WORKFORCE CONNECTIONS

KEY "SOFT SKILLS" THAT FOSTER YOUTH WORKFORCE SUCCESS: TOWARD A CONSENSUS ACROSS FIELDS

JUNE 2015
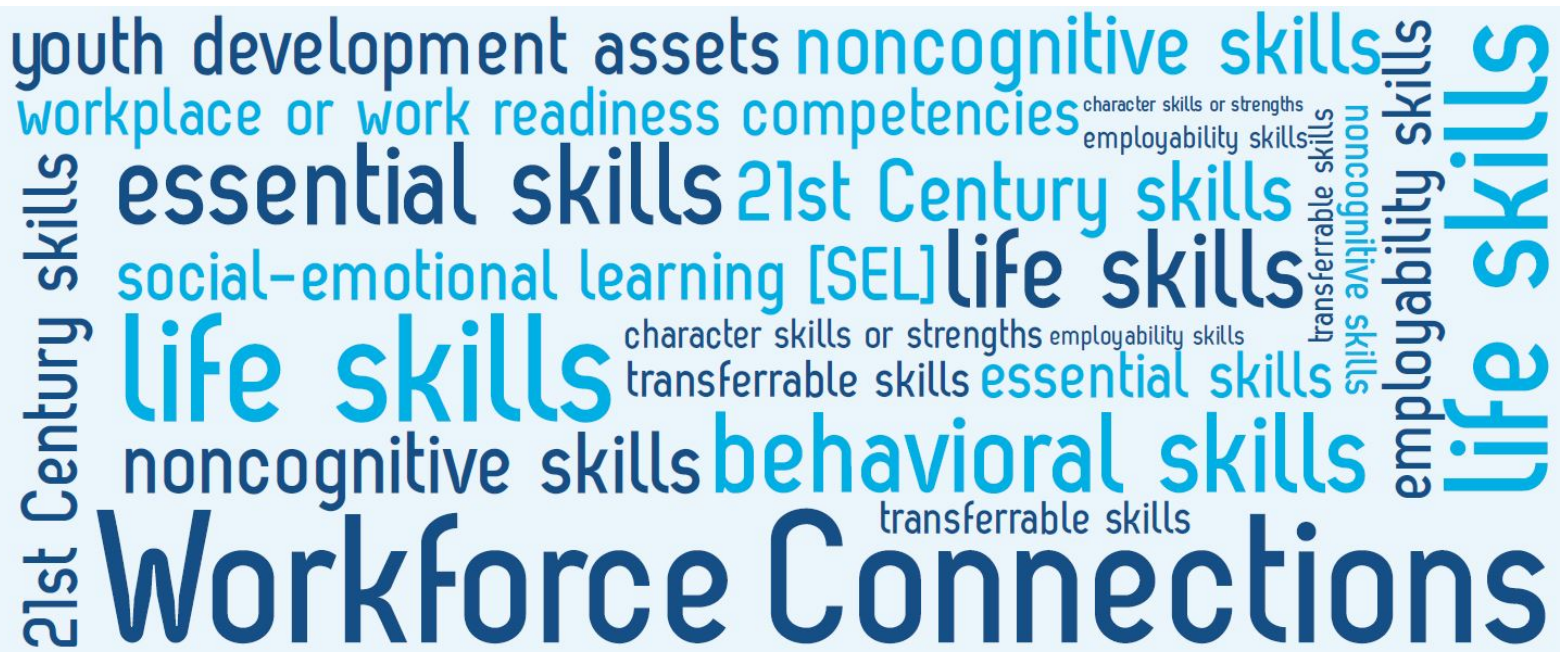
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Laura H. Lippman, Renee Ryberg, Rachel Carney, Kristin A. Moore
Child Trends

EXECUTIVE SUMMARY

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"Soft skills" are centrally important for human capital development and workforce success. A growing evidence base shows that these qualities rival academic or technical skills in their ability to predict employment and earnings, among other outcomes (Kautz, Heckman, Diris, ter Weel, & Borghans, 2014). As the workplace has modernized around the world, the demand for such skills has increased over the past 20 years (Balcar, 2014; Carnevale, 2013; Eger & Grossmann, 2004; International Labour Organization, 2008). Nevertheless, a soft skills "gap" is noted by many employers around the world, who report that job candidates lack the soft skills needed to fill available positions (Manpower Group, 2013).

Unfortunately, there is not a clear consensus about *which* soft skills are most critical for workforce success. Developing a common understanding is hampered by a lack of comparability in the constructs, definitions, and measures used to assess youth and monitor progress. This confusion obstructs knowledge development and guidance for future investments in youth workforce development programs. This white paper helps bring clarity to the field by recommending a research-based set of key soft skills that increase the chance that youth ages 15–29 will be successful in the workforce.

> **Soft skills** refer to a broad set of skills, 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.

These recommendations emerge from a multi-faceted study that includes an extensive review of research as well as broad stakeholder input. The authors of this report reviewed more than 380 resources from around the world, including rigorous empirical studies, employer studies, and findings of international consensus projects. These resources examined the relationship between soft skills and key workforce outcomes, including employment, performance on the job, wages, and entrepreneurial success. In addition to the literature review, stakeholders, including researchers, youth workforce program implementers, employers, and youth themselves provided input on the importance of these skills based on their unique experiences.

After all of the evidence was gathered, a set of criteria were used to arrive at the list of recommended skills. The criteria used include: the quantity, breadth and quality of research support, the contextual diversity of the skill (including formal and informal employment across sectors and regions), whether the skill is malleable (i.e., changeable or teachable among youth ages 15–29), and the developmental appropriateness of each skill.

Based on the evidence and these considerations, (as shown in the following diagram) a set of key skills was identified that are supported by a strong research base as being important elements of all aspects of workforce success, are applicable across sectors and diverse world regions, are developmentally optimal, and are likely to be improved with youth workforce development programs.

KEY SOFT SKILLS FOR YOUTH WORKFORCE SUCCESS

There are five critical skills most likely to increase odds of success across all outcomes and which employers expect employees to have: social skills; communication; and higher-order thinking skills (including problem solving, critical thinking, and decision-making); supported by the intrapersonal skills of self-control and positive self-concept.
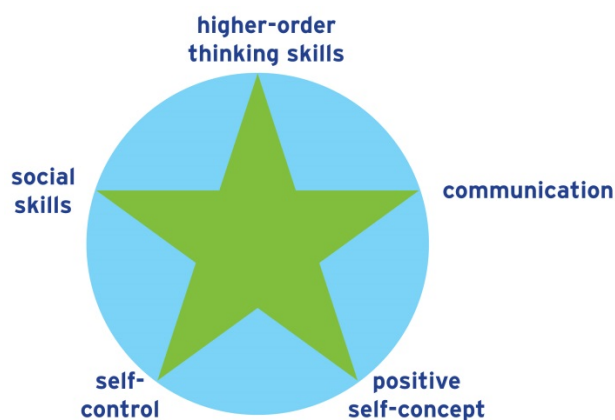
Social skills help people get along well with others. This ability includes respecting others, using context-appropriate behavior, and resolving conflict. Social skills are universally important. They predict all four types of workforce outcomes (employment, performance, income/wages, and entrepreneurial success), are sought by employers, and are seen as critically important by experts in the field. Social skills were supported across types of evidence, in all regions of the world, and within both formal and informal employment. Indeed, it is hard to imagine a position in which social skills would not be an asset.

Communication skills refer to the specific types of communication used in the workplace, and include oral, written, non-verbal, and listening skills. Strong general communication skills contribute to the development of other soft skills, like social skills. However, the communication skills referred to in this paper are a distinct set, important for workplace success across sectors. There is evidence that communication skills are related to three of the workforce outcomes studied for youth, they are the most frequently sought skill among employers, and they were strongly endorsed by stakeholders in this project. The strong support for communication holds true across regions of the world, for both formal and informal positions, and for entry-level employees.

Higher-order thinking consists of **problem solving, critical thinking, and decision making**. At a basic level, this includes an ability to identify an issue and take in information from multiple sources to evaluate options in order to reach a reasonable conclusion. Higher-order thinking is very much sought by employers and is critical for all four workforce outcomes in all regions of the world. Because these skills are complex to measure in a survey, less empirical research has been conducted on how these skills relate directly to successful employment.

Self-control refers to one's ability to delay gratification, control impulses, direct and focus attention, manage emotions, and regulate behaviors. Self-control is an intrapersonal skill, foundational to many others: it enables successful decision-making, resolution of conflict, and coherent communication. Self-control is highly supported by a rigorous literature as related to all four workforce outcomes, especially in literature specific to youth ages 15–29.

A positive self-concept includes self-confidence, self-efficacy, self-awareness and beliefs, as well as self-esteem and a sense of well-being and pride. Positive self-concept is another intrapersonal skill that is important for workforce success. It is related to success across all four workforce outcomes and is especially supported in youth-specific literature.

Hard work and dependability, responsibility, and *self-motivation* are also highly valued by employers and supported by a strong base of research evidence, placing them in the top ten supported skills. However, the evidence, specifically for youth, is not quite as strong across all criteria as that for the skills recommended above. The field is building more evidence that these can be improved through interventions among youth and young adults, and it is expected that, in time, they may emerge with as much support as those above enjoy. *Teamwork* involves proficiency in these as well as other skills, so while it appears among the top ten supported skills, the recommendations focus on some of the components of teamwork, rather than on the overarching set of skills that it represents.

Youth who are competent in these soft skills are effective in their job searches and interviews and thus are more likely to be hired. They are more likely to be productive, retained on the job, and promoted, and thus they tend to earn more than those less competent in soft skills. Youth competent in these soft skills contribute to the collective efficacy, productivity, and growth of their employers, and when they start their own businesses, they are more likely to be successful.

This research has broad implications for youth workforce development and training programs, secondary and tertiary education, nonformal education and civic engagement, youth policy, and positive youth development more generally. It supports the inclusion of these skills in workforce programs and provides the terminology and synthesis of research and stakeholder input necessary to make major strides forward in building consensus across these fields on the best bets for investment.

New research is needed to further the field, and over time, augment these results. In particular, there are several priority areas that would contribute to a better understanding of the relationship between soft skills and workforce success. These areas for research include:

1) How soft skills lead to workforce outcomes (understanding the causal mechanisms);
2) How soft skills, independently and together, relate to academic and technical skills, and how they might be integrated into general and technical education;
3) How individual factors such as gender and socioeconomic status, and contextual factors such as industry and job sector, culture, regional differences, and the presence of conflict, all influence the importance of specific soft skills for workforce success;

4) How soft skills can be improved specifically among youth and young adults, and developed across earlier life stages; and

5) How soft skills can be measured using common definitions and scales, and included along with workforce outcomes in longitudinal studies and program evaluations for youth across cultures, genders, and regions of the world, and how might they be augmented with objective measures and Information and Communication Technology (ICT) platforms.

This research agenda will extend current knowledge of the importance of soft skills to effective applications in developing youth for the workforce. While this research agenda is needed, the current evidence base and agreement on priority skills across research disciplines and stakeholders is compelling. This evidence can inform the systems that prepare youth for real, lasting success in the workforce. Youth who develop these key soft skills will be better able to effectively identify, use, and communicate their strengths, relate to others, make decisions to achieve their own goals, as well as contribute to their workplaces and communities.

ACKNOWLEDGEMENTS

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I. INTRODUCTION

MOTIVATION FOR THE STUDY

"Soft skills" are centrally important for human capital development and workforce success. A growing evidence base shows that these skills rival academic or technical skills in their ability to predict employment and earnings, among other outcomes (Kautz et al., 2014). These findings are especially hopeful considering the lack of equitable educational opportunities available to youth in resource-deprived contexts around the world; they suggest that youth who have had less educational opportunities can develop soft skills to augment their employability and success in the workforce. As the workplace has modernized globally, the demand has never been greater for candidates who possess strong competency in soft skills (Balcar, 2014; Carnevale, 2013; Eger & Grossmann, 2004; International Labour Organization, 2008). This is due to myriad factors such as an increased reliance on technology which results in more non-routine tasks and team-oriented environments, as well as an increased need for labor in service industries over agriculture and manufacturing, especially in developing countries (Dicken, 2007). At the same time, many employers around the world report that a lack of soft skills is a contributing factor in talent shortages (Manpower Group, 2013). There is a call for workforce preparation to focus on skills of the future rather than skills that were needed in the past, as the work world is constantly evolving.

> **Soft skills** refer to a broad set of skills, 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.

Unfortunately, there has not been a clear consensus on *which* soft skills are most critical for workforce success. The field is hampered by a lack of comparability in constructs, definitions, and measures used to assess youth and monitor progress, obstructing knowledge development and undermining guidance for future investments in youth workforce development programs. That is, which soft skills increase the chances of employment and productivity during work, and thus indicate where the focus of youth workforce development programs should be? Which skills are relevant globally and across sectors of the economy? Which skills can be improved within the development stage of youth and young adulthood? Funders and developers of youth workforce development programs are in need of this evidence. Identifying consensus in the field on a small number of fundamental skills that are more likely to result in success can focus efforts on rigorous measurement of those skills, promote comparability across countries to build the knowledge base, and prioritize investments on promoting those skills that will achieve the maximum good.

