, as well as five skills. Critical thinking, decision-making, and problem solving are included under the larger "thinking skills" at the foundational level. The SCANS project posits that an

individual must be competent in all of the foundational skills before they can be competent in the five skills and these skills are a requirement for success in entry-level careers (The Secretary's Commission on Achieving Necessary Skills, 1991). The U.K. Commission for Employment and Skills includes "thinking and solving problems" as a key skill category; sub-skills include prioritizing, reflection, creativity, and analyzing situations (UK Commission for Employment and Skills, 2009).

A literature review focusing on North America and Asia supports the relationship between critical thinking and job performance (Soland, Hamilton, & Stecher, 2013), as does a literature review focused on OECD countries (OECD, 2001a). A survey of students, teachers, professionals, and experts in India also indicated that problem solving was one of the most important soft skills (Wats & Wats, 2009).

***Income and wages.*** Four empirical studies found a relationship between problem solving and income in Armenia (specifically youth), Singapore, Great Britain, and Chile (Bassi, 2012; Green, 1999; Ramos, Ng, Sung, & Loke, 2013; Valerio et al., 2015). One study analyzing the United States' Department of Labor's O*NET database found a positive correlation between problem solving and wages. This study was not specific to youth (Burrus et al., 2013). One review of empirical studies, however, was unable to find a relationship between problem solving or analytic skills and wages (Heijke & Meng, 2006). One non-rigorous literature review cited a relationship between analytical skills and higher wages among males (Finegold & Notabartolo, 2010).

***Entrepreneurial success.*** The Network for Teaching Entrepreneurship includes critical thinking and problem solving in its framework of important skills for success as an entrepreneur (Network for Teaching Entrepreneurship, 2014). No studies in the literature review identified higher-order thinking skills as a predictor of entrepreneurial success.

***Endorsement from the field.*** Higher-order thinking skills were frequently endorsed in our expert consultations. Problem solving/critical thinking was endorsed seven times, and decision-making was endorsed an additional time. The experts emphasized that problem solving is a multi-faceted skill that includes underlying skills such as interpersonal skills, aspects of communication, and cooperation. Our experts pointed out that this skill is not only in demand with employers, but also lacking in youth. There is a large gap between current levels and employers' needs. The consulted experts also said this skill is amenable to being taught in a school-like setting.

Higher-order thinking skills were not discussed among employer and youth in the focus groups in Zimbabwe, Kenya, and Mozambique.

Thirteen other frameworks were identified in this review that include higher-order thinking skills, including the "Critical Skills Required of the Canadian Workforce" (Bloom & Kitagawa, 1999), the Work Ready Now! Workforce Readiness program of the Education Development Center (Education Development Center, n.d.), frameworks produced by National Children's Bureau (CBI, 2010), the Joint Center for Political and Economic Studies (Conrad, 1999), and the Forum for Youth Investment (Wilson-

Ahlstrom, Yohalem, DuBois, Ji, & Hillaker, 2014), as well as the New Zealand Spotlight Competence Framework (Finegold & Notabartolo, 2010).

### STRENGTH OF EVIDENCE FOR *"HIGHER ORDER THINKING SKILLS, INCLUDING PROBLEM SOLVING, CRITICAL THINKING, AND DECISION MAKING"*

Higher-order thinking skills had the most support in the literature across outcomes and populations (adults and youth combined). The bulk of the literature on higher-order thinking skills focuses on employment outcomes and performance on the job. Little to no work has been done linking this skill to income or entrepreneurial success. Logically, one would think that this is an important skill for entrepreneurs because they must rely on themselves to solve problems and make decisions related to their business success. Additionally, two empirical studies of moderate and low rigor found a negative significant relationship between problem solving and entrepreneurial success in Ghana (World Bank, 2014) and critical thinking and salary in Argentina (Bassi, 2012), perhaps revealing some contextual differences.

The majority of the research on this skill is in the form of employer surveys. This literature supports its importance across developed and developing countries, and specifically for entry-level employment in the United States. It is also supported in consensus projects and by the advisors of this project.

Very little empirical research, however, has been conducted examining higher-order thinking skills. This could be due to the difficulties associated with measuring this skill in a survey. More work is needed in this area.

On the other hand, empirical research has been conducted with the Big Five factor, Openness to Experience, of which critical thinking is a sub-component. Openness to Experience was found to predict workforce success in thirteen empirical studies, five meta-analyses, and two literature reviews. For example, in a worldwide meta-analysis of predictors of entrepreneurial performance, Openness was predictive of two indicators of success: entrepreneurial performance and growth (Zhao, Seibert, & Lumpkin, 2010). In addition, a U.S. longitudinal study found that Openness was predictive of occupational status (Judge, Higgins, Thoresen, & Barrick, 1999).

## SELF-CONTROL

The literature refers to individuals with self-control as "self-disciplined," people who "follow the rules," with the "ability to manage emotions," and demonstrating "attentiveness," and "emotional competence."

**Definition:** Self-control refers to one's ability to delay gratification, control impulses, direct and focus attention, manage emotions, and regulate behaviors. Someone with a high proficiency in self-control is able to focus on tasks and manage behavior despite distractions or incentives to do otherwise.

Self-control is foundational to social skills, communication, being hardworking and dependable, teamwork, and higher-order thinking skills.

**Observable workplace behaviors:** Does not interrupt others or speak out of turn, is calm and collected (displays appropriate emotions at work), articulates feelings in a professional manner (i.e., frustration, disappointment), is able to work despite potential distractions or incentives that might take them off task, stays on-task throughout the work day and does not engage in excessive personal conversation.

***Employment***. Two empirical studies found indicators of self-control in childhood predictive of adult employment. One is a longitudinal study in Finland; a child's level of attentiveness at age eight was predictive of their employment in upper-level, white collar jobs at age 42 (Viinikainen, Kokko, Pulkkinen, & Pehkonen, 2010). The other, a longitudinal design in the U.K., found childhood attentiveness to predict length of unemployment in adulthood among a sample of women (Feinstein, 2000). Four employer surveys reported that employers look for "self-discipline" or an employee who can "manage their emotions" (Aring, 2012; Burnett & Jayaram, 2012b; Pina, Kotin, Hausman, & Macharia, 2012; Savitz-Romer, Rowan-Kenyon, Zhang, & Fancsali, 2014) . One of these survey did not include detailed information on the size of enterprises surveyed in India, Cambodia, Senegal, and Kenya; one included small- and medium-sized enterprises in Burkina Faso; and the third included employers of all sizes in India. Five literature reviews cited self-control, including emotional competence (ability to manage one's own emotions), as essential for getting a job (Burnett & Jayaram, 2012b; Forum for Youth Investment, 2015; Guerra, Modecki, & Cunningham, 2014; Hurrell, 2009; OECD, 2015b). A U.K. consensus project includes "managing feelings" and "self-discipline, management, and control" as critical skills (McNeil et al., 2012). Three conceptual frameworks reviewed include self-control (one defined as knowing how to follow the rules and maintain employment, another as recognizing and managing emotions) (Blades et al., 2012; Pennsylvania Academic and Career/Technical Training Alliance, 2011; U.S. Department of Labor Office of Job Corps, 2013b).

***Performance and promotion.*** Five empirical studies support a connection between self-concept and job performance. These longitudinal studies in the U.S., Finland, Germany and New Zealand found indicators including rule-abiding behavior; being reflective, cautious, careful, rational, and planful (as one construct called self-control); constraint (combination of self-control, harm avoidance, and traditionalism); self-regulation; and inattentiveness predicted occupational attainment or performance in adulthood, or were negatively associated in the case of inattentiveness (Masten et al., 2010; Rauber, 2007; B. W. Roberts et al., 2003; Viinikainen et al., 2010). One meta-analysis that does not describe its region of focus found a positive, significant relationship between several indicators of self-control and job performance (J. Hogan & Holland, 2003). Three employer surveys from the U.S., U.K., and the United Arab Emirates found that employers valued self-management, self-control, and emotional intelligence when assessing employees' performance (CBI, 2010; Playfoot & Hall, 2008; Robles, 2012); two of these surveys did not provide information on the representation of sectors or sizes among employers, while the third was representative of multiples sectors and sizes.

SCANS includes self-management as a personal foundational skill for the skills in their framework (The Secretary's Commission on Achieving Necessary Skills, 1991). One worldwide literature review also supports a connection between individuals with high levels of emotional control and job performance (Singh, 2000).

***Wages and income***. Three empirical studies (from New Zealand, Germany, and Finland) found positive, significant relationships between one's level of self-control and wages or financial security (Rauber, 2007; B. W. Roberts et al., 2003; Viinikainen et al., 2010). A literature review also cited a connection between self-regulation and wages (Duckworth, Akerman, MacGregor, Salter, & Vorhaus, 2009); the region was not described.

***Entrepreneurial success.*** A survey of young entrepreneurs in the West Bank nominated "patience" as a key skill for success as an entrepreneur (Youth Entrepreneurship Development, 2011). No other studies examined the relationship between self-control and entrepreneurial success.

***Endorsement from the field.*** Self-regulation and managing emotions were each nominated as an important foundational skill by experts in two convenings associated with this project.

Five frameworks collected include self-control in their hierarchy of important skills for youth to succeed in the workforce, including frameworks from the Work Ready Now! Work Readiness program of the Education Development Center (Education Development Center, n.d.), a framework produced by the Joint Center for Political and Economic Studies (Conrad, 1999), the National Children's Bureau in London (CBI, 2010), and a study of skills needed in Japanese businesses (Yoshida et al., 2013). Please refer to Appendix A for a full list of frameworks. The worldwide Learning Metrics Task Force includes self-regulation as a critical skill learned in early childhood (Learning Metrics Task Force, 2013).

### STRENGTH OF EVIDENCE FOR *"SELF CONTROL"*

Although there may be more evidence linking self-control to earlier life outcomes, including academic achievement, the empirical evidence and consensus projects reviewed here provide strong support for the importance of this skill in achieving workforce outcomes. Six rigorous or moderately rigorous empirical studies, three rigorous and four less rigorous employer surveys, and one high quality meta-analysis support self-control.

Six studies reviewed did not find a significant relationship between some measures of self-control and workforce outcomes; one looked exclusively at females and the relationship of self-control to wages (Rauber, 2007).

Self-control is aligned with facets of two Big Five factors: Conscientiousness and Emotional Stability (see Appendix B). These two constructs have the most support from the literature as being important for workforce outcomes among the Big Five factors. Across all workforce outcomes, the construct Conscientiousness was cited by sixteen empirical studies, twelve meta-analyses, and nine literature reviews as predicting positive workforce outcomes. Judge et al., (2013) found that the facet of "self-discipline" under Conscientiousness had the third highest correlation with job performance among the

six Conscientiousness facets. Similarly, Emotional Stability is also predictive of workforce outcomes. Emotional Stability was predictive of workforce outcomes in 19 empirical studies, nine meta-analyses, and four literature reviews. Four of the empirical studies are of the highest level of rigor, with eight being of the next highest level. Five of the meta-analyses are multi-regional and of high quality. Most studies utilize samples from the developed world, but there are studies also from Peru, Armenia, and Bolivia.

Despite the work done by Judge et al., (2013), the current knowledge about the weight of the specific element of "self-control" under Conscientiousness in its power to predict workforce success overall is still emerging. To incorporate the findings of the Big Five into the research base for self-control, the research team aligned the relevant terms under Conscientiousness and Emotional Stability (see Appendices B and E for full explanation of methods). After accounting for these findings, self-control was elevated to be among the top skills for entrepreneurial success and income, where previously it was not among the most supported skills for these outcomes.

## POSITIVE SELF-CONCEPT

Beliefs and feelings about the self are multifaceted and foundational to the development of other soft skills. The skill, "positive self-concept" includes a number of distinct concepts from the literature including self-esteem, self- confidence, self-efficacy, self-awareness, and self-belief. It also includes one's ability to understand social contexts, roles, and boundaries and to have appropriate attitudes.

**Definition:** Positive self-concept is defined, therefore, as a realistic awareness of oneself and one's abilities that reflects an understanding of his/her strengths and potential (and hence, is *positive*). This awareness is derived from an accurate understanding of one's current environment, role, or responsibilities in relation to others. This skill is an important foundational component of almost all other skills in this framework; one's self-concept may impact their ability to make decisions or to be motivated and also may impact the way he/she relates and engages with others. Possessing a positive self-concept is foundational for self-motivation, positive attitude, social skills, communication, teamwork. This skill group incorporates emotional, social, and cognitive aspects:

1) Emotional: Self-esteem and self-confidence: feeling good about oneself and feeling capable of contributing positively to the world.

2) Social: Appreciating one's roles within acceptable boundaries and having appropriate attitudes toward self within the social context, thus providing a foundation for other skills such as teamwork.

3) Cognitive: Awareness of and belief in one's strengths, capabilities, and efficacy; positive attitudes toward the self.

**Observable workplace behaviors:** Employee is aware of their strengths and areas needing development (can identify these areas accurately); employee expresses pride in their work and can recognize and celebrate their own accomplishments.

***Employment.*** Two longitudinal studies reported positive, significant effects of positive self-concept on employment outcomes: one found a significant relationship between occupational self-efficacy and work hours in Germany (Spurk & Abele, 2011) and the other between self-esteem at age 10 and length of unemployment in England, although these results were mixed for boys and girls (Feinstein, 2000). Boys with high self-esteem at age 10 were significantly less likely to spend time unemployed; girls with high self-esteem at age 10 were significantly more likely to spend *more* time unemployed. A cross-sectional study in Chile and Argentina found a positive, significant relationship between self-efficacy and workplace participation among 25-30 year olds (Bassi, 2012). One employer survey in Cambodia nominated "appropriate attitudes especially among unskilled workers"; this survey did not have information on employer sector or size (Burnett & Jayaram, 2012b); a U.S. survey of 103 employers also found elements of positive self-concept to be important (Savitz-Romer et al., 2014). A U.S. meta-analysis found job search self-efficacy and self-esteem to be positively, significantly related to the number of job offers one receives (Kanfer, Wanberg, & Kantrowitz, 2001).

Three consensus projects include positive self-concept. The Learning Metric Task Force includes "self- and community-identity" in their framework for universal learning which ultimately leads to successful workforce outcomes, among others (Learning Metrics Task Force, 2013). A European project focused on four countries includes self-awareness as a critical skill (Education Audiovisual & Culture Executive Agency, 2011) and a project from the U.K. includes "confidence and agency" which includes self-reliance, esteem, efficacy, and belief (McNeil et al., 2012).

Four literature reviews find that self-awareness, self-confidence, job search self-efficacy, and self-esteem are important for obtaining work across multiple countries worldwide (Guerra et al., 2014; Smith, Donohue, & Bligh, 2014); in Kenya (Balwanz, 2012) and specifically in Cambodia, India, Kenya, and Senegal (Burnett & Jayaram, 2012b). Lastly, a conceptual framework focused on developed countries includes self-efficacy, self-esteem, and confidence as important for employability (Blades et al., 2012).

***Performance and promotion.*** One longitudinal empirical study found that well-being at age 18 (defined as a multi-faceted construct including "having a happy, cheerful disposition, feels good about self and sees a bright future") predicted one's ability to "use skills at work, learn new things, and have others come to you for advice at work" at age 26. The study sample included youth from New Zealand (B. W. Roberts et al., 2003). One U.S.-based meta-analysis found a positive relationship between self-efficacy and job performance (Colquitt, LePine, & Noe, 2000). Three employer surveys nominated elements of positive self-concept when employers were asked to describe an "ideal employee" (Briones, 2010; Playfoot & Hall, 2008; Riordan & Rosas, 2003). One is U.S.-based, another based in the Philippines, and the third draws from sources in Brazil, the United Arab Emirates, and China; the first two do not provide

information on enterprise size, the third surveyed employers at small and medium enterprises. Elements of positive self-concept by country from these employer surveys are listed below:

| | |
|---|---|
| **United States** | Self-esteem |
| **Philippines** | Positive identity (self-esteem, self-confidence) |
| **Brazil** | A happy professional<br>Self-awareness: knowing one's strengths and limitations<br>Self-esteem<br>Pride in their work |
| **United Arab Emirates** | Self-aware |
| **China** | Ability to understand their environment and appreciate their boundaries |

The Secretary's Commission on Achieving Necessary Skills (1991) includes self-esteem in its framework for skills needed in work. Two literature reviews supported the importance of confidence, one was focused on the informal sector (Jiyane & Zawada, 2013). A U.K.-based literature review also cited a relationship between poor self-awareness and "derailment: when an otherwise promising executive is fired, forced to quit, or no longer gets promotions" (Hurrell, 2009, p. 29).

***Income and wages.*** Nine empirical studies (five of high rigor) found a positive empirical relationship between elements of positive self-concept and income. Seven of the studies are longitudinal analyses with U.S. samples; three use data from the National Longitudinal Survey of Youth (NLSY), one uses data from the Panel Study of Income Dynamics (PSID), and one uses data from the Adolescent Health Survey. In analyses of these data sets, self-esteem in adolescence was predictive of wages later in life (Fortin, 2008; Goldsmith, Veum, & Darity, 1997; Murname, Willett, Jay, & Yves, 2001). A study of 25-30 year-olds in Chile and Argentina found a relationship between self-efficacy and wages (Bassi, 2012). Others found that a "sense of personal efficacy at age 21-29" (Duncan & Dunifon, 1998), self-assessed intelligence (Antecol & Cobb-Clark, 2010), and self-assessed leadership (Kuhn & Weinberger, 2005) predict later wages. An additional longitudinal study from New Zealand found well-being (as defined in the performance section above) to predict not only performance, but also financial security (B. W. Roberts et al., 2003); and lastly an analysis of data from the British Cohort Study also yielded a positive, significant relationship between self-esteem in adolescence and hourly wage in the late 20's (Feinstein, 2000).

***Entrepreneurial success.*** One literature review supported self-efficacy as an important skill for entrepreneurial success (Markman & Baron, 2003). A survey of entrepreneurs in the West Bank said self-confidence was an important skill for successful entrepreneurship (Youth Entrepreneurship Development, 2011).

***Endorsement from the field***. Elements of positive self-concept (including self-confidence and self-esteem) were nominated on five occasions by experts during interviews, focus groups, and convenings associated with this project. This skill is seen in curricula and frameworks (Smith et al., 2014) used by international development organizations that prepare youth in the developing world for work and was discussed as an important foundational skill by practitioners during the focus group of implementers that took place at Child Trends on June 24, 2014. Five additional frameworks collected in our review include elements of positive self-concept; these include a framework produced by the Joint Center for Political and Economic Studies (Conrad, 1999), a framework produced by the Forum for Youth Investment (Wilson-Ahlstrom et al., 2014),and "The Critical Skills Required of the Canadian Workforce" (Bloom & Kitagawa, 1999).

### STRENGTH OF EVIDENCE FOR *"POSITIVE SELF-CONCEPT"*

According to the empirical evidence, positive self-concept is an important skill for predicting adult income and wages. Its importance in obtaining work and job performance and is supported by rigorous employer surveys in the developing world and by practitioner knowledge gathered in focus groups. There is less evidence that demonstrates its importance for entrepreneurial success; this is clearly an area where more evidence is needed to draw conclusions. The supportive evidence is generally strong in applied rigor; the 13 empirical studies are all of the highest or next highest level of quality, with one at a lower level. Two of the four employer surveys are of high rigor. The supportive literature also includes two meta-analyses.

No studies found a negative relationship between positive self-concept and workforce outcomes. Nine studies reviewed yielded non-significant results in evaluating the empirical relationship between elements of positive self-concept and workforce outcomes. These included samples from the Dominican Republic (moderately rigorous study), China (moderately rigorous study), United Kingdom (high-rigor), Great Britain (moderately rigorous), Germany (high-rigor), the U.S. (one of high-rigor and one moderately rigorous). Four studies produced some significant (reported in sections above) and some non-significant findings for these relationships. Surprisingly, few studies looked at subgroup differences and non-linear associations. Non-significant findings may reflect a positive association across most of the distribution but a negative association at very high levels, such that individuals with very high levels of self-concept or self-esteem do not do better in the labor market.

Positive self-concept is associated with a facet under the Big Five Factor of Emotional Stability. Utilizing our method of breaking up the Big Five constructs (see Appendices B and E), positive self-concept received one-sixth of the positive associations between Emotional Stability and workforce outcomes from the literature review. Therefore, after taking this literature into account, positive self-concept remained among the most important skills across all outcomes and specifically for job performance and income outcomes.

## COMMUNICATION

**Definition:** Communication skills include effective expression, transmission, understanding, and interpretation of knowledge and ideas. The literature focuses on four modes of communication that are important in the workforce: verbal, written, non-verbal, and listening. Specifically, a skillful verbal communicator speaks effectively, expresses ideas, uses language appropriate to the listener, understands and demonstrates workplace speech norms, and may also be called upon to persuade, negotiate, facilitate a group discussion, conduct interviews, and make oral reports. A skillful writer can write concisely and clearly in multiple formats for diverse audiences, both externally and internally to an enterprise, report information accurately, edit according to standards, and receive edits from others with grace. Understanding non-verbal cues in the workplace is essential as well, as are strong active listening skills and attentiveness.