This paper is situated within a broader research agenda to build the evidence base on soft skills. By fielding measures of these skills in surveys and program evaluations in diverse contexts and regions, the evidence of their impact on youth employment outcomes will grow. This paper addresses this agenda by recommending priority soft skills that give youth ages 15–29 the greatest chances of success in the

workforce, based upon currently available evidence. These recommendations emerge from both a careful review of the research and broad stakeholder input, and provide the field with consensus terminology and priority skills for consideration.

By taking a careful and methodical approach, this study adds value to the field in a number of ways. First, it proposes common terms for skills and workforce outcomes, drawing across research disciplines. Additionally, the paper identifies which skills are associated with which outcomes for both youth/entry-level workers and for all workers (with a searchable database by skill or outcome). The study also aligns commonly measured facets of personality traits with the literature on specific workforce skills, and incorporates them into analyses. In addition, the study reviews and quantifies the strength, breadth, and contextual diversity of research on each soft skill. Finally, the study goes beyond existing research by considering developmental appropriateness and evidence that each skill can be improved among youth and young adults before proposing the key skills that are the best bets for investments.

Figure I.1 summarizes where individual soft skills are situated amongst many contributing factors to youth workforce success. This project recognizes the myriad factors that influence youth employment globally, including contextual factors such as economic and political contexts, education, and culture, a sample of which are shown in the figure. This project is specifically focused on soft skills possessed by individuals that contribute to workforce success, while acknowledging the existence of other influential factors, including individual academic and technical skills.

Figure I.1 Contributing Factors to Youth Workforce Outcomes
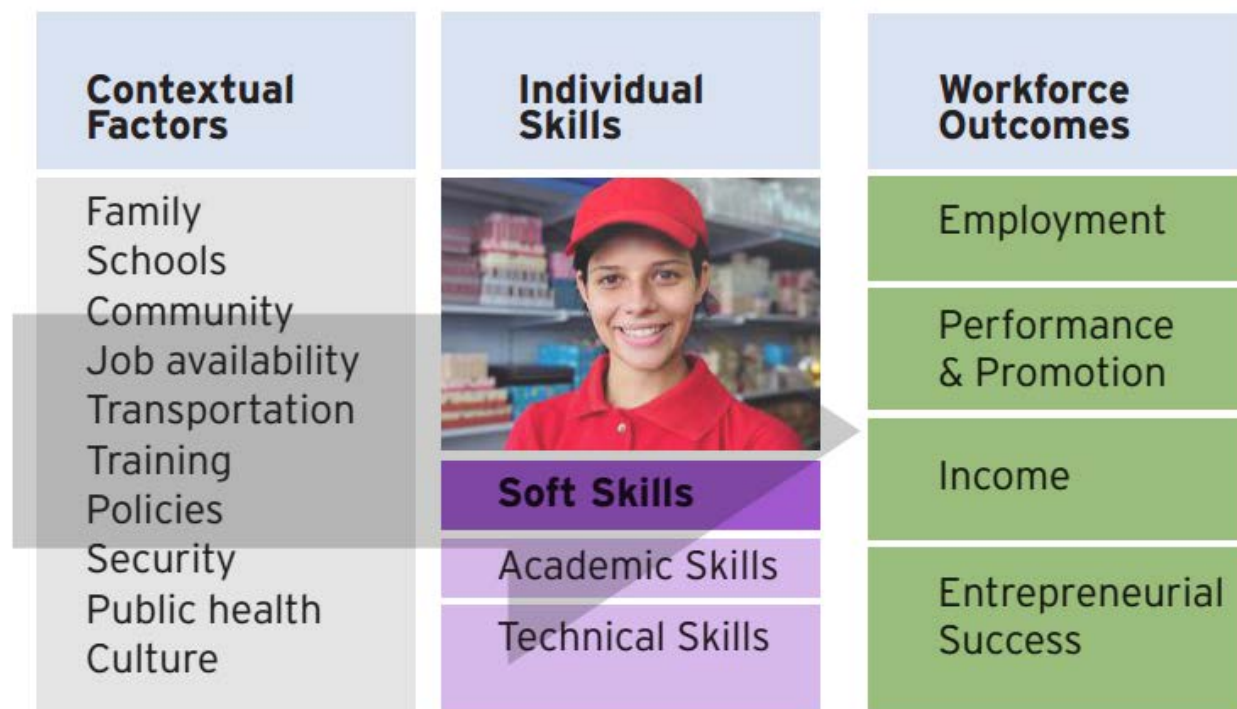
LANDSCAPE OF RESEARCH

This report comes at an opportune time when research on soft skills is exploding globally. The large and varied landscape of research in this field raises challenges for this or any other project attempting to bring coherence to the field, and to move it toward a consensus on the key soft skills that are the best bets for investments in youth development programs. Five major challenges are identified and described below, along with how this project has dealt with them.

Challenge 1: Integrating Terminology and Contributions Across Disciplines

The findings in this report integrate knowledge from the academic disciplines of psychology (including the developmental, educational, occupational, personality, and positive psychology sub-fields), sociology, and economics, as well as the fields of positive youth development and organizational and workforce development. Each field and stakeholder has its own goals and terminology, domestically and internationally. In fact, the increased focus on these skills is reflected in the multitude of terms associated with this field including 21st Century skills, life skills, essential skills, behavioral skills, noncognitive skills, youth development assets, workplace or work readiness competencies, social-emotional learning [SEL], transferrable skills, employability skills, and character skills or strengths. The terms are not interchangeable; they point to different aspects of the universe of these skills, and to different outcomes with which they are associated. As pointed out in the *State of the Field Report: Examining the Evidence in Youth Workforce Development* (Olenik, 2013), the types of skills identified as important for workforce readiness vary considerably. This was confirmed with a review of extant frameworks of workforce development skills conducted for this paper (see Appendix A for all frameworks reviewed). Nevertheless, despite differences in terminology, once terms with similar meaning are grouped together, a substantial consensus emerges around which types of skills are considered most useful. Appendix D provides a mapping of sample terms used in each field and Appendix C groups together skills used in the literature and terms that are proposed for each group.

The contributions of employers and three influential fields are summarized below.

Employer Perspective: While soft skills is the term used and understood by employers, there is a lack of consensus among employers on terminology and definitions for each specific skill, as well as their relative priority. Employers differ in their definitions of commonly named soft skills, such as leadership, so even among this group there is a need for common terms and definitions. While employers report that these skills are actually scarce among prospective employees, current assessments of these capabilities are not comparable across studies or companies, so that estimates of the extent of the problem at the local or country level are hindered. It is clear that employers are less willing or able to offer training on soft skills than technical skills, despite wanting employees who possess these skills. Specific examples of crucial soft skills desired by the business community gathered prior to this review include critical thinking, communication, teamwork, and work ethic (Corporate Voices for Working Families, 2010; Mourshed, Farrell, & Barton, 2012).

From the Field of Psychology: The field of psychology is large and splintered itself. The Big Five model of personality factors is widely used by industrial and organizational psychologists. Based upon factor

analysis of lexicons used to describe people in multiple languages, it is comprised of five factors: openness, conscientiousness, extraversion, agreeableness, and neuroticism/emotional stability. While these factors are not derived from performance on workplace tasks, they are consistently found, especially conscientiousness, to relate to workforce outcomes. However, the evidence for youth is not as robust as that for adults more generally, and thus the implications for training and employment of youth are less clear. The Big Five factors are comprised of sub-elements, or facets, some of which are more stable personality traits and some of which correspond to soft skills that can be improved. Psychologists make a distinction between *traits* and *skills*, where traits are thought to underlie and influence multiple behaviors and attitudes, and are considered relatively stable (although research demonstrates that they can be changed over the life course). Skills, on the other hand, are specific, teachable, and malleable as a result of myriad factors, including direct intervention. In order to relate this extensive body of research using this familiar model to findings from studies using other terms, this paper specifies the facets of the Big Five that can be expressed as skills, and aligns them with similar terms in other research (see discussion later and a full explanation in Appendix B).

In developmental psychology, assets, such as the "developmental assets" identified by the Search Institute (Benson, Scales, & Syvertsen, 2010) and the "Five Cs" of positive youth development: competence, confidence, connection, character, and caring (Pittman, Irby, Tolman, Yohalem, & Ferber, 2011) are considered critical for success in school, work, and life. In the field of positive psychology, terminology has been influenced by a review and categorization of personal qualities that have global relevance for human development referred to as character strengths and virtues (Peterson & Seligman, 2004). These bodies of work overlap and align with the skills of importance for workforce success presented in this paper.

From the Field of Education: Soft skills have been given substantial consideration in relation to how they affect academic behavior and achievement. Social and emotional learning (SEL) is a term widely used to describe social and emotional competence, noncognitive or "non-academic" skills, behaviors, and mindsets. The Collaborative for Academic, Social and Emotional Learning (CASEL) has created from an extensive review of interventions and developmental studies a widely used taxonomy that includes self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (CASEL, 2015). In educational psychology, two specific conceptualizations of academic mindsets have gained traction. Carol Dweck's "Growth Mindset" and Angela Duckworth's "Grit" scales have received significant attention in educational circles and are being used to predict educational achievement and attainment as well as workforce outcomes (Duckworth, Peterson, Matthews, & Kelly, 2007; Dweck, Walton, & Cohen, 2011). Other skills that have been the focus of research in this field include academic self-concept, educational engagement, motivation, expectations, and goal-setting, that propel students to success in school and work (Farrington et al., 2012; Lerman, 2013; Lippman, Atienza, Rivers, & Keith, 2008; Moore, Lippman, & Ryberg, 2015).

From the Field of Economics: The economic term "noncognitive" has been used by Heckman et al., (2000) to distinguish from cognitive skills that are commonly measured by IQ or academic standardized

tests. Kautz, Heckman, Diris, ter Weel, and Borghans (2014) found that noncognitive qualities rival cognitive qualities in predicting both employment and earnings, among other outcomes. These skills are described as "personality traits, goals, character, motivations, and preferences that are valued in the labor market, in school, and in many other domains" (Kautz et al., 2014). Though coined "noncognitive," these skills do, in fact, involve cognition (Borghans, Duckworth, Heckman, & ter Weel, 2008b). From an economic development perspective, the World Bank measures social-emotional as well as cognitive and job-relevant skills in its Skills Towards Employability and Productivity (STEP) Skills Measurement Program, and finds that problem-solving skills, learning skills, communication skills, personal skills, and social skills are important for entering the job market. The Organization for Economic Development (OECD) conducted a thorough review and expert consultation process in the project, Defining and Selecting Key Competencies (DeSeCo). Here, "competencies" are more than knowledge and skills, defined as the ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context. The OECD identified three overarching competencies, including using tools interactively, working in heterogeneous groups, and acting autonomously. The term "competencies" is widely used now to mean a combination of skills, knowledge, and personal attributes that help one apply and manage oneself, as well as behaviors demonstrating effective performance in the workplace (Campion et al., 2011; Eric Soderquist, Papalexandris, Ioannou, & Prastacos, 2010; OECD, 2001; Pellegrino & Hilton, 2012). More recently, the OECD's Education and Social Progress (ESP) project aims to understand the skills, such as perseverance, respect, and optimism, that promote individual well-being, including labor market success among other outcomes (OECD, 2015a).

While there is no shortage of literature, there is a lack of coherence and communication across fields that this review attempts to rectify. The research team acknowledges the difficulty of finding a term that would encompass all of the aspects that are neither academic (i.e., literacy and numeracy) nor technical skills, and that are addressed by all strands of literature, including those disciplines described above. The team's criteria for a term were that it must refer to something that (a) can be cultivated among youth, (b) can be expressed in the form of behaviors, skills, or attitudes that are observable and measurable, and (c) can be understood by employers, youth, program implementers, and researchers alike. The team considered many alternative terms, including those above, and has chosen to continue to use soft skills despite its limitations, simply because it is widely understood that "soft" refers to those skills which are complementary to "hard" academic and technical skills, and which are applicable across positions and fields. **Soft skills** refer to a broad set of skills, competencies, behaviors, attitudes and personal qualities that enable people to effectively navigate their environment, work well with others, perform well, and achieve their goals.

Challenge 2: Economic Contexts and the Changing World of Work
As developing economies move from being dominated by agriculture and manufacturing sectors to service sectors, soft skills gain importance (Carnevale, 2013; Eger & Grossmann, 2004; International Labour Organization, 2008). Employers perceive skills gaps between job candidates and the available positions in specific locations and occupations around the world. These gaps result from skills shortages

and skill mismatches, measured by the unemployment rates of individuals with different levels of education: primary, secondary, and tertiary (for example, see Dobbs et al., 2012; International Labour Organization, 2013). Employers, however, talk about skill gaps in terms of technical skills and soft skills such as those discussed below, regardless of an employee's education level (Aring, 2012). While perceived skill gaps in some contexts are important to note, it is also crucial to keep in mind the myriad factors that influence employment opportunities for qualified job seekers in certain contexts.