A strong communicator should be able to communicate effectively with people of different ages and backgrounds.

Strong communication skills are needed for higher-level skills like teamwork and are certainly deployed in demonstrating good social skills.

**Observable workplace behaviors:** Speaking: speaks with clarity, and appropriate volume and speed so as to be understood by a variety of audiences. Writing: conveys ideas with appropriate brevity and in a logical sequence so that another person can follow. Listening: is able to repeat and/or accurately restate what they have heard, provides conversation partner with appropriate non-verbal cues (such as head nods and eye contact if culturally appropriate), and asks questions when appropriate.

***Employment.*** The literature review did not uncover any empirical studies supporting a relationship between communication and gaining employment. One study, investigating the link between communication and formality of employment in Guatemala found no relationship (Ibarraran et al., 2012).

However, communication skills are frequently seen in employer surveys. Employers indicated the importance of communication for employment in 19 different surveys, in an impressive 21 countries, covering almost all regions of the world: Asia, Eastern Europe, the Middle East, North Africa, North America, Latin America, Sub-Saharan Africa, and Western Europe and both formal and informal sectors (Anderson, 2014; Aring, 2012; Bodewig & Badiani-Magnusson, 2014; Burnett & Jayaram, 2012b; Carnevale, 2013; Casner-Lotto & Barrington, 2006; Cunningham & Villasenor, 2014; Di Gropello, 2010; Herrera-Sossa et al., 2015; Industrial Psychology Consultants Ltd., 2011; Liang & Chen, 2014; Maes et al., 1997; Martin, Villeneuve-Smith, Marshall, & McKenzie, 2008; Mourshed et al., 2012; National Association of Colleges and Employers, 2013; National Center on the Educational Quality of the Workforce, ; Pina et al., 2012). Employers tend to emphasize general communication, as well as verbal and written forms. Verbal communication includes elements such as conversational skills, listening skills, speech clarity, and following instructions. Communication was specifically identified as important for

entry-level workers or youth in seven surveys, one in Zimbabwe (Industrial Psychology Consultants Ltd., 2013) and six in the U.S. or U.K. (Aring, 2012; Casner-Lotto & Barrington, 2006; Maes et al., 1997; Margolis, 2011; Martin et al., 2008; National Association of Colleges and Employers, 2013; U.S. Department of Labor, n.d.).

Seven consensus projects also identified communication as a key skill. In Europe, 35 experts identified communication as the number one skill required in the workforce and recommended its inclusion in academic curricula (Education Audiovisual & Culture Executive Agency, 2011). The OECD (2001b) defined the ability to use language, symbols, and text interactively as one of their core skills, and the Learning Metrics Task Force (2013) also identified communication as a key skill for youth, with outcomes broadly defined. In addition, the International Labor Organization identified communication as a core employability skill important throughout the employment cycle, from recruitment to job retention (Brewer, 2013) and include it in a skills framework (International Labour Organization, 2008). A consensus project among 27 European member states includes communication in their resulting framework of key employability skills (Gordon et al., 2009), as does a project conducted by the U.S. Department of Education, Office of Career, Technical, and Adult Education (Perkins Collaborative Resource Network).

Communication is a recurrent theme in other types of literature as well. A literature review conducted by the U.S. National Research Council includes communication as a key element of their resulting framework (Pellegrino & Hilton, 2012), as does the Forum for Youth Investment for its Ready by 21 framework (Forum for Youth Investment, 2015). In the developing world, communication is highlighted in one international policy piece (World Bank, 2013) that describes communication as a soft skill in high demand. Additionally, a survey of youth and employers in the Arab world demonstrated the importance of communication in that region (International Finance Corporation World Bank & Islamic Development Bank, 2011). In the informal sectors of the developing world, communication was also found in literature reviews to be an important skill for employment from Kenya to Cambodia, and many countries in between (Balwanz, 2012; Burnett & Jayaram, 2012b).

Concentrating on other literature in North America and Europe, communication appears in four skill frameworks (Blades et al., 2012; Pennsylvania Academic and Career/Technical Training Alliance, 2011; Perkins & Mincemoyer, ; SRI International, 2005) as well as three United States-based policy pieces (Partnership for 21st Century Skills, 2010; U.S. Department of Labor Office of Job Corps, 2013a, 2013b).

***Performance and promotion.*** No empirical evidence was found supporting the relationship between communication and workforce performance and promotion among youth. However, a meta-analysis of 29 studies from Europe, the Middle East, Africa, Asia, and the United States found that interacting and presenting were associated with non-age-specific managerial performance (Bartram, 2005).

Six unique employer surveys identified at least one form of communication as important for performance and promotion (Burrus et al., 2013; Davis, Hansmeyer, Minic, Prakash, & Rangan, 2013; di Gropello et al., 2011; Playfoot & Hall, 2008; Riordan & Rosas, 2003; Robles, 2012). The Effective

Education for Employment study surveyed over 1,700 employers, training providers, and employees across countries in Africa, Asia, the Middle East, and South America. In India, for example, non-verbal skills such as recognizing non-verbal cues and body language were identified as important (Playfoot & Hall, 2008). A separate survey in Indonesia identified communication as important in medium- and large-scale firms (di Gropello et al., 2011). Employer survey respondents identified general communication more often than a specific type of communication. This tendency towards generality could be a methodological phenomenon, either of surveys not asking about specific types of communication in close-ended questions, or of employers supplying general responses to open-ended items.

Through an iterative process of consultations with experts and stakeholders, the Equipped for the Future consensus project identified writing skills and active listening skills as key skills necessary for adults to be effective parents, citizens, and workers (Stein, 2000).

Other evidence supporting the importance of communication comes from surveys of stakeholders other than employers. A study of students, professors, and experts in India identified communication as the most important skill for a variety of outcomes, one of which was workforce success (Wats & Wats, 2009). The 2012 IBM Global Student Study surveyed students throughout the world and found that communication was important for success in the workforce as well (Marshall & Kinser, 2012). Three literature reviews, one focusing on youth, one on informal sector employment, and one on OECD countries also found support for a positive relationship between communication skills and performance and promotion (Jiyane & Zawada, 2013; OECD, 2001a; Soland et al., 2013).

***Income and wages.*** Two empirical studies investigated the relationship between communication and income and wages: both took place in the U.K. and utilized the 1997 or 2001 Skills Survey (Dickerson & Green, 2004; Green, 1999). Green (1999) specifically found that among women, verbal communication predicted pay premiums (among the 1997 sample). Using the United States' Department of Labor's O*NET database, Burrus et al.(2013) found a positive correlation between communication skills and income .

***Entrepreneurial success.*** One empirical study examined the relationship between communication and entrepreneurial success. Specifically, this study focused on expressiveness and found that companies founded by expressive entrepreneurs in China had higher levels of employment growth, sales or profits growth, and resource acquisition (Baron & Tang, 2009).

Employer surveys are not relevant in the field of entrepreneurship as entrepreneurs, by definition, are their own employers. The literature review did identify, however, a relevant survey of young entrepreneurs in the West Bank. In this survey, the young entrepreneurs emphasized the importance of communications skills for entrepreneurial success (Youth Entrepreneurship Development, 2011).

In addition, a literature review found that communication was positively related to the success of small business owners (Rauch & Frese, 2000). No consensus projects focused specifically on entrepreneurial

outcomes, so they are not applicable to this discussion. A framework of key skills for entrepreneurs developed by the Network for Teaching Entrepreneurship includes "communication and collaboration" as a major category of skills (Network for Teaching Entrepreneurship, 2014).

***Endorsement from the field.*** Communication was strongly endorsed as an important workforce skill in our expert consultations. In fact, with ten endorsements, it received more recommendations by our group of experts than any of the other skills. Specifically, experts mentioned the importance of listening skills, presentation skills, and the ability to match communication styles to audiences from different backgrounds. One expert in particular indicated that communication was the most important skill to employers.

Experts recognized communication as a skill with a large gap—meaning that it is important in the workforce *and* it is not well-developed among youth. Fortunately, experts viewed communication as a malleable skill that can easily be taught to youth.

Twelve additional frameworks collected in this review included communication as a component, including the "Critical Skills Required of the Canadian Workforce" (Bloom & Kitagawa, 1999), a framework of skills important for Japanese business (Yoshida et al., 2013), the Work Ready Now! Workforce Readiness program of the Education Development Center (Education Development Center, n.d.), frameworks produced by the Joint Center for Political and Economic Studies (Conrad, 1999) and the Forum for Youth Investment (Wilson-Ahlstrom et al., 2014), and the New Zealand Spotlight Competence Framework (Finegold & Notabartolo, 2010).

In addition, the importance of communication skills was brought up in focus groups with employers in Mozambique, across sectors. In Mozambique, small and informal employers look for the ability to listen, talk, and negotiate when hiring new employees. Employees are evaluated on their ability to communicate with and listen to clients and colleagues once hired. In focus groups, youth in Mozambique also stated that knowing how to speak in public is a critical skill for success at work.

### STRENGTH OF EVIDENCE FOR *"COMMUNICATION"*

Despite relatively weak empirical evidence, communication had the second highest amount of positive findings across all outcomes and populations (adult and youth combined). Its relationship with income and entrepreneurial success is not well-established, however. Employers frequently cited communication as the most important skill for applicants to possess. This strong support for communication holds true across regions of the world, survey methodologies, sector formality, and when employers are asked specifically about entry-level employees or youth. Experts also emphasized the importance of communication.

Two studies had some non-significant findings for communication and workforce outcomes (Green, 1999; Ibarraran et al., 2012). No studies found a negative relationship between communication skills and workforce outcomes.

## HARDWORKING AND DEPENDABLE

The skill of being hardworking and dependable is variously described in the literature as "work ethic," "attention to detail," "diligence," "detail-oriented," "perseverant," "consistent," "reliable," "disciplined," and "precision or accuracy."

**Definition:** the ability to "perform tasks with thoroughness and effort from start to finish where one can be counted on to follow through on commitments and responsibilities" (Lippman, Moore et al., 2013). To see a full list of the terms included in our hardworking and dependable category, please see Appendix C.

In order to be hardworking and dependable, one must also possess other skills including integrity/ethics, self-motivation, and self-control.

**Observable workplace behaviors:** Consistently shows up on time, consistently meets employer's expectations, asks for more work or to help in other areas to advance goals of the employer, goes above and beyond expectations, perseveres to accomplish tasks despite obstacles or set-backs, develops new processes to aid efficiency, consistently adheres to quality standards of employer, pays attention to details, and completes work on time.

***Employment.*** Three empirical studies found a connection between hard work and dependability and employment outcomes. Two of these studies are a product of the World Bank STEP Skills Survey. These studies found significant relationships between grit and employment outcomes including labor force participation in Armenia and Georgia (Herrera-Sossa et al., 2015; Valerio et al., 2015). The samples are of adults and youth combined. Three studies did not have significant results in examining the association between this skill and employment outcomes; no negative associations were found to employment (Groh, McKenzie, & Vishwanath, 2014; Herrera-Sossa et al., 2015; Ibarraran et al., 2012). Dependability and being hard working is subsumed within the Big Five Factor of Conscientiousness which has been evaluated frequently in its connection to workforce outcomes. While the overall factor of Conscientiousness is well researched and found to be predictive of workforce outcomes (Borghans, Duckworth, Heckman, & ter Weel, 2008; Bowles, Gintis, & Osborne, 2001; J. Hogan & Ones, 1997; B. W. Roberts, Kuncel, Shiner, Caspi, & Goldbert, 2007), research is still underway on the extent to which components attributed to being hardworking and dependable are specifically related to each outcome (Judge et al., 2013). This is further discussed below in the "Strength of Evidence" section below.

Hard work and dependability were cited as top skills primarily by employer surveys (Anderson, 2014; Aring, 2012; Burnett & Jayaram, 2012b; Casner-Lotto & Barrington, 2006; Cunningham & Villasenor, 2014; Mourshed et al., 2012; National Association of Colleges and Employers, 2013; Savitz-Romer et al., 2014). Because these eight surveys gathered the skills which employers look for in a candidate, it can be surmised that being hardworking and dependable would help someone to get a job. Elements of this skill cited by employers included "diligence," being "detail-oriented," and having a "strong work ethic." "Persistence and attention" were found to be important in a worldwide consensus project focused on

universal learning (Learning Metrics Task Force, 2013) and in a U.S. consensus project (Partnership for 21st Century Skills, 2007). Two rigorous U.S. literature reviews (Forum for Youth Investment, 2015; Pellegrino & Hilton, 2012) and two non-rigorous, literature reviews include "work ethic" and "perseverance" in their results frameworks: one has a worldwide focus (Smith et al., 2014), the other is from Kenya (Balwanz, 2012) . A recent OECD review resulting in a framework, also includes perseverance (OECD, 2015a). An additional conceptual framework spanning the U.K., U.S., Canada, and Australia includes dependability (Blades et al., 2012). Youth in Algeria, Egypt, Iraq, Jordan, Morocco, Oman, Saudi Arabia, Palestinian Territories, and Yemen said "work ethic" was one of the most important skills needed to get a job (International Finance Corporation World Bank & Islamic Development Bank, 2011).

***Performance and promotion***. Hard work and dependability are related to performance and promotion on the job according to one empirical source, four employer surveys, and two literature reviews. In their longitudinal study, Andersson and Bergman (2011) found an empirical relationship between an individual's task persistence at age 13 and their occupational status by middle adulthood. While this skill is malleable across the life span, these findings indicate the power of persistence to determine one's career performance. Four employer surveys support the importance of hard work and dependability on the job (Briones, ; Phani, 2007; Playfoot & Hall, 2008; Robles, 2012). The literature reviews found multiple elements of this skill (consistent, dependable, perseverant, and work ethic) to each be linked to performance, as measured by supervisor ratings (Bowles et al., 2001; Cappelli, 1995). No studies had negative or non-significant results in examining the relationship between this skill and performance or promotion outcomes.

***Income and wages.*** Seven empirical studies cite hard work and dependability as a skill that predicts higher earnings. Two of these studies are longitudinal and found a significant positive relationship between work ethic or task persistence among individuals as teenage students and their earnings in adulthood in Sweden and the U.S. (Andersson & Bergman, 2011; O'Connell & Sheikh, 2007). Two additional U.S. studies found a positive, significant relationship between effort and work ethic and earnings or wages when each was measured during adulthood (Goldsmith, Veum, & Darity, 2000; Zhang & Arvey, 2009). The three other studies, all from the World Bank, found a significant association between grit or having a dependable personality and earnings in Jordan, Peru, and Lao People's Democratic Republic (Del Carpio, Ikeda, & Zini, 2013; Diaz, Arias, & Tudela, 2012; Groh et al., 2014). One rigorous U.S. literature review found positive, significant relationships between perseverance and industriousness and earnings (Bowles et al., 2001). In contrast, a Peruvian empirical study found a negative relationship between the grit subcomponent of "consistency of interest" and wages, and found no relationship between the grit subcomponent, "persistence of effort" and wages (Lavado, Velarde, & Yamada, 2013). There were 15 other instances of non-significant results for this skill and outcome (Arias, 2011; Del Carpio et al., 2013; Diaz et al., 2012; Groh et al., 2014; Ibarraran et al., 2012; Kuhn & Weinberger, 2005; Lleras, 2008; O'Connell & Sheikh, 2007; Valerio et al., 2015)

***Entrepreneurial success.*** Markman and Baron (2003) cite perseverance as a key skill for entrepreneurial success in their literature review. However, more research has been conducted to investigate the relationship between the Big Five factors and entrepreneurial success. Support from this body of literature is described in the "strength of evidence" section below.

***Endorsement from the field.*** Experts consulted during interviews and focus groups over the course of this project nominated "perseverance" and "reliability" as some of the most important skills for success in the workforce. Each of these was nominated on three separate occasions. Elements of hard work and dependability are also included as key components of additional frameworks found in our review including the "Critical Skills Required of the Canadian Workforce" (Bloom et al., 1999). Please see Appendix A for a full list of frameworks reviewed.

In a focus group in Mozambique, young people said persistence was an important skill for getting a job, namely because it is hard to find jobs and it is important to be patient. Among employers in Mozambique, human resources managers at large firms said they look for someone who is dependable when recruiting, meaning the person is able to do what the company needs, including traveling or working long hours when needed. Employers at small and informal enterprises said they look for people who have persistence when hiring.

### STRENGTH OF EVIDENCE FOR *"HARD WORK AND DEPENDABILITY"*

Based on the support it enjoys in the literature, across regions and sectors, and its importance across all four outcome groups, hard work and dependability appears to be a critical skill for success in the workforce.

Across all outcome groups, a little over half of the literature supporting hard work and dependability is rigorous; these rigorous studies are a mixture of employer surveys (5), empirical literature (2), consensus projects (2) and literature reviews (4). Literature supporting hard work and dependability span a range of countries including the U.S. (15), India (3), Saudi Arabia (2), the U.K. (3) Australia, Algeria, Armenia, Bangladesh, Brazil, Canada, Egypt, Georgia, Germany, Iraq, Jordan, Kenya, Lao P.D.R., Mexico, Morocco, Oman, the Palestinian Territories , Peru, the Philippines, Solomon Islands, Turkey, the United Arab Emirates, and Yemen. The employers surveyed come primarily from medium- and large-size enterprises; although one study presents results from a small economy (Solomon Islands) (Cunningham & Villasenor, 2014) and another study focuses on skills for employment in the informal sector in Kenya (Balwanz, 2012).

No sources reported any negative associations between hard work and dependability and workforce outcomes. Eleven studies reported non-significant associations among some measures of this skill and workforce outcomes. Some studies reported mixed findings among subgroups: a study in Jordan found a "dependable personality" to have a statistically significant, positive effect on employment 10 months later for females, but was non-significant for males. The same study found that a dependable personality significantly predicted earnings for males, but not for females (Groh et al., 2014). Similarly, work ethic was a significant predictor of income growth for females, but was not significant for males in

a U.K. study (O'Connell & Sheikh, 2007). Another study found that effort significantly predicted wages across races and genders, but was not significant for certain industries, including agriculture and mining, wholesale and retail trade, and public administration (Goldsmith et al., 2000).

In evaluating the strength of evidence connecting hard work and dependability to workforce outcomes, it is important to take into account literature utilizing the Big Five factors, where hard work and dependability are included within the factor of Conscientiousness. As discussed earlier, Conscientiousness has been frequently cited as a strong predictor of workforce outcomes.

According to our methodology, being hardworking and dependable aligned with two facets of Conscientiousness and therefore received two out of six or one-third of the findings of a positive relationship to workforce outcomes (see Appendix B). This process elevated hardworking and dependable to be among the top ten supported skills across all outcomes and within each outcome category. Before breaking up the Big Five factors, hardworking and dependable was the eleventh most-supported skill across outcomes; after accounting for the Conscientiousness findings, this skill was elevated to the fourth most supported. In an examination of the facets of Conscientiousness, Judge et al (2013) found that *dutifulness* in particular was strongly correlated with work performance outcomes, further strengthening the evidence that being hardworking and dependable is very important for workforce outcomes.

## SELF-MOTIVATION

Self-motivation includes concepts from the literature such as “need for achievement,” “achievement motivation,” “desire to learn,” and “self-direction.”

**Definition:** This term describes the desire to do a task and achieve results, pursuing it with enthusiasm, determination, and autonomy. Self-motivation has an emotional component, including the desire to achieve something, but it also involves taking demonstrable action toward that accomplishment. It also has a cognitive component, that is, a focus on an intention and engagement in a task. The related skills of self-control, self-efficacy, and a learning or growth mindset, influence the development of self-motivation. If a youth believes that he or she is capable of achieving his or her goals or tasks, he or she becomes more motivated to accomplish them (Dweck, 2006).

**Observable workplace behaviors:** Employee asks to learn new things from employer or co-workers, seeks leadership opportunities or more responsibility, works actively toward promotion even when there is not a financial incentive, seeks to improve, and continues to work towards a goal even when others are not monitoring their progress.

***Employment***. Only one empirical study investigated the relationship between self-motivation and employment. Studying immigrants in Quebec, Canada researchers did not find a significant relationship between motivation and getting a first job after immigrating (Renaud & Cayn, 2006). Seven employer

surveys nominated this skill as important for employability (Anderson, 2014; Aring, 2012; Burnett & Jayaram, 2012b; Cunningham & Villasenor, 2014; Industrial Psychology Consultants Ltd., 2011; Maes et al., 1997; Savitz-Romer et al., 2014). Four of these surveys are of high quality and each surveyed employers from across small, medium, and large enterprises.[7] In the U.S., employers said "motivation," "self-direction," "lifelong learning," and being "self-starting and self-motivated" were important skills they look for in potential candidates. In India, employers nominated a candidates' "quest for knowledge," "willingness to learn," and "self-motivation" as important. In Burkina Faso, a "drive to work" and "motivation" are qualities employers look for in employees.