The economic literature has shown that labor markets look very different in developing versus developed countries. As described by the ILO (2013, p. 37): "Developing economies have an abundance of labour, a scarcity of capital and a stark duality between the shrinking but still dominant traditional economies and the 'modern' economies (strongly manifested across rural and urban geographies)." In developing economies, regular employment is scarce, and less than 10 percent of youth are employed in positions with a contract lasting at least one year, according to a survey conducted in Cambodia, Liberia, Malawi, and Togo. Irregular employment, including working on short contracts, self-employed work without employees, and working for one's family is much more prevalent in developing countries, with almost 50 percent of youth working in one or more of these capacities (International Labour Organization, 2013). Many workers in developing countries work in microenterprises that frequently employ only one person, and at most 10 (World Bank, 2012).

Despite the clear differences in employment by type of economy, and the well-documented demand for soft skills, few studies have attempted to differentiate which skills are most important in varying economic contexts. Similarly, most of the extant research on soft skills has been conducted in the context of formal employment. This review found only one empirical study (with one finding) and one literature review that recommended soft skills specifically for *youth* in the informal sector (Balwanz, 2012; Ibarraran, Ripani, Taboada, Villa, & Garcia, 2012). Among literature for all ages, no significant empirical findings about soft skills for the informal sector were found; most information currently comes from employer surveys or industry reports. The soft skills recommended in this paper were validated by experts and implementers in the field with a deep expertise in such contexts, however, as discussed further in the methodology.

Acknowledging these economic considerations and the current state of research, the workplace skills recommended in this paper were chosen to be applicable across a number of economic contexts, including both formal and informal employment in different sectors around the world. In addition, the skills are transferable across sectors and across jobs, which is increasingly necessary in changing and emerging economies (International Labour Organization, 2013).

Challenge 3: Variation in Regional Contexts

The focus of many workforce development programs is in developing countries where there is less research currently available on soft skills for workforce success. Most research on soft skills, especially the most rigorous studies, has been conducted in the United States and Europe. In the section below outlining the types of literature reviewed for this paper, the maps indicate the countries where this

research has been conducted. Where available, findings for contexts outside of the United States and Europe are highlighted throughout the text of the report.

It is important to remember that, while the skills in this report were chosen because they have been demonstrated as important across regions and sectors, the importance of skills may differ by specific context. That is, some skills that are rewarded in the labor market in one context may not be in the next, and could even have a negative impact on outcomes (Miyamoto, Huerta, & Kubacka, 2015). These issues are culturally specific and may only affect the usefulness of some skills, but not others. Additionally, the skills that have been recommended in this paper, with evidence supporting their importance across contexts, may *present* themselves differently from region to region. For example, appropriate communication cues and willingness to communicate varies across cultures (McCroskey & Richmond, 1990). Even if common definitions for soft skills are agreed upon, variations in observable behaviors across contexts will affect the validity of measures. Measurement instruments will need to be sensitive to differences across settings to account for the diversity in presentation of these skills, as well as provide response options that describe the full range of experience. Understanding more about these cross-cultural implications is an area where more research is needed, and will be a critical component in the development of measures, as discussed at the end of this paper.

Challenge 4: Gender Considerations

While this study did not focus on skill differences by gender, the studies that were reviewed suggest that gender plays an important role in the soft skills that aid workforce success. For example, Cobb-Clark, et al., (2011) found that a man's occupational attainment was closely related to his locus of control, whereas for women, attainment was most associated with her openness to experience. There is also some evidence of average gender differences between men and women in soft skill proficiency. For example, multiple studies have found that, in general, women score higher than men on assessments of social perception, a measure of social skills (Sustein & Hastie, 2014). There is evidence of average gender differences among the Big Five factors as well, although this literature was not reviewed in depth for the purposes of this paper. Recent research by Gallup has found that, in general, women have different management styles that are more conducive to productivity than men. Women tend to build relationships with their employees, check in with their subordinates more often, and have more engaged employees overall (Fitch & Agrawal, 2014). These studies suggest that women are more likely to have more highly developed communication and social skills, which are key aspects of leadership.

Practitioner knowledge and limited research suggests that certain soft skills may not be equally culturally appropriate for men and women in different workplace settings. For example, program implementers attending a focus group for this project noted that skills such as assertiveness, while valuable in the workplace in many cultures, may be expressed differently by men and women in various contexts. In addition, research in Europe has found that women with the personality trait of agreeableness earn marginally less money than women with lower levels of agreeableness, while men's income is not tied to their agreeableness (Nyhus & Pons, 2012). Cultural variations in expectations around these skills are particularly important to consider when assessing the degree to which an

individual young person possesses and improves a particular skill over time. The measures that are developed to assess these skills must be sensitive enough to assess the full range of variation in gender across cultures.

The proposed skills outlined below were chosen because of preliminary evidence that they are applicable to workforce outcomes among both males and females. They were specifically selected to apply across sectors, including those traditionally male-dominated such as technical fields, as well as those traditionally female-dominated such as nursing. When results by gender are available, they are discussed in the sections reviewing the evidence for each skill (see Appendix H). These results are limited, however, as gender is not a focus of many of the studies that met our criteria. The need for more research on gender and soft skills, and a coherent synthesis of the current knowledge, is discussed in the summary and conclusions section.

Challenge 5: Understanding the Links between Soft Skills and Workforce Outcomes

Despite findings that soft skills rival academic or technical skills in predicting employment and earnings (Kautz et al., 2014), the current literature provides little explanation for *how* soft skills actually lead to improved workforce outcomes. The methodologies used in the vast majority of studies reviewed do not incorporate explanatory factors for the relationship between the skills and workforce outcomes; they simply show that an association exists (Kautz et al., 2014). Although rigorous studies control for other contributing factors, workforce outcomes are the result of complex interactions between an individual and their environment (Heckman & Kautz, 2013). Thus, the findings presented in this paper represent the current state of knowledge about which soft skills are associated with workforce outcomes.

How do soft skills lead to workforce outcomes? A Hypothesis

Despite the limitations of existing research, some mechanisms linking soft skills to workforce success can be hypothesized by extrapolating from existing evidence. In evaluating these hypotheses, it is important to acknowledge the abundant evidence that soft skills lead to better academic outcomes and that a youth with stronger soft skills will most likely advance farther in school and gain more academic skills than their peers with lower levels of soft skills (OECD, 2015b). While academic outcomes, such as attainment, contribute substantially to workforce outcomes, they are outside of the scope of this paper.

Soft skills directly contribute to an individuals' success in the following stages of workforce engagement:

Looking for work: Before ever getting a job, candidates with soft skills have an advantage even in the job-search process. Job candidates with skills such as conscientiousness are more likely to have a **successful job search** (Uysal & Pohlmeier, 2011). It is likely that other skills such as persistence and self-efficacy lead to successful job searches because seekers with these strengths are likely to carry on with their searches even when the process is difficult or prolonged. In addition, candidates with communication skills and social skills are likely to have larger networks through which to learn about employment opportunities, especially in cases of informal employment. Candidates with strong communication and social skills are also likely to perform well in interview settings, increasing their chances of obtaining a job.

Landing the job: Candidates with soft skills are more likely to **be hired**. For example, individuals possessing a positive attitude are more likely to enter the labor market and be hired (Mohanty, 2010). And in surveys, employers consistently indicate that they are looking for candidates with not only academic and/or technical skills such as literacy and numeracy, but also soft skills (Burnett & Jayaram, 2012; Cunningham & Villasenor, 2014).

Excelling at work: Once employment is obtained, soft skills are important for **retaining a position**. A certain level of self-confidence is necessary to perform well. Men with low levels of soft skills are both more likely to become unemployed and to spend a longer time unemployed than men with poor cognitive abilities (Brunello & Schlotter, 2011).

Additionally, soft skills lead **to success on the job**. In fact, a study found that "a certain level of noncognitive ability is a prerequisite for avoiding failure in the labor market" (Lindqvist & Vestman, 2011). For example , neuroticism (the opposite of emotional stability) has been linked to feeling uncertain about how one is doing on the job and an increased likelihood of quitting (Educational Testing Service, 2012). Individuals who are confident in their abilities, have a strong sense of self-efficacy, and have an orientation to learn and improve are able to take advantage of supervisors' feedback—both positive and negative. Employees are then able to appropriately adapt their performance, which in turn enhances the productivity of their company. Interpersonal skills such as communication and intrapersonal skills such as self-regulation, self-image, and self-efficacy enable this self-perpetuating learning process called "deep learning," described in a National Academy of Sciences study (Pellegrino & Hilton, 2012). Similarly, employers may be more apt to invest in training individuals with soft skills; employers may perceive that these individuals will take the most advantage of investments and reap larger professional returns. A recent OECD study posits that children with strong soft skills may be more likely to receive investments in their development from adults; a similar phenomenon may take place at work (OECD, 2015b)

Earning more: An additional highly salient measure of on-the-job success is **earnings**. Soft skills may have both direct and indirect effects on earnings. Directly, skills improve productivity which increases earnings. Evidence also shows that soft skills are more influential on earnings among workers who earn less money. For example, when looking at those who earn below the tenth percentile, noncognitive skills had a 2.5–4 times larger influence than cognitive skills (Lindqvist & Vestman, 2011). Indirectly, soft skills work through a number of different mechanisms. First, the possession of soft skills indirectly affects outcomes by increasing one's levels of educational attainment, which leads to higher earning potential (Mohanty, 2009). A high school diploma, as opposed to a GED, works as a proxy for soft skills in the labor market, and employers pay higher wages for employees with a high school diploma (Heckman & Rubinstein, 2001). Soft skills also help employees select into positions that value their skills. In appropriate positions that fit well with their skill set, employees are rewarded with higher incomes. This indirect effect may take place later in careers (Nikolaou, under review). In addition, it has been theorized that soft skills learned at entry-level positions enable employees to transition to more lucrative positions (Sherk, 2014).

Starting a business: One of the key workforce outcomes examined in this paper is success in **entrepreneurship**, or self-employment. Entrepreneurship is defined a number of ways in the literature. In some cases, the literature defines entrepreneurship as a *skill* held by an individual. This does not meet the definition of entrepreneurship as an outcome used in this study. In this review, entrepreneurship refers to starting one's own business and/or working for oneself rather than for an employer. As an outcome, measures of entrepreneurial success include self-reported success, earnings as an entrepreneur, and business growth or expansion. This report does not examine predictors of being an entrepreneur (versus working for an employer); rather, the outcome is *success among entrepreneurs.* The relationship between soft skills and entrepreneurial success may work through different pathways than in traditional employment, due to the nature of being self-employed. For example, entrepreneurs have suggested that communication and social skills may be especially relevant for their success. Entrepreneurs rely on interpersonal interactions with a diverse set of stakeholders for their livelihood, from customers to funders (Bonnestetter, 2012; McClafferty, 2014; Rybak, 2014). Additional skills such as self-control and goal-orientation are especially important for entrepreneurs as they are accountable only to themselves (and potentially to investors) and do not necessarily have oversight from others.

Benefits for employers: In addition to the individual benefits discussed above, soft skills also lead to **improved outcomes for employers**. It is in employers' best interest to hire candidates with strong soft as well as technical skills. Employees with strong soft skills may be more productive than employees without these skills; for example, employees who think critically and problem-solve ask more appropriate questions, which can lead to improved processes, services, and products for the company (Soland, Hamilton, & Stecher, 2013). Similarly, new research is emerging on the importance of individual soft skills and the way they contribute to the collective intelligence and productivity of teams; for example, when teams include more people with strong social competencies, the collective intelligence of the team improves. Social competence was found to be even more predictive of a groups' collective intelligence than the level of individual intelligence possessed by team members (Woolley, Chabris, Pentland, Hashmi, & Malone, 2010). Additionally, increased productivity leads to economic growth (World Bank, 2012). As discussed above, the labor market is quickly evolving, especially in emerging economies. Employers need employees with soft skills in order to adapt to changing market conditions. Additionally, there is strong evidence that conscientiousness, agreeableness, and emotional stability among employees help the workplace run smoothly by contributing to organizational citizenship behavior and reducing counter-productive work behaviors. These organizational citizenship behaviors go beyond the requirements of the job, and include tasks such as helping others, following workplace rules, and serving on committees that are linked to organizational success; counter productive work behaviors disrupt and slow down organizational success (Educational Testing Service, 2012; Le et al., 2011; LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995). In addition, conscientiousness, agreeableness, and emotional stability have strong, negative relationships with interpersonal deviance (negative behaviors towards coworkers) and organizational deviance (similar to counterproductive behaviors, but includes damaging property and sharing confidential company information; Berry, Ones, & Sackett, 2007).

The outcomes addressed in our review include the individual outcomes captured above: employment, performance and promotion, wages and income, and entrepreneurial success.

II. METHODOLOGY

The results presented in this paper are the product of a research process consisting of an extensive and systematic literature review and consultations and focus groups with stakeholders including researchers, program implementers, employers, and youth themselves. A detailed methodology is presented in Appendix E.

Taken together, insights from stakeholder input and the literature review were used to estimate the strength of the evidence for each soft skill. The strength of support from every source of evidence was considered using the steps outlined in Figure II.1 below.