Four consensus projects include elements of self-motivation as key skills for employability. The Learning Metrics Task Force includes self-direction as a key skill in post-primary school under its "learning approaches and cognition" category (Learning Metrics Task Force, 2013). The U.S. Partnership for 21st Century Skills includes "self-direction," and a U.K. framework from the Young Foundation includes "self-motivation" (McNeil et al., 2012). A worldwide literature review resulting in a framework includes achievement motivation as a key skill for employability (Guerra et al., 2014). Two U.S.-based literature reviews (Forum for Youth Investment, 2015; Partnership for 21st Century Skills, 2010) and a youth survey conducted in Algeria, Egypt, Iraq, Jordan, Morocco, Oman, Saudi Arabia, Palestinian Territories, and Yemen (International Finance Corporation World Bank & Islamic Development Bank, 2011) nominate purposefulness and drive, and lifelong learning and motivation, respectively, as important for employability. A conceptual framework by the National Children's Bureau in London includes motivation under "personal skills" (Blades et al., 2012).

***Performance and promotion***. Two empirical studies found a positive, significant relationship between elements of self-motivation and performance or promotion outcomes (B. W. Roberts et al., 2003; Schoon, 2008). Samples from the U.K. and New Zealand in these studies found correlations between achievement (operationalized as "works hard, enjoys demanding projects and working long hours"), positive emotionality-agency (a combination of achievement and social potency), and school motivation and performance indicators such as "resource power" (the ability to hire, fire, supervise people) and occupational status. Results from Roberts et al.(2003) were non-significant for achievement motivation and its relationship with performance indicators such as "work autonomy" (setting one's own hours, budget) in their New Zealand study.

Self-motivation was one of the skills that "ideal employees" possess in three employer surveys (Phani, 2007; Playfoot & Hall, 2008; Robles, 2012). In the U.S., an employee's "desire to learn" and "self-motivation" were important qualities on the job. In India, a "yearning to learn," in Brazil someone who is "results oriented," and in South Africa, a "desire to progress and succeed" were nominated as skills which are important for excelling one's position.

The survey conducted in the U.S. does not include information on the employers surveyed in terms of sector size; however, the employers from India, Brazil, and South Africa came from a mix of small,

[7] The results from India in Burnett & Jayaram (2012) did not include information on the employers surveyed.

medium, and large enterprises. A U.S.-based literature review and one U.S.-based consensus project, Equipped for the Future, ("taking responsibility for learning") support the importance of this skill for performance on the job (Cappelli, 1995; Stein, 2000).

***Income and wages.*** One longitudinal study in the U.S. found a positive, significant relationship between motivation at age 21-29 and wages 10 years later among a sample of males (Dunifon & Duncan, 1998). Results from Roberts et al. (2003) were non-significant for achievement motivation and its relationship to wages in their New Zealand study.

***Entrepreneurial success***. One U.S.-based meta-analysis that included studies linking achievement motivation to entrepreneurship performance found a positive, significant relationship between the two (Collins, Hanges, & Locke, 2004). Two literature reviews cited achievement motivation as predictive of success as an entrepreneur (Markman & Baron, 2003; Rauch & Frese, 2000). One survey of entrepreneurs in the West Bank found "passion" to be an important quality for entrepreneurial success (Youth Entrepreneurship Development, 2011). Additionally, the Network for Teaching Entrepreneurship (2014) includes self-direction as a key component of their framework for an "entrepreneurial mindset."

***Endorsement from the field***. Motivation and being a "good learner" were both nominated twice by experts in the field as important for workforce success in two separate convenings for this project. Employers participating in a panel in Boston, MA also nominated "personal drive" as something they look for in candidates. Four other frameworks collected in this review include self-motivation as a key skill, including the Work Read Now! Work Readiness program of the Education Development Center (Education Development Center, n.d.), a framework produced by the Joint Center for Political and Economic Studies (Conrad, 1999), and the "Critical Skills Required of the Canadian Workforce" (Bloom & Kitagawa, 1999).

One employer in a focus group in Zimbabwe said self-motivation was key for assessing the merit of an employee's promotion.

### STRENGTH OF EVIDENCE FOR *"SELF-MOTIVATION"*

The evidence supporting self-motivation as an important skill for workforce success is less rigorous than for others in this review. Specifically, two rigorous and moderately rigorous empirical studies, and one non-rigorous study, along with five rigorous employer surveys and six non-rigorous employer surveys, two high-quality consensus projects and two less rigorous projects, one less rigorous meta-analysis, one rigorous literature review, and four non-rigorous literature reviews support self-motivation. Additional less rigorous literature include a youth survey, interviews with youth, a framework, a policy piece, and a popular press piece.

However self-motivation is considered to be part of the Big Five factor of Conscientiousness, and strong evidence for that factor strengthens the notion that being "achievement orientated" is an important skill for the workplace. In identifying self-motivation as a facet within Conscientiousness, it received one-sixth of the positive findings attributed to this construct. After taking these findings into account, self-

motivation appeared among the top ten supported skills across all outcomes and within three of the outcome groups (performance, entrepreneurial success, and wages and income). Before factoring in the findings from Conscientiousness, self-motivation was among the top skills for performance and entrepreneurial success only. Providing additional support is the work of Judge et al. (2013) which found that the "achievement" facet of Conscientiousness was the most highly correlated with job performance among all its facets, indicating that the empirical findings connecting Conscientiousness to workforce success may be mostly driven by the specific skill of self-motivation.

While there is less current empirical evidence linking self-motivation to workforce success, this skill's relationship to others that are important for workforce success strengthens its importance. This skill's role in workforce success may deserve more targeted investigative research.

## TEAMWORK

In our review of the literature, terms including "collaborative," "cooperative," and "ability to work in a team" were consolidated under the skill of teamwork. Teamwork is a complex skill in that it requires strength in a number of other skills. There are multiple frameworks used to define teamwork in the field of organizational behavior.

**Definition:** For the purposes of this paper, the definition of teamwork focuses on the individual involved in the team and the social, emotional, and cognitive aspects required to be competent in teamwork.

1) Socially, youth must be able to communicate clearly with others while being able to anticipate the needs of others and working collaboratively with diverse groups to accomplish goals. This requires strong social skills and communication as foundational skills.

2) Emotionally, youth need to exhibit self-control and to possess positive self-concept as well as empathy in order to be skilled at teamwork.

3) Cognitively, teamwork requires the ability to plan and recognize potential obstacles to success as well as adaptability to adjust to changes. It also requires higher-order thinking skills in order to be effective at both one's own roles and responsibilities while understanding how they fit with those of others on the team, contributing constructively to the overall task.

**Observable behaviors** of teamwork in the workplace include: effective collaboration with other co-workers requiring the division or co-ownership of responsibilities, interacting and communicating in a constructive way with others during this process, contributing his/her share of the work in a way that aids and does not impede the work of others, and accomplishing the goal at hand by sharing the workload appropriately with others.

***Employment.*** There were no empirical studies that investigated the skill of teamwork and its relationship to employment. However teamwork was deemed very important to employers. Eleven

employer surveys reviewed nominated teamwork as one of the most important skills desired by employers in their candidates (Aring, 2012; Burnett & Jayaram, 2012b; Casner-Lotto & Barrington, 2006; Cunningham & Villasenor, 2014; Di Gropello, 2010; di Gropello et al., 2011; Maes et al., 1997; Martin et al., 2008; Mourshed et al., 2012; National Association of Colleges and Employers, 2013; Pina et al., 2012). These studies spanned several countries including, the U.S. (3), the U.K., India (4), Vietnam, Cambodia, Senegal, Kenya, Philippines, Indonesia, Thailand, Brazil, Germany, Mexico, Morocco, Egypt, and Brazil; one study drew conclusions from studies across several countries worldwide (Cunningham & Villasenor, 2014), and another from several countries in South Asia (Burnett & Jayaram, 2012b). They also spanned all sizes of enterprise: one focused on medium and large, two on medium and small, three on all sizes, and one on the informal sector; four did not include enterprise size information.

Five consensus projects support teamwork as one of the most important skills for getting a job. Three are globally focused: the Definition and Selection of Key Skills (DeSeCo, 2001), the ILO Core Skills for Employability (Brewer, 2013), and Learning Metrics Task Force (Learning Metrics Task Force, 2013). DeSeCo's teamwork skill is articulated as "interacting in heterogeneous groups." Another is a European project which consulted 35 experts (Education Audiovisual & Culture Executive Agency, 2011) and a fourth is a project commissioned by the Office of Career, Technical, and Adult Education, U.S. Department of Education (Perkins Collaborative Resource Network).

A survey of youth in the Middle East found teamwork as an important skill for getting a job (International Finance Corporation World Bank & Islamic Development Bank, 2011). Three literature reviews from multiple countries in the developing and developed world cited teamwork as being important for employment (Burnett & Jayaram, 2012a; Guerra et al., 2014; Pellegrino & Hilton, 2012). Two evidence-based conceptual frameworks for employability skills based in the U.S. and U.K. included teamwork as a key skill (Blades et al., 2012; Pennsylvania Academic and Career/Technical Training Alliance, 2011). One U.S. policy piece includes teamwork as an important skill for employment (U.S. Department of Labor Office of Job Corps, 2013b).

***Performance and promotion.*** Six employer surveys reported that teamwork was an important skill for performance and promotion on the job. One of these studies reported findings from employers of various countries: employers in South Africa and India both reported teamwork as a top skill. When results across all countries were aggregated, teamwork emerged as a top skill worldwide (Playfoot & Hall, 2008). One employer study supporting teamwork is from employers in Indonesia, two are from employers in the U.S. and one is an analysis of the O*NET, a large job analysis network operated by the U.S. Department of Labor (Burrus et al., 2013; di Gropello et al., 2011; Riordan & Rosas, 2003). Another is informed by employers worldwide (Davis et al., 2013). Three evidence-based consensus projects focusing on performance include teamwork in their broad frameworks (Stein, 2000; The Secretary's Commission on Achieving Necessary Skills, 1991; UK Commission for Employment and Skills, 2009). A literature reviews also cites teamwork as important for labor market success and job performance (Soland et al., 2013). Two surveys of teachers and students, one worldwide and the other based in India,

also cited “teamwork skills” or “being collaborative” as important for success in the workforce (Marshall & Kinser, 2012; Wats & Wats, 2009).