Figure II.1. Methodology

STEP 1: Literature review findings
Terms from the literature were grouped by skill and outcome. Findings from Big Five Factor Model literature were incorporated by aligning the facets of the Big 5 with comparable skills.

STEP 2: Youth-specific literature
Findings from 58 studies focused on youth and entry-level workers were isolated.

STEP 3: Breadth, quality, and contextual diversity of research and stakeholder input
The most supported skills from the literature review (youth and all populations) were examined by their level of quality and breadth of supporting literature, the contextual diversity of supporting research, and amount of support from three stakeholder groups: youth, employers, and experts/implementers.

STEP 4: Malleability and developmental stage
The malleability and developmental appropriateness of fostering the skill in adolescence and early adulthood, specifically, was assessed.

RECOMMENDATIONS
The recommended skills enjoy strong and diverse support from the literature and among stakeholders, and are developmentally appropriate and malleable during ages 15-29.

LITERATURE REVIEW

The first step in this project was an extensive literature review of both academic and non-academic literature from around the world. The reviewed literature comes from a wide variety of disciplines including psychology, workforce development, economics, education, sociology, youth development, and occupational psychology, as described above.

Over 380 studies were identified for this review. Of those, 172 met inclusion criteria and were ultimately included. In order to be included, a study needed to:

- Be recent (published in the last 20 years, with exceptions made for seminal work),
- Be non-sector- and job-level-specific, since the research team was interested at this point in skills that are relevant across sectors and job levels,
- Include a specific **soft skill**, and
- Include a **workforce outcome** (as defined in the text box).

Publications meeting the above criteria were reviewed and evaluated for their methodological rigor and relevant findings by outcome of interest. Ultimately, the reviewed evidence fell into four types of publications:

- Empirical evidence (generally published as journal articles or independent reports),
- Employer surveys and studies,
- Consensus projects, and
- Other less rigorous publications including public-audience reports and literature reviews.

In order to compare findings across studies, terms for soft skills and outcomes used by each study were categorized into groups. These groups were given a name that would be recognizable, particularly to employers and youth (see Appendix C for the way skills from the literature were grouped). The skills which were most supported in the literature review are listed in Charts 3 and 4 in Appendix E.

> **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 outcomes** - 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. These groups emerged from the review and were not pre-determined. For a list of the outcomes which fall under each category, see Appendix C.

Incorporation of Big Five Personality Factors. These personality traits have been demonstrated to be relevant across cultures and malleable (changeable) over time (Kyllonen, Lipnevich, Burrus, & Roberts, 2009; Mike, Harris, Roberts, & Jackson, unpublished; Ng, 2015; B. W. Roberts, Walton, & Viechtbauer, 2006; Schmitt, Allik, McCrae, & Benet-Martínez, 2007; Woo et al., 2014; Zecca et al., 2012). These five traits are each comprised of facets, some of which align with commonly researched soft skills that are malleable and discrete, like creativity, grit, and self-control, while others are innate traits or temperaments or personality styles that are not as malleable. In order to incorporate the findings from this literature the research team developed a method to include the malleable sub-skills and the findings of this large body of important work alongside the skills that emerge from research across other disciplines. In consultation with personality psychologists, this paper cross-walks the facets of the Big Five factors with terms used in other research, and which translate to skills that are recognizable by employers, youth, and youth workforce development professionals. The crosswalk involves breaking down the personality traits into facets that may be more theoretically

informative (Hough & Oswald, 2008), and useful for identifying workplace skills and behaviors. For a more detailed explanation of the methodology used to include the Big Five factors, see Appendix E.

Landscape of Literature Reviewed

Empirical Literature

Strengths and Weaknesses. The strength of empirical studies is their methodology. They are the only type of study that provides statistically significant associations between skills and workforce outcomes. Unfortunately, researchers can only model what has been measured. Therefore, the empirical studies report on a limited number of skills. The most frequently measured skills among empirical studies which met inclusion criteria in this project are the Big Five Personality Factors, locus of control, and self-esteem, along with social skills in childhood. These skills are more likely to appear in the empirical evidence predicting workforce outcomes due to the history of using these measures and their strong validation by many studies.

A drawback of the empirical literature is that the published studies have been conducted almost exclusively in developed countries. Empirical studies, and longitudinal studies in particular, require a great deal of scientific expertise and are frequently very time consuming and expensive. Studies conducted in developing countries that do not meet rigorous standards never make it to publication and cannot be included in this review. Fortunately, some of the most recent available research has investigated more diverse areas of the world. Rigorous studies in diverse environments need to continue to be carried out. Whether the findings of studies in developed countries would apply in different cultures around the world represents an important question. As a first step in this direction, the Big Five Personality Factors have been found to accurately capture personality structures across a variety of languages and contexts around the world including South America, Europe, the Middle East, Africa, and Asia (R. D. Roberts & MacCann, 2014).

Characteristics of Empirical Literature. The empirical research includes studies that use data to investigate an association between one or more skills and a workforce outcome. The study may or may not find support for the association, but it attempts to assess whether there is an empirical connection between a competency and an outcome, while controlling for other explanatory factors. As a group, these studies are the most methodologically rigorous of the examined literature. Still, these studies cannot prove causation between a skill and a workforce outcome.

Ninety empirical studies were included in this review. In order to be included, the study must examine an association between a soft skill and at least one workforce outcome (as defined in Box II.1). These studies include both single, original research studies and meta-analyses of multiple studies. The empirical studies were conducted in a number of regions in the world, but, as noted, are concentrated in developed countries. The United States, the United Kingdom, and Germany are over-represented within the empirical studies. The published empirical studies conducted in developing countries cover all regions of the world, though, and include country settings ranging from China and Vietnam to Georgia

and Jordan to Ghana to Bolivia and Argentina. Notably, many of these studies were carried out by the World Bank.

Figure II.2 Empirical literature: Countries sampled
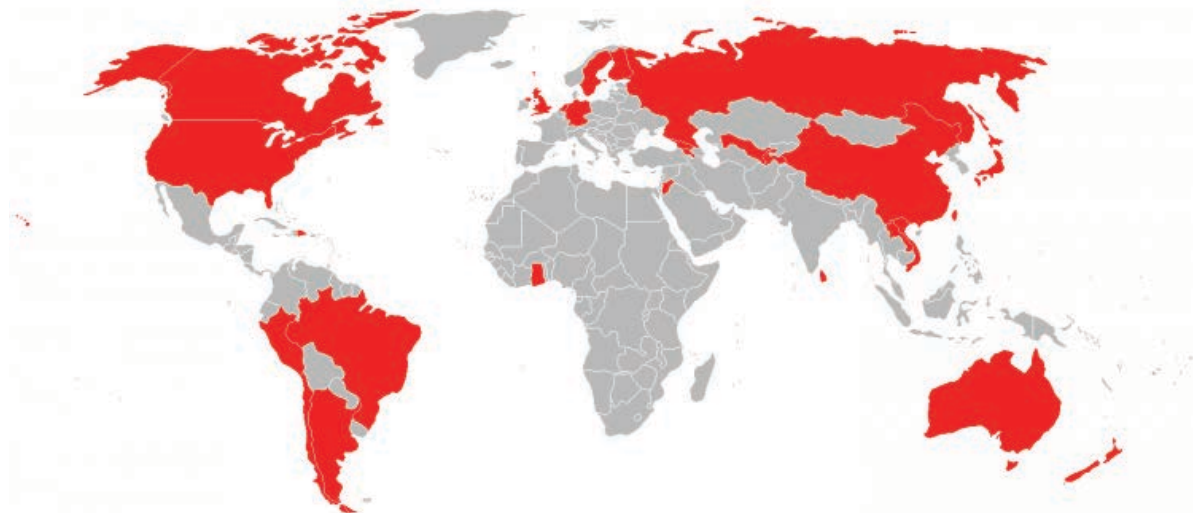
The studies reviewed were published between 1991 and 2015. Though a few seminal pieces were conducted in the early 1990's, the majority of studies were conducted in the last eight years. The studies in developing countries were conducted most recently.

The empirical studies included in this review utilize a number of methodologies, including both cross-sectional and longitudinal designs as well as meta-analysis. Eighteen meta-analyses were included. Of the empirical studies that are not meta-analyses, both cross-sectional methodologies with concurrent validity and longitudinal methodologies demonstrating predictive validity were used. The studies in developing countries tended to use cross-sectional methodologies. The most frequent methodology used was multivariate regression, though structural equation modeling and other techniques were also used.

The majority of empirical studies relied on secondary data. A handful of datasets were used a number of times across studies. These popular datasets include the National Longitudinal Survey of Youth (NLSY79) from the United States, the National Child Development Study and 1970 National Birth Cohort Study from the United Kingdom, and the German Socio-Economic Panel from Germany.

Employer Studies

Strengths and Weaknesses. These studies provide the "demand side" perspective based on employers' opinions, experience, and labor needs. Evidence from developing contexts is more abundant in this type of literature in comparison to empirical analyses or even many consensus projects. On the other hand, employer studies are limited in one respect that relates to the broader consensus issue this project seeks to address. Comparison across countries and surveys proves difficult without common understandings or definitions of skills. For example, in reviewing the literature, it is unknown whether all

employers conceptualized "communication skills" or "teamwork" in the same way; there is no evidence that any of the studies provided employers with common definitions or confirmed their understanding of terms. Another caution in evaluating this literature, which was expressed by consulted experts, is the potential discrepancy between what employers say they value in employees and actual hiring and promotion practices, which may be influenced by other factors (discrimination or nepotism, for example). Social desirability bias (responding to a survey in a way that is perceived as socially desirable) is present in all survey work and should be considered in evaluating this literature as well. In addition, as articulated by Cunningham & Villaseñor (2014), many employer surveys attempt to address skills *gaps* in a country or region and are therefore providing the skills which are most needed at the present time, not necessarily the skills that are most important in the workforce. Cappelli (2014) also points out that despite employer complaints about skills shortages or gaps, in some cases these perspectives do not match the actual available talent pool.

Characteristics of Employer Studies. Thirty-six employer studies met inclusion criteria. While specific methodologies vary, almost all of the studies summarize data collected from employers through either surveys or interviews. Some studies are analyses of job data, utilizing the Occupational Information Network (O*NET) or U.S. Bureau of Labor Statistics (Anderson, 2014; Burrus, Jackson, Xi, & Steinberg, 2013). These databases include skills which currently employed persons say are important for succeeding in their position as well as frequently sought skills from job postings for thousands of positions across industries.

Most studies are fairly recent, with the vast majority having been published after 2010; the oldest study is from 1995. Few studies explicitly focus on youth in their collection of data (for example, by providing an age range for employers to consider). Some studies are focused on investigating the connection of school to work and therefore focus on skills needed for entry-level workers or recent graduates. Collectively, the samples represent a wide variety of contexts and include small (less than 50 employees), medium (between 50–200), and large (over 200 employees) size enterprises across industry sectors.[1] Just three studies address the informal sector, while many focus only on the United States, and others include multiple countries in their analyses.

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[1] Specifically, of the 24 surveys that provided information on the size of enterprises, four included only small and/or medium sized enterprises (Burnett & Jayaram, 2012; Martin, Villeneuve-Smith, Marshall, & McKenzie, 2008; Pina, Kotin, Hausman, & Macharia, 2012; Playfoot & Hall, 2008), one included medium and large (di Gropello, Kruse, & Tandon, 2011), one included small and large (Cunningham & Villasenor, 2014), and 18 included all three sizes (Anderson, 2014; Aring, 2012; Bodewig & Badiani-Magnusson, 2014; Burrus et al., 2013; Carnevale, 2013; CBI, 2010; Del Carpio, Ikeda, & Zini, 2013; Dundar, Millot, Savchenko, Aturupane, & Piyasiri, 2014; Herrera-Sossa, Valerio, Monroy-Taborda, & Chen, 2015; Industrial Psychology Consultants Ltd., 2011, 2013; Liang & Chen, 2014; Maes, Weldy, & Icenogle, 1997; National Center on the Educational Quality of the Workforce, 1995; Savitz-Romer, Rowan-Kenyon, Zhang, & Fancsali, 2014; U.S. Department of Labor, n.d.; Valerio, Herrera-Sosa, Monroy-Taborda, & Chen, 2015). Twelve did not provide any information on enterprise size (Bassi, 2012; Briones, 2010; Casner-Lotto & Barrington, 2006; Chegg, 2013; Davis, Hansmeyer, Minic, Prakash, & Rangan, 2013; Di Gropello, 2010; IBM, 2010; Mourshed et al., 2012; National Association of Colleges and Employers, 2013; Phani, 2007; Riordan & Rosas, 2003; Robles, 2012).

Figure II.3 Employer perspectives: Countries sampled

Survey respondents varied by study: some included only high-level executives or CEOs, others surveyed staff who manage hiring or recruiting, and others included a combination of the two. Sample sizes of rigorous studies ranged from less than 100 to 190,000 respondents. Two "meta-surveys" synthesized data from 120 preexisting global and 28 preexisting national surveys of employers (Aring, 2012; Cunningham & Villasenor, 2014).