***Income and wages.*** No studies in this literature review investigated the relationship between teamwork and one’s income.

***Entrepreneurial success.*** No studies in this literature review investigated the relationship between teamwork abilities and entrepreneurial success. The Network for Teaching Entrepreneurship includes “collaboration” as a key skill for success as an entrepreneur (Network for Teaching Entrepreneurship, 2014).

***Endorsement from the field.*** Teamwork was endorsed on eight separate occasions throughout the interviews, focus groups, and convenings related to this project. Teamwork was acknowledged by some of these groups to be a cross-cutting skill, or one which required many other sub-skills in order to become competent. One group also acknowledged that this skill is one that is often seen in their programming as having “spillover effects” into other spheres of youths’ lives, such as family and community relations.

Ten frameworks identified in this review include teamwork, such as the “Critical Skills Required of the Canadian Workforce” (Bloom & Kitagawa, 1999), the Work Ready Now! Workforce Readiness Program of the Education Development Center (Education Development Center, n.d.), frameworks produced by the National Children’s Bureau (CBI, 2010), the Joint Center for Political and Economic Studies (Conrad, 1999), and the Forum for Youth Investment (Wilson-Ahlstrom et al., 2014).

Youth in a focus group in Mozambique said that “knowing how to work in teams” was one of the most important skills for getting a job. They also said teamwork was important for work in both the informal and industrial sectors and that across different technical functions it is important to be able to work in teams and understand the roles of others (so as to fill in for one another). Employers of large- and medium-sized enterprises in Mozambique said they evaluated employee’s teamwork skills when assessing job performance. An employer of a medium-sized enterprise reiterated that teamwork was one of the most important skills for employees.

### STRENGTH OF EVIDENCE FOR *“TEAMWORK”*

The evidence that teamwork is an important skill for workforce outcomes is, according to this review, moderately strong. Although the term is frequently supported by employer surveys and incorporated into frameworks by large consensus projects that convene experts, there is a dearth of empirical evidence evaluating this specific skill and its relationship to workforce success. It is important to note that there is a body of evidence supporting the importance of “collaborative problem solving” and teamwork in relationship to other outcomes like educational achievement.

In this review, teamwork was supported by eight rigorous employer surveys and three rigorous consensus projects. Across all types of literature, teamwork was supported by 35 separate surveys,

frameworks, or other type of literature. No study reviewed found teamwork to have a negative impact on workforce outcomes.

Teamwork is aligned with a facet of the Big Five factor, Agreeableness. This factor has the least amount of evidence of predicting workforce success among the Big Five, in this review. However, some studies reviewed did find a predictive, positive relationship between Agreeableness and workforce success. Across all workforce outcomes, Agreeableness was cited by four empirical studies, four meta-analyses, and three literature reviews as predicting positive workforce outcomes. The majority of this literature had designs that were not at the highest level of rigor, however. Based on our breakout methodology of the Big Five, (see Appendix E), teamwork received one-sixth of the number of positive findings linking Agreeableness to workforce outcomes. After accounting for these findings, teamwork remained among the top skills across all outcomes and as an important skill for performance and employment outcomes.

## POSITIVE ATTITUDE

Positive attitude refers to an enthusiastic outlook toward work, or an "I can" attitude. The literature reviewed includes terms such as positive thinking and attitude, good attitude, enthusiasm, passion, wanting to be at work, valuing the work and enjoying it, being encouraging, happy, and having humor.

**Definition**: A definition of positive attitude includes an emotional aspect in which a youth is happy, enthusiastic, and even passionately enjoying the work and desires to be at the workplace; a social aspect of encouraging others; and a cognitive aspect of valuing the work with a positive outlook.

**Observable workplace behaviors:** Employee displays energy and enthusiasm about work, happily responds to requests, and expresses the value of the work to others.

***Employment***. Using data from young adults in the United States during the late 1980's and early 1990's in the National Longitudinal Study of Youth (NLSY), Mohanty (2009; 2010) found a positive relationship between positive attitude and optimism, and obtaining employment. Interestingly, having a positive attitude is related to participation in the labor market, whereas optimism is related to being hired. This study also has findings relevant for wages, as described below. A longitudinal study of a sample of American high school graduates from 1972 found that poor attitude and self-esteem in high school was predictive of unemployment status 14 years later (Waddell, 2006). In addition, an empirical study in Tajikistan and Uzbekistan found a positive, significant relationship between "workplace attitude" and employment (Nikoloski & Ajwad, 2014). Employers around the world indicated the importance of positive attitude, enthusiasm, and positive thinking (Burnett & Jayaram, 2012b; Carnevale, 2013; CBI, 2010; Cunningham & Villasenor, 2014; Martin et al., 2008; National Center on the Educational Quality of the Workforce). Countries surveyed included Argentina, Brazil, Chile, Egypt, India, Kenya, the United Kingdom, and the United States.

No consensus projects in this review nominated positive attitude as a key skill for employment.

In addition to empirical support and support from employer surveys, four literature reviews supported the relationship between positive attitudes and employment. Specifically, a literature review focusing on the informal sector in Kenya found that having a positive attitude was important to training firms (Balwanz, 2012), and a literature review conducted by the International Rescue Committee found that optimism, particularly among youth, is important for livelihood success in crisis and conflict areas (Smith et al., 2014). Others include the Ready by 21 framework (Forum for Youth Investment, 2015) and a recent soft skills framework for OECD countries (OECD, 2015a). A framework covering the U.S., U.K., Australia, and Canada also includes positive attitude (Blades et al., 2012).

***Performance and promotion.*** Almost all of the evidence supporting the relationship between positive attitude and job performance relies on employer surveys. Across the surveyed developing countries, employers described their "ideal employees" as being positive and enthusiastic. Employers in both Brazil and China were looking for employees with humor. In South Africa, ideal employees possess passion and enthusiasm and an "I want to be here" rather than "I have to be here'" attitude. In China, employers are looking for employees who take pleasure in their work and possess a good attitude (Playfoot & Hall, 2008). In addition, two employer surveys in the United States found that employers want employees to have positive attitudes (Phani, 2007; Robles, 2012). A literature review on soft skills among OECD countries also includes positive attitude (OECD, 2001a).

***Income and wages***. Two empirical studies tested the link between having a positive attitude and income. In the study using the NLSY in the United States discussed above, Mohanty (2009; 2012) found that positive attitudes and optimism are related to wages, though optimism may be more important for females and whites than males and non-whites. A separate study using NLSY found mixed relationships between attitude in high school and earnings 14 years after high school (Waddell, 2006).

No other forms of evidence linked positive attitudes and income.

***Entrepreneurial success.*** The literature review did not identify any studies examining positive attitudes among entrepreneurs.

***Endorsement from the field.*** Throughout the course of the expert consultations, having a positive attitude was suggested five times as an important skill. In addition, positive attitude was a component in four frameworks of skills, including frameworks produced by the Joint Center for Political and Economic Studies (Conrad, 1999) and the "Critical Skill Required of the Canadian Workforce" (Bloom & Kitagawa, 1999).

In a focus group with employers in Zimbabwe, one employer of a large corporation indicated that they consider employee attitude first, before technical qualifications when hiring. In Mozambique, medium-sized employers indicate that they look for staff who love their work when hiring. Youth in Mozambique also indicated that one of the best ways to find a job is to be interested in the job, and passion and interest are critical for success on the job, including earning promotions.

### STRENGTH OF EVIDENCE FOR "*POSITIVE ATTITUDE*"

The relationship between positive attitude and employment has been established through rigorous empirical literature in the United States. Most of the empirical research, however, has been conducted with the same dataset (NLSY), or with an older survey of American high school students, both of which are now rather outdated. In addition, the cross-sectional analyses found a relationship between positive attitude and outcomes, whereas the results with longitudinal analyses were more mixed. An opportunity exists to update this research with more recent and diverse data, such as the study conducted in Central Asia.

In addition to the empirical studies, employers and experts around the world agree that having a positive attitude is important for employment, and this skill is frequently included in frameworks of skills. Some evidence also demonstrates that having a positive attitude is related to higher income or wages and performance on the job or promotion, though the evidence is somewhat weaker for these outcomes. One meta-analysis had findings for employment that failed to reach significance among a U.S. sample (Kanfer et al., 2001).

Positive attitude aligns with facets of Extraversion and Emotional Stability within the Big Five, although is not a term typically used by this body of literature (see Appendix B). Across all workforce outcomes, Extraversion was cited by 14 empirical studies, five meta-analyses, and one literature review as predicting workforce outcomes. Positive attitude aligns with two of the facets of Extraversion, and therefore received one-third of the positive findings from the literature linking this construct to workforce outcomes. Positive attitude also aligns with a facet of Emotional Stability. Therefore positive attitude received one-sixth of the positive findings from the Emotional Stability literature. Additionally, the enthusiasm facet of Extraversion, has been shown to be differentially important for contextual job performance and organizational citizenship behavior (Judge et al., 2013)

After taking these findings into consideration, positive attitude was elevated to be one of the most important skills for performance and promotion and entrepreneurial success, whereas previously this skill was not among the most important for these outcomes.

## RESPONSIBILITY

The competency of responsibility is comprised of a few key concepts drawn from various types of literature. One set of concepts comes from the language of employers who describe responsibility as "taking ownership" and "being accountable." The term used most frequently by employers to describe this ability is responsible. Empirical literature uses other terms and concepts including locus of control or attribution. Locus of control refers to the extent to which one believes they can control events in their life; an internal locus of control indicates that one feels they have some ability to control what happens to them, while someone with an external locus of control believes that external factors are more

powerful in influencing the events in their life. Likewise, the perceived influence of ability, effort, luck, or external support on the events in one's life are types of *attribution*.

**Definition**: Responsibility is defined as 1) one's ability to understand their role and reliably accomplish tasks associated with this role (ability to "take responsibility" for tasks or job) and 2) one's belief that their choices and actions can influence the events in their life and lead to positive outcomes.

**Observable workplace behaviors**: Similar to being dependable, being responsible is reflected in the workplace when one does what is required by their job and acknowledges times when they fail to meet these expectations without blaming others or external events.