Almost all studies asked employers an open-ended question similar to "describe the ideal employee," "what are the most important skills needed for employees?" or "list the top ten skills you look for in an employee." Many studies asked their employer respondents for a general list of skills, which included both technical and soft skills, and then asked the employers to rank these in order of importance. A handful of studies provided a list of skills for employees to rank in importance (whether terms were defined was not consistently described; Di Gropello, 2010; National Center on the Educational Quality of the Workforce). If the study was focused on skills gaps, employers were asked to rank skills by those *needed* most.

Consensus Projects

Strengths and Weaknesses. Methodologically, consensus projects generally take a multi-faceted, iterative approach involving a literature review and expert consultations in the form of individual interviews or focus groups. The details of this process vary from study to study, and some projects develop specific criteria to guide selection of key skills while others include site visits to places of employment. They tend to include both technical as well as soft skills in their recommendations.

Consensus projects have some obvious limitations. First, they are overwhelmingly focused on developed countries. In addition, the consensus projects reviewed are not all focused exclusively on workforce outcomes or soft skills; some are more generally aimed at skills necessary to be a productive adult. Despite the limitations, the authors feel it is important to include consensus projects in the review of the

literature, as they have already engaged in much of the thinking and "meeting of the minds" important for coming to a consensus on the important skills for workplace success.

Characteristics of Consensus Projects. Eleven consensus projects were identified in the literature review. Just three of the 11 consensus projects focus exclusively on soft skills. Similarly, three of the 11 consensus projects focus specifically on workforce outcomes. SCANS, Equipped for the Future, the Partnership for 21st Century Skills, and a project conducted by the U.S. Department of Education are based in the United States (Kane, Berryman, Goslin, & Meltzer, 1990; Partnership for 21st Century Skills, 2014; Perkins Collaborative Resource Network; Stein, 2000). Europe is also well-represented, with two pieces focused exclusively on the United Kingdom (McNeil, Reeder, & Rich, 2012; UK Commission for Employment and Skills, 2009), one project on the European Union (Gordon et al., 2009), one project examining four European countries (Education Audiovisual & Culture Executive Agency, 2011), and one project on the OECD countries (OECD, 2001). Conversely, one project has worldwide coverage: the Learning Metrics Task Force, a joint project of the Brookings Institution and UNESCO (Learning Metrics Task Force, 2013).

Seven of the 11 consensus projects are focused on youth (Brewer, 2013; Education Audiovisual & Culture Executive Agency, 2011; Gordon et al., 2009; Learning Metrics Task Force, 2013; OECD, 2001; Partnership for 21st Century Skills, 2014; Perkins Collaborative Resource Network), while the others examine youth and adults together.

The consensus projects reviewed were conducted between the early 1990s and the present. The seminal work from the U.S. and OECD occurred between 1990 and 2001 (Kane et al., 1990; OECD, 2001; Stein, 2000). More recent projects include Key Competencies for Lifelong Learning and the U.K. Commission for Employment and Skills, which were both published in 2009 (Gordon et al., 2009; UK Commission for Employment and Skills, 2009), the Modernizing Higher Education through Soft Skill Acquisition project in Europe (Education Audiovisual & Culture Executive Agency, 2011), and the Partnership for 21st Century Skills (Partnership for 21st Century Skills, 2014), as well as ongoing work being conducted by the Learning Metrics Task Force (Learning Metrics Task Force, 2013).

Other Literature

Strengths and Weaknesses. Other literatures do not fall into any of the above categories and include literature reviews, conceptual frameworks, items from popular press sources, and reports. Rigorous literature reviews utilize inclusion criteria and present previous findings regarding skills and their relationship to workforce outcomes. Authors of these works are primarily concerned with personality traits and their relationship to economic outcomes; these four articles are frequently cited by other literature on this topic (Almlund, Duckworth, Heckman, & Kautz, 2011; Borghans, Duckworth, Heckman, & ter Weel, 2008a; Bowles, Gintis, & Osborne, 2001; B. W. Roberts, Kuncel, Shiner, Caspi, & Goldbert, 2007). Other literature reviews do not have evidence of inclusion criteria or specific methods articulated. These literature reviews primarily present evidence that links skills to workforce outcomes in order to justify their importance or to discuss which skills are of the most importance for workforce success.

Conceptual frameworks are included in the other literature category when their constructs were determined through research methods other than expert consensus (these would be classified as a "consensus project"). Some conceptual frameworks reviewed do not include an explanation of methods used to determine the skills in their framework or their hierarchy; these were not included in the literature review, but are still discussed in the "endorsement from the field" sections for each skill below.

Characteristics of Other Literature. Forty-three articles were identified as "other literature" and are included based on the study criteria. Thirty of the included articles are literature reviews (7 rigorous, 23 non-rigorous). Twenty-two are based in developed contexts including the U.S., U.K., Canada, Europe, and Australia. The majority of the other articles include findings from multiple countries or regions; seven do not specify any region or country of focus.

Figure II.4   Other literature: Countries sampled
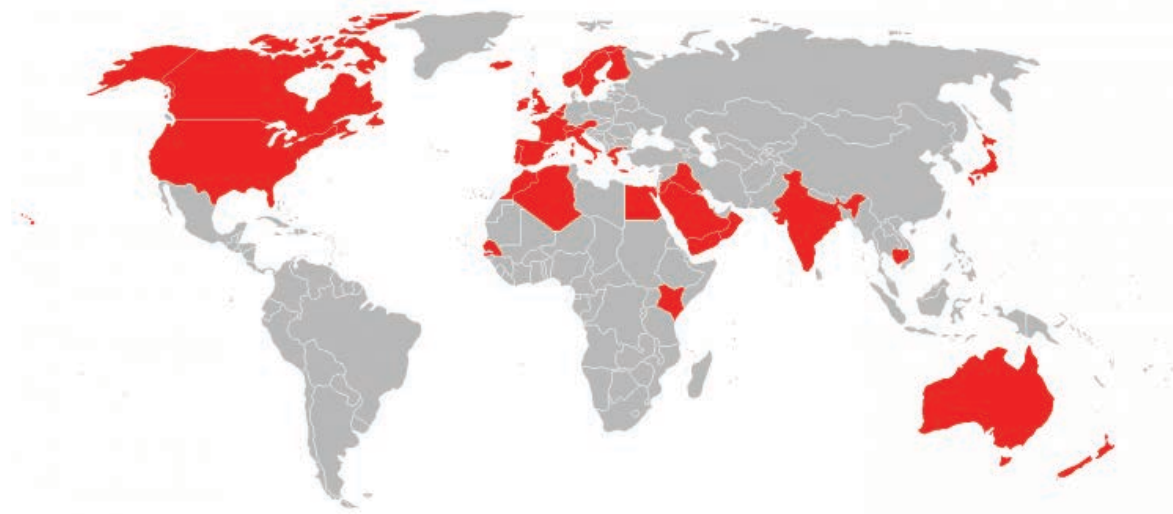
Eleven articles pertain specifically to youth, one pertains only to children, and the remaining articles are not focused on a particular age. The majority of studies are from 2010 or later. Only four studies are from 1999 or earlier.

STAKEHOLDER CONSULTATIONS

To complement the review of published literature, the research team consulted with over 40 experts in the field through individual calls, in-person meetings, and focus groups. These experts were identified in a number of ways, including referral to the authors by USAID and FHI 360 staff, through the literature review process, or during interviews with other experts.

Experts **consulted individually** represented research, programming, and employer perspectives. The project also has four key advisors who have been involved throughout the development of the project: Dr. Nancy Guerra at the University of Delaware, Dr. Patrick Tolan at the University of Virginia, Dr. Andy

Munoz at the National Center for Innovation and Excellence, and independent consultant, Bonnie Politz. A list of experts consulted is available in Appendix F.

Focus group consultations were conducted by Child Trends with two different groups of experts: researchers and funders, and program implementers. Discussions were moderated by independent consultant Bonnie Politz, and were guided around a semi-structured protocol informed by the literature review and previous expert consultations. Guiding questions were centered around the criteria necessary for selecting key competences, global applicability of skills, and program implications. The groups met for 2.5 hours; seven measurement experts and six implementers attended. A list of attendees is available in Appendix F.

Employers and youth form additional stakeholder groups for this project. FHI 360 conducted focus groups with convenience samples of employers and youth in Africa. Focus groups with employers were conducted in Zimbabwe and Mozambique; and youth participated in focus groups in Kenya and Mozambique.

Broad Stakeholder Input
In addition to the focus groups with select groups of stakeholders, described above, the project has engaged with and solicited input from more diverse audiences in a number of larger settings. These meetings, taking place throughout 2014 and 2015, include the Workforce Connections Community of Practice launch event, a meeting with the Brookings Learning Metrics Task Force, presentations at the 2014 Global Youth Economic Opportunities Conference and the 2015 Comparative and International Education Society Conference, and a meeting convened by the Federal Reserve Bank of Boston, which included an employer panel. At these events, broad stakeholder input was gained as audiences reacted to preliminary results and provided valuable feedback on the project's approach, methodology, and terminology.

A summary of the input received from experts and broad stakeholders (excluding youth and employers) is included in Appendix G.

INTEGRATION OF FINDINGS ACROSS SOURCES OF INFORMATION
Taken together, insights from the stakeholder input and literature review are used to estimate the strength of the evidence for each skill. As the evidence for each skill is reviewed in this report, the strength of support from every source is considered.

LIMITATIONS OF THE STUDY
While the project undertook a comprehensive review of the research on soft skills, the key skills recommended by this white paper are not presumed to be comprehensive. Rather, the purpose of this project was to be selective in order to arrive at a set of the *most* critical skills that available evidence indicates confer higher odds of workforce success. However, a complete list of skills that were supported by evidence is found in Appendix C.

This review focused on skills that are applicable generally—across contexts, formal and informal employment, and employment sectors. That being said, the review does not include research that is sector-specific (looking only at the hospitality industry, for example). The particular skills that are most valuable in a particular setting may vary.

This review was limited by the currently available research linking a specific skill to a workforce outcome (other outcome areas such as education are excluded), and those in turn are limited by the measures found in those studies. As articulated in the section on empirical literature, empirical researchers prefer to use validated scales, and thus many studies often use the same measure of a particular skill, which adds weight to its evidence over time. Many studies also use the same datasets. This can be problematic, because if a skill is a predictor in one study using a dataset, it is likely to be found to be a predictor in another study using the same dataset. In this way, the results of this review may be biased towards studies that use popular large-scale datasets. Additionally, there may be some overlap in the individual empirical studies that were examined and the literature reviews and meta-analyses that were reviewed. When possible, the research team reviewed the original research publications rather than secondary sources; however, there may be some remaining overlap between the reviewed studies and those included in meta-analyses and literature reviews.

There is no one study that includes measures of all of the skills in the paper, so the evidence on the relative strength of the empirical relationships of the skills to workforce outcomes is limited. Instead, this paper considers the quality, breadth, and contextual diversity of the evidence in support of a skill in addition to other factors such as malleability and developmental appropriateness. This comprehensive approach helps to address the potential biases discussed above. In addition, the evidence of malleability of the skills within program settings in developing countries is limited, so the recommendations of key skills necessarily makes assumptions based upon the research on the effectiveness of interventions and optimal developmental periods to develop those skills among youth.

III. RESULTS OF ANALYSES AND RECOMMENDATION OF KEY SOFT SKILLS

Conceptual frameworks for workforce readiness skills abound. These frameworks tend to be comprehensive in nature, addressing all skills considered, and most assume that each skill is equally important in predicting success in the workforce. Appendix A lists major frameworks identified by our review and their component parts.

A common approach is to conceptualize all of the possible skills needed to be successful at work, and then to divide those into categories that make sense conceptually. Those categories tend to include, at a minimum:

1) an intrapersonal/personal qualities skills domain,

2) an interpersonal skills domain,

3) a cognitive skills and attitudes domain, and sometimes

4) a technical skills/knowledge domain.

There is variation across frameworks in how skills are conceptualized and classified, each appropriate for the stated purposes. Some frameworks have an explicit purpose related to a specific workforce development training program. Experts with whom the research team consulted for this project reported that the selection of skills for their frameworks and training programs were based upon literature reviews, internal staff discussions, or requests from the field or a client for a specific skills training program. Many suggested that there was no systematic process used for selecting the skills. (See summary of stakeholder input in Appendix G.)

Key Resources for Recommendations
Terms from the literature and their support
• A detailed methodology can be found in **Appendix E.**
• Skills from the literature were organized by common terms. See these groupings in **Appendix C.**
Defining the skills
• A mapping of terms used by diverse disciplines to refer to different soft skills is presented in **Appendix D**.
• Common definitions for each term are found in the review of the evidence for each of the top skills, which is found in **Appendix H**.

This project has a more specific goal. It seeks to select a small set of skills that enjoy the strongest support in the research and in the stakeholder communities that can be the focus of future investments in youth workforce development programs. The first consideration for selecting skills is the amount of evidence on its relationship to workforce outcomes, and then the strength and breadth of the research supporting this relationship is considered. All of these skills received strong endorsement from the field, either from experts in workforce development, soft skill research and measurement, program implementers, or in focus groups with youth and employers. To prioritize among the skills, rigorous evidence must establish a relationship to at least one of four workforce outcomes: employment; performance or promotion; income or wages; or entrepreneurial success. The more outcomes that are predicted by a skill, the better, since this will increase the likelihood that youth who demonstrate this skill will succeed at work. In addition, evidence on whether the skill is relevant for youth and entry-level workers across regions and sectors of the economy, whether it can be changed, and the degree to which it is developmentally appropriate for youth were considered in making the

selection of recommended skills. The steps in this selection are outlined below and are summarized in Figure III.3. In addition, the evidence for each recommended skill is reviewed in Appendix H.

KEY SOFT SKILLS FOR YOUTH WORKFORCE SUCCESS

Based on this multi-faceted review, a set of key soft skills was identified for youth workforce success that receive the strongest support across all aspects of workforce success, from research evidence as well as stakeholders, that can be improved, and that are developmentally optimal as a focus for youth workforce development programs.

Figure III.1 Key Soft Skills for Youth Workforce Success

There are five top skills that increase the odds of success across all outcomes and which employers expect to see in interviews as well as on the job. Each one is actually a cluster of more specific elements.

- **Social skills** refer to a cluster of skills necessary to get along well with others (please see a detailed definition in Appendix H). Social skills also include respecting others, using context-appropriate behavior, and resolving conflict. Social skills are universally important. They predict all four types of workforce outcomes (employment, performance, income/wages, and entrepreneurial success), are sought by employers, and are seen as critically important by experts in the field. Social skills were supported across types of evidence, in all regions of the world, and within both formal and informal employment. Indeed, it is hard to imagine a position in which social skills would not be important.

- **Communication skills** include effective expression, transmission, understanding, and interpretation of knowledge and ideas. Communication skills in the context of this paper refer to the specific skills needed in the workplace, rather than general ability to communicate with others in other settings. Although communication is involved in one's ability to work with others, it is in itself a discrete "skill." There is evidence that communication skills are related to

three of the workforce outcomes studied for youth, and communication skills are the most frequently sought skill among employers, and were strongly endorsed by stakeholders in this project. The strong support for communication holds true across regions of the world, for both formal and informal positions, and for entry-level employees.

- **Higher-order thinking** consists of **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. Each of these skills may reflect the same underlying skill set of identifying an issue and taking in information from multiple sources to evaluate options in order to reach a reasonable conclusion (Stein, 2000). Similar to communication and social skills, higher-order thinking skills are involved when exercising other complex "skills" such as leadership, but can be observed and measured as a discrete skill. Higher-order thinking is very much sought by employers and is critical for all four workforce outcomes in all regions of the world. Since these skills are complex to measure in a survey, less empirical research has been conducted on how these skills relate directly to successful employment.

- **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 his/her behavior despite distractions or incentives to do otherwise. Self-control is foundational to social skills, communication, being hardworking and dependable, teamwork, leadership, problem solving, critical thinking, and decision-making. Self-control is highly supported by a rigorous literature as related to all four workforce outcomes, especially in literature specific to youth ages 15–29.

- **A positive self-concept** includes self-confidence, self-efficacy, self-awareness and beliefs, as well as self-esteem and a sense of well-being and pride. These skills are foundational to a healthy identity and awareness and deployment of one's strengths in the workforce. The emphasis is placed here on self-awareness, self-confidence, and self-efficacy, rather than self-esteem, which has been well-measured and studied, yet is mixed in its relationship to outcomes. Positive self-concept is related to success across outcomes and is especially supported in youth-specific literature.

These five skills are related to one another. The intrapersonal skills of self-control and positive self-concept contribute to the level of proficiency in the other three interpersonal skills, and in turn, higher proficiency in social skills, communication, and higher-order thinking contributes to improved self-control and positive self-concept.

These five skills were supported among all literature and stakeholders, clearly rising to top priority for youth workforce success within our review. Each of these skills has demonstrable behaviors that can be observed in the workplace (see their definitions in Appendix H). In addition, youth development programs as well as employers have experience training youth in these skills, and they are developmentally appropriate for the 15–29 age group. For example, Guerra et al. (2014, p. 17) states that, "efforts to enhance self-control must begin from infancy and continue through adolescence, with

reinforcement in early adulthood, when the prefrontal cortex (that provides the neurological engine for control) becomes fully mature."

SELECTION OF KEY SOFT SKILLS FOR YOUTH WORKFORCE SUCCESS

Below are the steps through which these recommendations were determined, starting with the literature review (which was also examined specifically for findings among youth), and then considering the breadth, rigor, and contextual diversity of this research, stakeholder input, a review of evidence that the skills can be improved, and the developmental appropriateness of skills for youth ages 15–29.

Step 1: Consideration of Findings from the Literature Review

The first step in selecting key soft skills for youth workforce success was a count of the number of positive findings linking each of the skills to one or more of the four workforce outcomes (employment, performance, wages, and entrepreneurial success) in the research including all populations. This tally drew on the database of 172 studies that met our review criteria and incorporated the vast body of research on the Big Five Personality Factors (see methodology in Appendix E).

In order to arrive at a selective set, the research team focused first on the most supported skills across all outcomes. Ten skills have the highest number of positive findings across all workforce outcomes for all populations. Some of these skills also have negative findings, meaning that the skill predicted *worse* workforce outcomes, had mixed findings (some positive and some negative), or null, non-significant findings. These non-positive findings were not included in the tallies for each skill, but are discussed in the evidence presented in detail in Appendix H, and can be found in the supplementary online database, as well as in Figure III.3, below. In order of descending quantity of support, the skills with the largest quantity of support across all outcomes and among all populations were: higher-order thinking skills, social skills, communication, hard work and dependability, positive attitude, self-control, positive self-concept, teamwork, self-motivation, and integrity/ethics.

Some of these skills had more findings for specific labor force outcomes than others. In Figure III.2 below, these skills have an X in the outcome group if they were among the top ten skills for this outcome. Note that social skills was the most supported for every outcome, whereas skills like teamwork or positive self-concept were not as supported for certain outcomes. Blank spaces in the chart do not indicate a lack of evidence, but rather that there was less evidence for that skill in relation to that outcome—it was not among the top ten most supported skills for that outcome.

Step 2: Consideration of Youth-Specific Literature

To ensure that the skills recommended by this report are relevant to youth ages 15–29, the research team next restricted analysis of the evidence to a sub-set of the literature review (58 studies) that focused on youth and entry-level workers (see Appendix E for a full description). The top ten most supported skills among this literature were the same as the list of most supported skills for all populations, with some exceptions; integrity/ethics no longer enjoyed as much support; however, responsibility was among the most supported skills for this population. For youth and entry-level workers, therefore, the skills with the most support in the literature (in descending order of support)

are: social skills, higher-order thinking skills, self-control, positive self-concept, communication, hard work and dependability, self-motivation, teamwork, responsibility, and positive attitude. In Figure III.2, the general adult population has X's and the youth and entry-level columns have Y's to denote when this skill was among the *most* supported (top ten) for each specific outcome. Blank spaces in the chart do not indicate a complete lack of evidence, but rather, that there was not enough evidence for that skill to be among the top ten skills for that particular outcome.

SOFT SKILLS BY WORKFORCE OUTCOME

SOFT SKILLS	Specific Workforce Outcomes							
	EMPLOYMENT		PERFORMANCE		INCOME		ENTREPRENEURIAL SUCCESS	
	General Adult Population	Youth 15-29 and Entry Level Workers	General Adult Population	Youth 15-29 and Entry Level Workers	General Adult Population	Youth 15-29 and Entry Level Workers	General Adult Population	Youth 15-29 and Entry Level Workers
Social skills	X	Y	X	Y	X	Y	X	Y
Higher-order thinking skills	X	Y	X	Y	X			Y
Self-control		Y	X	Y	X	Y	X	Y
Positive self-concept	X	Y	X		X	Y		Y
Communication	X	Y	X				X	Y
Hardworking and dependable	X	Y	X	Y	X	Y	X	
Self-motivation			X	Y	X	Y	X	Y
Teamwork	X	Y	X	Y				Y
Positive attitude	X	Y	X		X	Y	X	
Responsibility					X	Y		
Integrity/ethics	X		X	Y		Y	X	

In examining the youth-specific literature, there were some skills that, while not the most supported *overall* (across all outcomes), they were among the top ten for *specific* outcomes:

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[2] The three colors denote the number of positive findings supporting each skill among youth and entry-level workers. The number of findings for the general population can be found in Appendix E, Chart 5.
Skills in **blue** had 30 findings or more for youth and entry-level workers.
Skills in **green** had between 20–29 findings for youth and entry-level workers.
Skills in **red** had between 10–19 findings for youth and entry-level workers.

- For **employment:** among youth and entry-level workers (cultural sensitivity and learning and growth orientation).
- For **performance and promotion:** among youth and entry-level workers (learning and growth orientation, persuasiveness, and cultural sensitivity).
- For **income and wages:** among youth and entry-level workers (goal orientation).
- For **entrepreneurship:** among youth and entry-level workers (initiative, adaptability, creativity, and goal orientation).

A set of ten skills receiving the most support from the literature were thus identified for youth. There is evidence that each of these top ten supported skills, as well as others (see appendices for a more extensive list of skills supported in the literature) are important in various ways for workforce success. Next, the research team considered characteristics of this support in the literature as well as stakeholder input.

Step 3: Considering Breadth, Quality, and Contextual Diversity of Research and Stakeholder Input
The first two steps in this process served to establish a threshold of a minimum amount of evidence that a skill is related to an outcome in order to be considered going forward. Next, going beyond a simple tally of the quantity of positive findings in the literature, the research team examined several elements of the quality of support for the skills that rose to the top in step two. These elements are:

- the **breadth** of support represents whether the skill has been investigated using different methodologies (empirical, employer surveys, etc.), whether the skill was important across stakeholder groups (experts, employers, and youth), and the number of workforce outcomes with which this skill is positively associated in the literature;
- the **quality** of the support represents the average level of rigor of the studies according to the criteria presented in our methodology (Appendix E); and
- the **contextual diversity** includes the number of world regions sampled and whether the studies included evidence from informal markets.

The corresponding scores for each element can be found below in Figure III.3.

In this analysis, note that social skills enjoys the combination of the largest number of positive findings and the highest scores for each criteria of contextual diversity, as well as breadth and quality of research. Higher-order thinking skills and self-control, while receiving almost as many positive findings across all types of the literature linking them to all four outcomes, did not receive as much support from stakeholders or evidence for the informal sector. On the other hand, communication and positive self-concept had less evidence from the literature (and in the case of communication the quality of the literature was inferior to that of the other top ten skills), but received more stakeholder support as well as evidence from the informal sector. Other skills in the top ten for youth received fewer positive findings than the aforementioned five, and were less consistent in terms of breadth and quality of support, as well as region and sector.

Next, the research team applied the final filters: the degree to which these skills can be changed and are developmentally appropriate among youth.

Step 4: Consideration of Malleability and Developmental Stage

Malleability refers to whether a skill can be changed, and more specifically improved, during the ages of 15–29. Research demonstrates that many skills formerly described as "traits," including the Big Five Personality Factors, and thought at one time to be constant, are actually malleable (Heckman, Stixrud, & Urzua, 2006). Malleability is especially important given the inequality of opportunity experienced by youth in resource-deprived contexts, including unequal access to high-quality education and exposure to stress from poverty or violence. It is crucial to know that these skills can be developed among young people despite a lack of previous opportunities for them to be cultivated.

There is evidence that the top skills are all malleable. Figure III.2 below provides a snapshot of this evidence, based on a brief review conducted for this paper, including malleability in program contexts, indicated by black check marks in the figure, as well as theoretical malleability, indicated by white check marks.[3] Malleability of some skills has been demonstrated through experimental studies and program evaluations. Other skills do not have direct evidence of malleability, but developmental research and the foundations of these skills specifically, provide a theoretical basis for believing that the skill is malleable during certain stages of development. Malleability, then, was examined in a general sense, not limiting the timeframe to a typical program length. There is much work being done to develop these skills among youth in novel ways.

Skill development is continual and occurs through dynamic processes. Although a skill may be relatively stable at a certain age, skills are shaped by a variety of factors, including genetics and the environment, over the course of one's life (Guerra, Modecki, & Cunningham, 2014). Neuroscientists agree with psychologists on the malleability of soft skills throughout early adulthood. While there are critical or sensitive periods for brain development and skill acquisition, brain plasticity continues throughout one's life (Davidson & McEwen, 2012; Guerra et al., 2014; Roskams, 2015). In fact, soft skills are considered to be more malleable than cognitive skills during adolescence (Cunha & Heckman, 2008; Kautz et al., 2014). Therefore, developmental research indicates that the recommended skills can be changed, to some degree, throughout adolescence and early adulthood (Brunello & Schlotter, 2011).