***Employment.*** Four empirical studies based in Germany, the United Kingdom, and the United States assessed the relationship between locus of control and obtaining a job. The German study found a positive, significant relationship between internal locus of control and finding and job and, conversely a negative, significant relationship between external locus of control and finding a job (Caliendo, Cobb-Clark, & Uhlendorff, 2010). One U.K. study found a negative, significant relationship between internal locus of control and prolonged unemployment lasting more than 12 months among women who had been unemployed, but no relationship among men. Additionally, this study found no relationship between internal locus of control and being unemployed for men or women (Feinstein, 2000). Additional studies in the U.K. failed to find a relationship between locus of control and unemployment or labor market attachment (Blanden, Gregg, & Macmillan, 2007; Macmillan, 2013). A U.S.-based meta-analysis found no relationship between locus of control and duration of unemployment (Kanfer et al., 2001).

Three employer surveys found that responsibility is a key characteristic that employers look for in their employees. These surveys were conducted in diverse settings, ranging from small economies (St. Kitt, Togo, and Solomon Islands), to Chile, Argentina, and Brazil, to the United States (Bassi, 2012; Cunningham & Villasenor, 2014; Savitz-Romer et al., 2014).

Responsibility, specifically "taking responsibility for professional growth," is a component of the Employability Skills Framework developed out of the Support States Employability Standards in Career and Technical Education project of the U.S. Department of Education (Perkins Collaborative Resource Network). Responsibility is also included in the Partnership for 21st Century Skills' comprehensive set of skills developed through a consensus project (Partnership for 21st Century Skills, 2014). A literature review by Bowles, Gintis, and Osborne (2001) cites that internal locus of control is associated with one's ability to "handle disequilibria well" in labor markets (an ability to position themselves well for work and earnings). Two additional non-rigorous literature reviews support the link between responsibility or locus of control and employment outcomes (Pellegrino & Hilton, 2012; Smith et al., 2014).

***Performance and promotion.*** An empirical study in Germany found a positive, significant relationship between self-reported internal attribution (belief in internal ability to change events) in 10$^{th}$ grade and occupational prestige (rating of skill level) at age 30 (Rauber, 2007). Another empirical study in Australia

found a positive relationship between internal locus of control and occupational attainment for men but not women (Cobb-Clark & Tan, 2011). An employer survey of small and medium enterprises and corporations that asked employers what they wanted in "an ideal employee" gathered the following responses in South Africa: "someone who takes ownership of a role;" in Brazil, "responsible;" in United Arab Emirates, "someone who takes ownership of the business;" in India, "sense of responsibility for oneself and others" and "ownership of a role" (Playfoot & Hall, 2008). The Secretary's Commission on Achieving Necessary Skills (1991) includes responsibility as a personal quality under their foundational competencies category.

***Income and wages.*** Findings from twelve empirical studies found significant, positive relationships between internal locus of control and income or negative, significant relationships between external locus of control and income (Blanden et al., 2007; Caliendo et al., 2010; Feinstein, 2000; Flossmann, Piatek, & Wichert, 2007; Fortin, 2008; Heineck & Anger, 2010; Nyhus & Pons, 2012; Obschonka et al., 2012; Osborne-Groves, 2005; Rauber, 2007; Semykina & Linz, 2007). These findings are from samples in Russia, Germany, the Netherlands, Great Britain and the U.K., and the U.S.; no individuals living in developing countries are included. All study designs are either highly or moderately rigorous. Findings were somewhat consistent across genders in studies including subgroup analyses; in one study external locus of control, while significantly predictive of wages for men and women, was more impactful on the wages of men. In another study, internal locus of control significant predicted wages for women only.

***Entrepreneurial success***. One literature review reported positive, significant relationships between internal locus of control and "the success of a business owner"(Rauch & Frese, 2000).

***Endorsement from the field.*** Responsibility, as defined above, was not nominated by experts who contributed to this project when asked open-ended questions about the skills that matter most for workforce success.

### STRENGTH OF EVIDENCE FOR *"RESPONSIBILITY"*

There has been more research done thus far to link responsibility to income and earnings than other workforce outcomes. The empirical literature tends to be of high rigor, with five rigorous studies, eight moderately rigorous studies, and one less rigorous study. Two of the three employer surveys are also of high quality. Two rigorous literature reviews and two non-rigorous literature reviews support responsibility. Someone who is responsible and takes ownership over their work is desired by employers. However there is less overall support for this skill than for others in our review.

Several major consensus projects and frameworks include responsibility: SCANS (1991), Department of Education Office of Career, Technical, and Adult Education (Perkins Collaborative Resource Network), National Academy of Sciences (Pellegrino & Hilton, 2012), the Framework for 21st Century Skills (Partnership for 21st Century Skills, 2014), and the Development Assets Profile (Briones, 2010).

Non-significant findings for locus of control or attribution and workforce outcomes were reported by seven empirical studies or meta-analyses across the developed world, including Australia, the U.S., U.K.,

and Germany. One empirical study from Germany (of moderate quality) found a negative, significant relationship between internal locus of control and wages.

In a literature review by the International Rescue Committee, authors Smith et al. (2014. p. 7) make a resonant point about responsibility, specifically locus of control, and its applicability to youth in crisis situations:

> *Given […] the fact that locus of control is measured as an important noncognitive factor in the work of Heckman and others, it is recommended as one of the skills to be measured in youth and livelihoods programming. However, it is worth considering how locus of control could be affected by conflict affected and crisis contexts. For example, a youth who is experiencing environmental uncertainty and/or political upheaval may have low locus of control due to a realistic assessment of their situation.*

Therefore context is a particularly important factor in determining the importance of locus of control or attribution at the individual level for helping youth to obtain and maintain work. Other aspects of responsibility, such as taking ownership of tasks or roles and being accountable may still be important especially for young workers to demonstrate on the job; however more empirical research is needed to confirm this hypothesis as the most support for these aspects of responsibility comes currently from employer surveys.

Large, medium, small, and informal employers in Mozambique said in a focus group that responsibility was a skill they looked for in new recruits. A small-enterprise employer also reported that they assessed employee's responsibility in evaluating their performance once on the job.

## INTEGRITY/ETHICS

The literature uses terms such as "honesty," "ethics," "sincerity," "values," "social responsibility," and "social and community values" to describe the skill termed in this paper as integrity/ethics.

**Definition:** Integrity/ethics refers to one's ability to abide by ethical standards and socially accepted norms of privacy, honesty, and respect in the workplace and to keep to one's principles even when it is difficult to do so (Lippman, Moore et al., 2013). Many employers in a variety of settings depend on their employees to demonstrate sound ethical principles in their treatment of resources, co-workers, and customers in order to run a successful workplace.

Integrity/ethics is a basic quality expected by employers in the workplace and is also foundational to higher-order thinking skills, being hard working and dependable, social interactions, and teamwork.

**Observable workplace behaviors**: Employee refrains from illegal or immoral activities and reports these activities when witnessed, employee tells the truth and adheres to standards of conduct, confidentiality and workplace policies.

***Employment***. None of the empirical studies reviewed by this project investigated the relationship between integrity/ethics and employment outcomes. Employers in six employer surveys nominated integrity/ethics (including honesty, sincerity, ethics, and social responsibility) as an important skill they seek in employees (Anderson, 2014; Aring, 2012; Burnett & Jayaram, 2012b; Carnevale, 2013; Cunningham & Villasenor, 2014; Savitz-Romer et al., 2014). These surveys come from small economies including Togo and St. Kitts and also from Vietnam, India(2), Bangladesh, and the U.S.(2). One of these studies analyzed the U.S. O*NET database to determine the incidence of skills desired in U.S. jobs; integrity/ethics was one of the most frequently sought-after skills by U.S. employers (Carnevale, 2013). Except for a survey conducted in Vietnam, Bangladesh, and India that did not provide information on sector or size of employers (Burnett & Jayaram, 2012b), the remaining studies were representative across industry and size of enterprise in their survey. Interestingly, a seventh employer survey asked employers in Zimbabwe, "would you hire a prospective employee coming from a company known for corruption and bad publicity even if they were qualified?" and 69 percent of respondents said "no" (Industrial Psychology Consultants Ltd., 2011). Three consensus projects included elements of integrity/ethics in their resulting recommendations; the Learning Metrics Task force includes both "civic values" and "social and community values" as important for all children to learn (Learning Metrics Task Force, 2013). In addition, European (Education Audiovisual & Culture Executive Agency, 2011) and U.S.-based (Perkins Collaborative Resource Network) projects also include "professional ethics" and "integrity" and in their final recommendations, respectively. Two worldwide literature reviews include integrity and ethics as important skills for employment; these papers also includes frameworks of skills of which integrity/ethics is a part (Guerra et al., 2014; International Labour Organization, 2008). Two policy pieces on necessary skills for employment from the U.S. highlight ethics as important (Partnership for 21st Century Skills, 2010; U.S. Department of Labor Office of Job Corps, 2013a).

***Performance and promotion.*** One empirical study conducted in New Zealand found a positive, significant relationship between "traditionalism," which was operationalized as "desires a conservative social environment, endorses high moral standards" and one indicator of performance, namely, "work stimulation," described as using skills at work, learning new things at work, and having others come to you for advice at work (B. W. Roberts et al., 2003). Other indicators of performance were examined as well, but their relationship to traditionalism did not reach significance. Four employer surveys found integrity/ethics to be among the most important skills for employees on the job (Briones, 2010; IBM, 2010; Playfoot & Hall, 2008; Robles, 2012). Two surveys were either representative across multiple sectors (IBM, 2010) or were interested in skills that were "valuable for a job in any sector" (Playfoot & Hall, 2008). Playfoot & Hall included small- and medium-sized enterprises and "corporations," but no other survey gave information on employer size. The surveys were conducted in Brazil, China, India, South Africa, the United Arab Emirates, the U.S., and the Philippines. The IBM survey was conducted in 60 countries.

The Secretary's Commission on Necessary Skills (1991) in the U.S. was the only consensus project which included integrity/ethics as a personal quality under "foundation for skills." Two literature reviews cited

ethics and integrity as connected to labor market success or job performance; these reviews did not describe their regional focus (J. Hogan & Ones, 1997; R. Hogan, Hogan, & Roberts, 1996).

***Income and wages.*** The Roberts et al. (2003) study in New Zealand cited in the previous section found a significant, positive relationship between traditionalism and financial security. No other studies investigated the relationship between integrity and earnings.

***Entrepreneurial success.*** None of the reviewed literature supported integrity/ethics as an important skill for entrepreneurship outcomes.

***Endorsement from the field.*** Ethics was nominated on one occasion during expert interviews and focus groups conducted for this project.