In examining the malleability of each skill, specifically during adolescence and young adulthood, the research team was able to highlight the skills that are most likely to be improved through youth workforce development programs. **Social skills** again enjoyed evidence of malleability within program contexts for each age group of interest, 15–18 and 19–29, adding to its high marks from the amount, breadth, and quality of literature and stakeholder support. **Higher-order thinking skills**, though they enjoy less contextual diversity and breadth of support, had evidence of malleability for 15–18 year olds,

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[3] It is important to note that the scope of this paper did not include an expansive review of the malleability or development of these skills. This is an area of research that could merit a separate paper altogether. For the purposes of identifying priorities for youth workforce development, a brief understanding of the current state of knowledge on malleability was required.

and they are theoretically malleable among those 19–29. The increasing levels of autonomy, identity formation, brain development and complex decision-making that take place in adolescence and early adulthood make higher-order thinking skills particularly important for this developmental phase, and research indicates that they can be improved during this period (Brunello & Schlotter, 2011; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Guerra et al., 2014; Lippman et al., 2013; Steinberg, 2005). **Positive self-concept** had evidence of malleability within programs at both age groups of interest, and **self-control** had evidence of malleability for the 15–18 age group, and while the research team did not find evidence for older ages, the importance and appropriateness of reinforcing this skill at older ages is emphasized (Guerra et al, 2014). **Communication** skills enjoyed strong and diverse support from the literature and stakeholders, and theoretical evidence of its malleability was uncovered in the brief review. While responsibility had evidence of malleability at both age groups of interest, it was not as strong as other skills in the amount, breadth, and quality of research.

Therefore, the key skills recommended as an initial focus for investments in youth workforce development programming include social skills, higher-order thinking skills, communication, self-control, and positive self-concept. All have met the criteria of rigorous evidence linking them to multiple workforce outcomes, stakeholder support, applicability across contexts, and evidence of malleability and appropriateness during youth and young adulthood.

Below is a summary of the evidence for each skill which was weighed in determining the recommended skills.

Figure III.3   Evidence for Criteria for Selecting Soft Skills for Youth

SOFT SKILLS	FINDINGS FROM LITERATURE ONLY				BREADTH AND QUALITY				CONTEXTUAL DIVERSITY		MALLEABILITY (X = YES)			
	Positive (Number)	Mixed (Number)	Negative (Number)	Non-significant (Number)	Types of Literature (0-4)	Stakeholder Support (0-3)	Average Quality	# of Outcomes (0-4)	# of Regions (0-4)	Informal Sector (1=yes)	Early Childhood	Middle Childhood	15-18	19-29
Social skills	34.3	-	1	22.5	4	3	2.3	4	4	1	✓	✓	✓	✓
Higher-order thinking skills	31.8	-	-	1.2	4	1	2.1	4	4	0	✓	✓	✓	✓
Self-control	31	1	0.2	14.3	4	1	2.6	4	3	0	✓	✓	✓	-
Positive self-concept	25.2	1	-	18	3	3	2.3	4	4	1	✓	✓	✓	✓
Communication	25	-	-	1	4	3	1.7	3	4	1	-	✓	✓	-
Hardworking and dependable	21.7	1	0.3	12.7	4	3	2.3	3	4	1	-	✓	✓	✓
Self-motivation	20.8	-	0.2	5.3	4	2	2.1	4	3	0	-	✓	✓	-
Teamwork	19	-	0.3	1.2	3	3	2	3	4	0	✓	✓	-	✓
Responsibility	17	2	-	11	3	0	2.8	4	1	0	-	✓	✓	✓
Positive attitude	15.8	2	1.3	6.7	3	3	2.5	3	2	1	-	-	✓	-

Legend for Figure III.3

Findings

- Positive Findings: number of positive findings across all outcomes and all types of literature.

For empirical studies only:

- Negative Findings: number of negative, significant findings across all outcomes.
- Mixed Findings: number of mixed findings across all outcomes.
- Non-Significant Findings: number of non-significant findings across all outcomes.
- Skills in blue have 30 or more positive findings; skills in red have between 20–29 positive findings; skills in green have between 10–19 positive findings.

Breadth and Quality

- Types of Literature: each skill received 1 point for each type of literature supporting it (empirical, employer, consensus, and other).
- Stakeholder Support: each skill received 1 point for each stakeholder group that endorsed the skill (employer, expert/implementer, or youth).
- Average Quality: each study was coded for level of rigor among its respective type. Highest levels of rigor among type were given 3 points, medium levels of rigor were given 2 points, and lowest levels of rigor were given 1 point. These points were then averaged for each skill. See Appendix E for a classification of quality codes.
- Number of Outcomes: each skill was given 1 point per outcome category for which it had support (employment, performance, income, and entrepreneurial success).

Contextual Diversity

- Number of Regions: a skill received 1 point for each region that is represented in its supporting literature. Four points are assigned if four or more regions are covered. World regions included: Asia, Latin America and Caribbean, Middle East/North Africa, Sub-Saharan Africa, Eastern Europe, and Other developed (Western Europe, Canada, U.S.A., Australia, New Zealand).
- Informal Sector: skills received 1 point if they had at least one study with positive findings from both the formal and informal sectors. If a skill was only studied in the formal sector it received 0 points.

Malleability

　✓ = Theoretical evidence
　✓ = Empirical evidence
　For citations, please see references at end of paper.

INTERACTIONS AMONG KEY SOFT SKILLS

Self-control and positive self-concept both contribute to the level of proficiency in social skills, communication, and higher-order thinking skills, and in turn proficiency in these skills contribute to improved self-control and positive self-concept. Self-perception of competence (or efficacy) affects the strategies and level of effort employed when: (a) interacting socially with others (Rubin & Rose-Krasnor, 1992), (b) solving social and "academic" problems (Dweck, 2006; Pajares & Miller, 1994), and (c) when learning a new behavior through observation, such as a communication style (Bandura, 1985). Increasing levels of self-control lead to improved social skills (Rubin & Rose-Krasnor, 1992), as learning to regulate behavior and impulses contributes to positive interactions with others, making self-control a critical foundational skill (Murray, Rosanbalm, Christopoulos, & Hamoudi, 2014). Similarly, improved general communication skills such as listening without interrupting and speaking to others in

appropriate tones and language are indications of strong self-control (Character Lab, 2015). This general communication ability becomes even more important when communicating in the workplace, where the stakes can be higher and misunderstandings can lead to poor outcomes for employees and employers alike. Self-control has also been found to be correlated with self-esteem, an aspect of positive self-concept (Tangney, Baumeister, & Boone, 2004), demonstrating the relationship between these two recommended skills.

Likewise, levels of competency in social skills, communication, and higher-order thinking skills can also contribute to strength in self-control and positive self-concept. For example, social failures can lead to negative self-perceptions (Rubin & Rose-Krasnor, 1992). Mastery experiences, where one experiences success with any of these skills, can contribute to one's self-efficacy (Bandura, 1982).

It is also important to acknowledge the interactions *among* social skills, communication, and higher-order thinking skills. In order to interact successfully with others, adequate general communication skills are needed to convey ideas effectively, listen and respond, and tailor communication style. As noted, this paper is focused on communication skills that pertain to the workforce specifically, as indicated by employers, rather than on a general ability to communicate with others. This type of communication involves social skills (such as the ability to read others' emotions) and problem-solving in order to effectively deliver information to clients and coworkers. Similarly, social skills require problem solving, critical thinking, and decision-making as a person is faced with a series of small decision-points and potential conflicts when interacting with others (Rubin & Rose-Krasnor, 1992).

OTHER SKILLS TO CONSIDER FOR BUILDING EVIDENCE

Other skills emerged from the review with a strong base of support in relation to workforce outcomes. They include hard work and dependability, responsibility, and self-motivation. Hard work and dependability enjoys moderate support from the literature on youth, although the quality of the literature is high, and it is expected that this literature will increase as there is a current research focus on components such as "grit." It has evidence of malleability among adolescents, and theoretical evidence among young adults, and much evidence among older adults. It is clearly a critical skill that deserves more research into how it can be strengthened among young people. Self-motivation has a similar level of evidence to date focusing on youth workforce outcomes, but less evidence of malleability in the age groups of interest. Self-motivation among youth can vary by activity; similarly, it is likely to vary by type of work and the youth's interests and perceived value of the work.

As shown in Figure III.3, positive attitude is among the top ten skills enjoying research and stakeholder support, but it may be related to or dependent upon more stable personality traits, and does not enjoy as much evidence that it can be improved through interventions. Teamwork is also among the top ten skills supported in the literature on youth, but is not recommended as a separate priority, since it is actually a complex, overarching skill set comprised of many of the skills already mentioned above, as well as others. It also scores relatively low across the elements examined (see Figure III.3).

Please see Appendix H for a complete review of the evidence for each of the top ten skills, including stakeholder support.

IV. SUMMARY AND CONCLUSIONS

This study reaffirms the importance of soft skills for youth workforce outcomes. Building upon considerable prior work that has addressed soft skills, this study has identified key soft skills for youth workforce success, bringing to bear evidence and perspectives from researchers across disciplines, employers, youth, and program implementers and applying rigorous criteria and methods. The top five soft skills that promise to increase the chances of workforce success for youth include: social skills, higher-order thinking skills (including problem solving, critical thinking, and decision-making), communication, self-control, and positive self-concept. The latter two intrapersonal skills reinforce the other three skills, and are in turn reinforced by them. More focus on these skills, which are in fact included in many youth workforce development programs already, promises to yield positive results across all four workforce outcomes examined: employment, performance on the job, income and wages, and entrepreneurial success. These skills are known by a large body of research to influence life outcomes beyond the workforce as well, including education, civic engagement, and positive youth development more generally, although investigating the strength of their relationships to outcomes in these fields was outside the scope of this project. Evidence of malleability for these skills in youth workforce development programming exists; however, more work is needed in order to provide robust evidence of malleability, particularly in young adulthood. Theoretical literature suggests that adolescence and young adulthood are optimal times to develop and reinforce these skills.

In order to develop these recommendations, the authors categorized and analyzed a database of nearly 400 studies, which will be made available to other researchers, first for all populations and then restricting analyses to those focused on ages 15–29, to identify the skills receiving the strongest support. In addition, the authors considered the quality, breadth, and contextual diversity of the research, input from stakeholders, as well as the developmental appropriateness and malleability of each skill in selecting the key soft skills for youth workforce development programming.

This set of five skills happens to align with other skills frameworks. For example, the Collaborative for Academic, Social, and Emotional Learning (CASEL) summarizes social and emotional skills in the following categories: relationship skills, social awareness, self-awareness, self-management, and responsible decision-making. The World Bank's STEP Skills framework is also aligned, focusing on communication skills, problem-solving, learning skills, social skills, and personal skills. The cross-validation across the fields of social and emotional learning and workforce development is encouraging as we strive to build consensus in the workforce development field, as well as extend our findings back to the educational and informal learning systems whose curricula need to be aligned with these skills.

Many other soft skills are important and lead to positive workforce outcomes, and they are successfully incorporated into existing workforce development programming. The evidence reviewed suggests that while they are not as globally relevant across all outcomes, stakeholders, and contexts, and not as strongly linked by evidence to all outcomes considered, each has a role in strengthening the capacities of youth for particular workforce outcomes. They are deserving of continued attention in programs or regions or sectors in which particular outcomes are desired, and likewise merit additional research. Entrepreneurial success, in particular, requires unique skills such as initiative and creativity. Since the review did not focus on specific sectors of the economy, jobs, regions, gender, education or income levels, there may be specific skills that are more salient for each. The same type of review and step-by-step analysis to reach recommendations could be undertaken for each specific sector, region, or population.

This review points to the continued need for a common name for this group of skills that can propel success across all workforce outcomes, not just getting a job. We noted the inadequacy of the term soft skills to describe this broad set of skills, competencies, behaviors, attitudes and personal qualities that enable people to effectively navigate their environment, work well with others, perform well, and achieve their goals, and complement other skills such as technical, vocational, and academic skills. However, the paper does propose common terms for each skill or skill cluster, drawing upon each discipline and terms used in the literature, and hopefully adding value to the cacophony of terms for each skill currently being used across disciplines and studies. Part of that exercise required proposing terms for facets of the Big Five Personality Factors and mapping those to terms used for similar skills in other literature, and then using terms that would be understandable to youth and employers.

These findings have implications not only for youth workforce development programming, but for the need to incorporate curricula and practice in developing these skills in secondary and tertiary education, career and technical education, nonformal education, structured civic engagement, internships, apprenticeships, and in the workplace itself. The five recommended skills had evidence of malleability for ages 15–18, but some did not have evidence for those ages 19–29. In addition, some of the recommended skills had more evidence of malleability during ages younger than 15, and these should be considered for incorporation in programming for school-based and afterschool programs. Evidence of malleability for some of the other top ten skills was scarcer. For these, creativity will be needed in developing programming to foster proficiency in these skills in youth and young adults. Theoretically, there was broad agreement across disciplines in their malleability.

AREAS FOR FUTURE RESEARCH
This project has identified several areas where the current knowledge on soft skills and workforce success remains unclear. Although research may be emerging in these areas, there are several gaps where further study is needed.

Our review revealed that there is a great need for rigorous longitudinal studies of youth in the developing world, with careful attention to representativeness and stratification of samples. Currently, most longitudinal studies have been conducted solely in developed countries in the formal sector; more

knowledge is needed about the importance of soft skills for youth living and working in informal labor markets in developing countries. Sampling strategies are varied and often are not systematically related to populations for whom generalization is sought. Only 27 empirical studies met the criteria to be considered of the highest level of rigor in this review, meaning they were conducted among large, representative samples and were longitudinal with controls; none of these studies were from the developing world.