Employers in focus groups in Zimbabwe, Mozambique, and Boston, MA said integrity/ethics was important for various settings and workforce outcomes. Employers in Zimbabwe said honesty and trustworthiness were important employee characteristics. In Mozambique, employers nominated confidentiality among their top five most important skills for employees to possess. Employers in medium-sized enterprises nominated integrity/ethics; small and informal employers nominated honesty.

Youth in Mozambique echoed these sentiments. Three young people (not the majority) voted for honesty as one of the five most important skills for employment. Youth mentioned honesty as a skill which helps in both finding a job, while "respect for company confidentiality" was important for being successful at work. Youth discussed that honesty is an important skill for all jobs regardless of technical functions, and mentioned it as a top skill for formal employment, in particular.

This literature review uncovered several additional frameworks for which methodological information was not readily available. It is important to note these as further endorsement from the field. For example, integrity/ethics appeared as a element in four additional frameworks including, "The Critical Skills Required of the Canadian Workforce" (Bloom & Kitagawa, 1999). For a full list of frameworks reviewed, please see Appendix A.

### STRENGTH OF EVIDENCE FOR *"INTEGRITY/ETHICS"*

Eleven of the 21 studies investigating integrity/ethics were of the highest level of rigor (two of these fall under the category of "other literature." See Chart 1 for rigor standards). This skill was supported by at least one of each type of literature, but was most heavily supported by employer surveys. Focus groups in Zimbabwe and Mozambique among employers and youth revealed the importance of this skill for getting and performing in a job in those contexts.

Integrity/ethics is considered to be aligned with facets under the Big Five factors of Conscientiousness and Agreeableness, and therefore this literature base should be taken into account, according to our methodology (see Appendices B and E). After taking the findings from the Big Five literature into account, integrity/ethics was elevated to be one of the most important skills across all outcome groups,

and also rose to be among the top skills for performance and promotion, and income and wage outcomes. Integrity/ethics remained on the list of top skills for employment after accounting for findings from the Big Five; its importance for this outcome is supported primarily by employer surveys.

**RECOMMENDED FROM THE FIELD**

The following skills did not receive the same level of support in the literature as the others above, but were highly recommended by experts, implementers, employers, and/or youth during focus groups and interviews conducted for this project.

## LEADERSHIP

Leadership refers to the vision and initiative, as well as organizational and management skills needed to facilitate a group of people to accomplish goals. It is operationalized in different ways according to the different strands of literature, which use terms including leadership, people management, initiative to lead, visionary leadership, management skills, ambition, enterprising, managing peers, teams, and processes, and social potency. In terms of measurement, in employer surveys, respondents frequently simply indicate "leadership" as important, whereas in empirical studies, leadership is more often measured as experience in leadership positions.

**Definition:** Successful leadership, then, is multifaceted and requires a constellation of foundational skills. It requires emotional components including self-confidence, self-efficacy, perseverance, and ambition. Leadership is also social, and thus requires communication and social skills needed to guide others' development and manage others. Cognitively, leadership requires logical thought processes, management skills, and the ability to see the big picture, conceptualized in this paper as higher-order thinking skills (Casner-Lotto & Barrington, 2006; Boytazis (1982) as cited in Kantrowitz, 2005). Decision-making is also an essential requirement of good leadership as are integrity and ethics.

An employee who possesses leadership is able to guide the work of others or set the example for others.

**Observable workplace behaviors:** Setting goals, communication with clients, developing ideas and products, coordinating work among workers, obtaining and sustaining financial resources, quality control, supervising and setting clear expectations for employees, facilitating tasks, developing talent.

***Employment.*** Very little empirical work has been conducted examining the relationship between leadership and employment. One study in the Dominican Republic was unable to find a relationship between leadership and either employment or formality of employment among poor youth (Ibarraran et al., 2012).

The majority of the support for leadership came from employer surveys (Aring, 2012; Bodewig & Badiani-Magnusson, 2014; Burnett & Jayaram, 2012b; Chegg, 2013; Cunningham & Villasenor, 2014; Di Gropello, 2010; Industrial Psychology Consultants Ltd., 2013; Liang & Chen, 2014; Maes et al., 1997; Mourshed et al., 2012; National Association of Colleges and Employers, 2013). Employers in most regions of the world, including the United States and Europe, South America, North Africa, Zimbabwe, the Middle East, and India, indicated the importance of leadership. These studies are recent, all published after 2010, with one exception. Specifically, in Zimbabwe, leadership was the number one skill lacking in the current workforce (Industrial Psychology Consultants Ltd., 2013).

Three consensus projects, two from the U.S. and one focused on European countries, include leadership among their most important skills for employment (Education Audiovisual & Culture Executive Agency, 2011; Partnership for 21st Century Skills, 2007; Perkins & Mincemoyer). A rigorous review conducted by the U.S. National Research Council includes leadership as a top skill for employability (Pellegrino & Hilton, 2012).

In addition to employers, youth in a selection of Arab countries also indicated that leadership is an important skill for obtaining employment (International Finance Corporation World Bank & Islamic Development Bank, 2011). A policy piece and a conceptual framework of skills necessary for gaining employment also supported the positive relationship between leadership and employment (Pennsylvania Academic and Career/Technical Training Alliance, 2011; World Bank, 2013).

***Performance and promotion.*** The relationship between leadership and performance and promotion was established in a number of different types of studies. Empirically, a meta-analysis of 29 studies found that leadership personality and ability predicted managerial performance when measured together, but ability alone did not have a relationship with managerial performance (Bartram, 2005). An additional meta-analysis of 43 studies found a positive relationship between ambition (which included leadership) and the “getting along” and “getting ahead” elements of performance at work (J. Hogan & Holland, 2003).

Employer surveys also supported the importance of leadership for performance on the job and promotion. Employers across a variety of countries: Brazil, China, India, South Africa, Sri Lanka, the United Arab Emirates, and the United States, listed leadership as an important skill for performance and promotion (Dundar, Millot, Savchenko, Aturupane, & Piyasiri, 2014; Playfoot & Hall, 2008; Riordan & Rosas, 2003).

The SCANS consensus project in the United States includes leadership as one of its six interpersonal sub-skills that “span the chasm between school and the workplace” (The Secretary's Commission on Achieving Necessary Skills, 1991, p. viii). The Equipped For the Future project similarly includes the ability to guide others (Stein, 2000).

Finally, this relationship was also supported by two literature reviews and a survey of students and teachers in India (OECD, 2001a; Soland et al., 2013; Wats & Wats, 2009).

***Income and wages.*** The relationship between leadership and income/wages enjoys some empirical support (Kuhn & Weinberger, 2005; Ramos et al., 2013; Zhang & Arvey, 2009). One study based in the United States, in particular, found that high school leadership experience exercised in the form of being a sports team captain and club president predicted higher levels of income approximately a decade after high school graduation for males across three decades. Being only a sports team captain had a weaker relationship with future earnings (Kuhn & Weinberger, 2005). A study of poor youth in the Dominican Republic did not find a relationship between leadership and earnings (Ibarraran et al., 2012), nor did a British longitudinal study (O'Connell & Sheikh, 2007). A positive relationship between leadership and income was also demonstrated in a literature review (Bowles et al., 2001).

***Entrepreneurial success.*** A quantitative literature review focused on small-scale enterprises without reference to a specific age of entrepreneurs found that two elements of leadership—delegating and visionary leadership—were positively related to the success of business owners (Rauch & Frese, 2000).

***Endorsement from the field***. Leadership was suggested one time throughout the course of expert consultations.

Leadership was a skill in eight other frameworks identified by this project including the Work Ready Now! Workforce Readiness program of the Education Development Center (Education Development Center, n.d.), the "Critical Skills Required of the Canadian Workforce" (Bloom & Kitagawa, 1999), and a framework produced by the Forum for Youth Investment. (Wilson-Ahlstrom et al., 2014).

In focus groups with employers in Zimbabwe, leadership was nominated as a main skill in demand by an non-governmental organization working on value chains. This skill was also nominated by youth in Mozambique when they were asked about skills that are critical for success at work, and they noted that the ability to delegate functions was important.

### STRENGTH OF EVIDENCE FOR *"LEADERSHIP"*

The support base for leadership is unevenly distributed across types of evidence. The bulk of the evidence supporting leadership comes from employer surveys. It is also a popular construct among frameworks of skills and from implementers and researchers consulted who are working in the field. In contrast, leadership enjoys mixed empirical support from just a few studies conducted mainly in the United States, whereas the only empirical study reviewed that was conducted in a developing country found no connection between leadership and workforce outcomes. More empirical work is needed in this area.

## PERSUASIVENESS

While persuasiveness did not receive a lot of support from the literature review, experts nominated it and thus the research team reviews the evidence for it here, briefly. The term "persuasiveness" was chosen by the research team to describe "negotiation," "influencing skills," and "assertiveness."

Persuasive is therefore conceptualized as a slightly different, though related, skill from communication: it includes special forms of communication meant to persuade others, negotiate conflicting priorities, or to assert or advocate. On three occasions, experts interviewed for this project nominated "assertiveness" as an important skill for workforce success. Some literature reviewed supported this skill as important for employment, performance, and entrepreneurial success; however the amount of support was less than many other skills in our taxonomy. Three empirical studies of moderate quality found a positive, significant relationship between social potency (being forceful and decisive, fond of influencing others) and job performance (B. W. Roberts et al., 2003) as well as earnings (Zhang & Arvey, 2009) and "self-promotion" and successful entrepreneurship (Baron & Tang, 2009). Five high-quality employer surveys from Indonesia, India, Cambodia, Kenya, Senegal, Brazil, Egypt, and the Philippines nominated elements of persuasiveness as important characteristics employers seek in candidates (Aring, 2012; Burnett & Jayaram, 2012b; Di Gropello, 2010; di Gropello et al., 2011). Two U.S. consensus projects, SCANS and Equipped for the Future, include elements of persuasiveness. SCANS includes "negotiates" under its essential interpersonal skills and Equipped for the Future includes "advocate and influence" (Stein, 2000; The Secretary's Commission on Achieving Necessary Skills, 1991). One non-rigorous literature review cites negotiation as important for workforce success (Blades et al., 2012) and a conceptual framework from the U.K., Canada, Australia, and U.S. includes persuasiveness (Blades et al., 2012; Burnett & Jayaram, 2012b).

Persuasiveness also is aligned with a facet of the Big Five factor, Extraversion. Extraversion is not linked to workforce outcomes as frequently as Conscientiousness or Emotional stability in the literature; however there were findings in the review that demonstrated its ability to predict workforce success. In accounting for these findings, persuasive was assigned one-sixth of the positive findings for Extraversion. However even accounting for these findings, persuasiveness was not among the most supported skills from the literature review.

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