Additionally, only 58 studies explicitly focused on the youth population. The evidence suggests small but important differences in the priority skills for youth and entry level workers (in comparison to all workers), so more research targeting that population in needed, and we would caution making investments from research focused solely on adults. More empirical research is also needed in the area of entrepreneurial success and income; these outcomes were investigated by a small number of studies compared to general employment or performance outcomes.

Further research would help to clarify the dynamics of soft skills and their influence on workforce success, including:

- **How soft skills lead to workforce outcomes**. Currently, there is minimal research about the mechanisms by which these skills yield positive outcomes for both individuals and employers. For example, what is it about possessing strong social skills that leads to higher wages or a greater likelihood of employability for the individual? Similarly, how do these skills help employers achieve their goals? While we have proposed hypotheses supported by existing research, a deeper study of these pathways is needed, especially in developing contexts.
- **How soft skills are best developed by age and school level**. More research into the optimal ages and strategies for developing each of these skills, and how might they best be included in education curricula, afterschool programs, and career and technical education by age and grade is needed. A better understanding of the strategies that best reinforce and further develop these skills among youth and young adults is needed.
- **How soft skills interact with academic and technical skills to produce workforce outcomes**. A better understanding of the ways these skills bring about outcomes and influence each other, as well as academic and technical skills, is needed. This is best done through longitudinal studies and rigorous program evaluations. This understanding can be applied to the inclusion of soft skills training in technical and general education.
- **The implications of gender, culture, and specific industry sectors.** There is not enough rigorous research on the cultural differences or implications of one's gender on the utility of soft skills for workforce success. Although this is context dependent, there may be possibilities for some regional conclusions to be drawn. For example, which soft skills are most important for young women in the Middle East versus young women in Asia? What skills are most important for post-conflict economies/contexts? For specific industries and sectors? Additional work needs to focus on informal employment, which is the sector employing most youth.

- **The malleability of soft skills among young adults.** There is currently a dearth of knowledge about the 19–29 age cohort, especially when it comes to the degree of malleability of soft skills and their relationships to academic and technical skills. Although developmental science and neuroscience indicate that these skills are malleable during young adulthood and should contribute to higher proficiency in academic and technical skills, and though training in soft skills is available through post-secondary education and career and technical training, few rigorous studies were identified by our review among this group, especially in developing contexts.

Lastly, there are areas where research should be continued and amplified:

Linking specific skills to outcomes. Although the empirical literature included in our review is able to attribute specific soft skills to workforce outcomes, more work is needed in this area. Workforce development programs that strengthen soft skills should monitor changes in these capacities experienced by their participants, and researchers should empirically investigate the connection between these improvements and their workforce outcomes. Understanding how skills are developed and improved is important, but it is also important to monitor what outcomes these skills are helping young people to achieve, if any. Furthermore, specificity is needed in this area. Soft skills should be disaggregated in order to understand which skills (or combination of skills) are driving which outcomes. This information can be used not only to improve programming, but to inform future research as more is learned about what matters most for workforce success.

While this paper focused on workforce outcomes, an obvious next step would be to crosswalk priority skills across outcome domains, such as education, health, and positive youth development, in order to support holistic development of all systems that support healthy youth development more broadly. In addition, we have noted some contributions to the soft skills research that have been made by psychology, education, and economics, but there is much wealth in each field on how each skill has been operationalized and measured, and what works in each field to support their optimal development, which will add value as new programming is developed.

Measurement. Common measurement of these key soft skills is needed by funders, evaluators, researchers and programs in order to build the field, and to understand the impact of investments. Such measures must be culturally, educationally, age, and gender appropriate, and be sensitive enough to measure changes among program participants across regions and sectors of the world. In addition, all recommended skills need to be measured together in the same studies along with outcomes in order to further discern their relative importance. There is a need for objective measures and assessments from multiple reporters to address biases attributed to self-reports. Information and Communication Technology (ICT) holds promise in developing new interactive tools, as well as in portable credentialing of soft skills. Finally, how can assessments of soft skills be rigorously taken to scale to inform country and regional development? These measurement needs are no small challenge, but one hopefully made more possible to address with this review and the resulting recommendations and definitions for key soft skills.

V. REFERENCES FROM REVIEW OF MALLEABILITY

Social skills

Early childhood, middle childhood, and 15–18:

Child Trends. (2015). What Works/LINKS. From Child Trends http://www.childtrends.org/what-works/

Lippman, L. H., Ryberg, R., Terzian, M., Moore, K. A., Humble, J., & McIntosh, H. (2013). Positive and protective factors in adolescent well-being. In B. Asher, F. Casas, I. Frones, & J. E. Korbin (Eds.), *The Handbook of Child Well-Being: Theories, Methods, and Policies in Global Perspective.* New York: Springer.

19–29:

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Higher-order thinking skills

Early childhood:

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

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Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child development, 82*(1), 405–432. DOI:10.1111/j.1467-8624.2010.01564.x

19–29:

Brunello, G., & Schlotter, M. (2011). Non cogntive skills and personality traits: Labour market relevance and their development in education & training systems *Discussion Paper Series.* Bonn, Germany: Institute for the Study of Labor (IZA).

Self-control

Early childhood:

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

Middle childhood and 15–18:

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Positive self-concept

Early childhood:

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Middle childhood:

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child development, 82*(1), 405–432. DOI:10.1111/j.1467-8624.2010.01564.x

15–18:

Child Trends. (2015). What Works/LINKS. From Child Trends http://www.childtrends.org/what-works/

Lippman, L. H., Ryberg, R., Terzian, M., Moore, K. A., Humble, J., & McIntosh, H. (2013). Positive and protective factors in adolescent well-being. In B. Asher, F. Casas, I. Frones, & J. E. Korbin (Eds.), *The Handbook of Child Well-Being: Theories, Methods, and Policies in Global Perspective.* New York: Springer.

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McGroder, S. M., Moore, K. A., & Zaslow, M. J. (2000). *National Evaluation of Welfare-to-work Strategies: Impacts on Young Children and Their Families Two Years After Enrollment: Findings from the Child Outcomes Study: Summary Report:* U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, Administration for Children and Families.

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Communication

Middle childhood:

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15–18:

Kautz, T. D., Heckman, J., Diris, R., ter Weel, B., & Borghans, L. (2014). Fostering and measuring skills: Improving cognitive and non-cognitive skills to promote lifetime success. Cambridge, MA: National Bureau of Economic Research.

Hardworking and dependable

Middle childhood:

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Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: a meta-analysis of longitudinal studies. *Psychological Bulletin, 132*(1), 1. DOI:10.1037/0033-2909.132.1.1

Self-motivation

Middle childhood:

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Brunello, G., & Schlotter, M. (2011). Non cogntive skills and personality traits: Labour market relevance and their development in education & training systems *Discussion Paper Series.* Bonn, Germany: Institute for the Study of Labor (IZA).

Responsibility

Middle childhood:

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Positive attitude

15–18:

Lippman, L. H., Ryberg, R., Terzian, M., Moore, K. A., Humble, J., & McIntosh, H. (2013). Positive and protective factors in adolescent well-being. In B. Asher, F. Casas, I. Frones, & J. E. Korbin

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in the 21st century. Washington, DC: National Institution for Literacy.

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women. *Harvard Business Review*.

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pathology, better grades, and interpersonal success. *Journal of personality, 72*(2), 271-324.

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Department of Labor, Office of Disability Employment Policy.

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Woo, S. E., Chernyshenko, O. S., Longley, A., Zhang, Z.-X., Chiu, C.-Y., & Stark, S. E. (2014). Openness to experience: Its lower level structure, measurement, and cross-cultural equivalence. *Journal of personality assessment, 96*(1), 29-45.

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World Bank. (2012). World Development Report 2013: Jobs. Washington, DC: World Bank.

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APPENDICES

WORKFORCE CONNECTIONS

KEY "SOFT SKILLS" THAT FOSTER YOUTH WORKFORCE SUCCESS:

Toward a Consensus Across Fields

APPENDICES

Contents

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 I: Integration: weigh relevance, interpret, extrapolate, interpolate, analyze, evaluate and decide based on principles and information 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. **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** SUPPORT 1. Family Support: Family life provides high levels of love and support. 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. 3. Other Adult Relationships: Young person receives support from three or more nonparent adults. 4. Caring Neighborhood: Young person experiences caring neighbors. 5. Caring School Climate: School provides a caring, encouraging environment. 6. Parent Involvement in Schooling: Parent(s) are actively involved in helping the child succeed in school. EMPOWERMENT 7. Community Values Youth: Young person perceives that adults in the community value youth. 8. Youth as Resources: Young people are given useful roles in the community. 9. Service to Others: Young person serves in the community one hour or more per week. 10. Safety: Young person feels safe at home, school, and in the neighborhood. BOUNDARIES AND EXPECTATIONS 11. Family Boundaries: Family has clear rules and consequences and monitors the young person's whereabouts. 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

	32. Planning and Decision Making: Young person knows how to plan ahead and make choices. 33. Interpersonal Competence: Young person has empathy, sensitivity, and friendship skills. 34. Cultural Competence: Young person has knowledge of and comfort with people of different cultural/racial/ethnic backgrounds. 35. Resistance Skills: Young person can resist negative peer pressure and dangerous situations. 36. Peaceful Conflict Resolution: Young person seeks to resolve conflict nonviolently. POSITIVE IDENTITY 37. Personal Power: Young person feels he or she has control over "things that happen to me." 38. Self-Esteem: Young person reports having a high self-esteem. 39. Sense of Purpose: Young person reports that "my life has a purpose." 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 Interpersonal: Social/interpersonal skills, communication skills, teamwork, assertiveness Self-management: Self-control, reliability, positive attitude, presentation 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 Leadership: self-confidence, use of oral presentations, logical thought, conceptualization Human resource management: Use of socialized power, positive regard, managing group processes, accurate self-assessment Directing subordinates: developing others, use of unilateral power, spontaneity Focus on others: self-control, perceptual objectivity, stamina and adaptability, concern with close relationships 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 • use learning techniques to acquire and apply new knowledge and skills • organize, process, and maintain information • interpret and communicate information • pursue independent learning • conduct systematic inquiry; and follow through to find answers • take responsibility for own learning • spend time effectively • stay on task • select the best approach for tasks • begin, follow through and complete tasks • manage own learning • adaptable • works safely • is willing to learn • uses time efficiently without sacrificing quality
Communication	• competent in reading • write to the needs of an audience • write effectively in the languages in which the business is conducted • listen and communicate effectively • listen to understand and learn • read independently • read, comprehend and use materials, including graphs, charts, displays • understand and speak the language which the business is conducted • use numeracy effectively • articulate own ideas and vision
Team work	• interact with co-workers • understand and contribute to the organization's goals • work within the culture of the group • plan and make decisions with others and support the outcomes • work in teams or groups • respect the thoughts and opinions of others in the group • coach, mentor and give feedback • lead effectively • lead when appropriate • mobilize a group for high performance • manage oneself at work • accountability for actions taken • build partnerships and coordinate a variety of experiences • work toward group consensus in decision-making • value others' input • accept feedback • resolve conflicts
Problem-solving	• think creatively • solve problems independently • test assumptions • identify problems • take the context of data and circumstances into account • adapt to new circumstances • ability to identify and suggest new ideas to get the job done (initiative) • collect, analyse and organize information (planning and organization) • ability to plan and manage time, money and other resources to achieve goals

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 Skills: active learning, complex problem solving, writing, time management, judgment and decision making, coordination, social perceptiveness, monitoring, reading comprehension, critical thinking, speaking, active listening Abilities: writing expression, information ordering, inductive reasoning, speech clarity, deductive reasoning, written comprehension, near vision, problem sensitivity, oral expression, oral comprehension Non-cognitive competencies: Work values, work interest, personal qualities
Chegg. (2013). Bridge that Gap: Analyzing the Student Skill Index.	Chegg's "Office Street Smarts" Ability to make a persuasive argument Ability to write to encourage action or make a request Ability to communicate with authority figures and clients Ability to collaborate with people from diverse backgrounds 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: Identifies problems Considers and evaluates alternative solutions weighing their risks and benefits Formulates and reaches decisions logically Separates fact from opinion Adjusts to unanticipated situations by applying established rules and facts Works out new ways of handling recurring problems Determines what is needed to accomplish work assignments Oral communication skills: Communicates in oral messages appropriate to listeners and situations Understands and gives instructions Obtains clarifies and verifies information through questioning Personal qualities/work ethic: Displays self-esteem Knows self-management Takes responsibility Expresses willingness to learn Is motivated Understands need for organization, supervision, rules, policies, and procedures Interpersonal/teamwork skills: Conducts self according to the expressed or unexpressed norms of a group and participates according to his or her talents

	Demonstrates respect for opinions, customs, and individual differences of others, Handles conflict maturely Participates in group decisions Appreciates the importance and value of humor 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 Life skills: social skills, attendance, time-keeping, personal presentation, personal hygiene, relevant conversation 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 Methodological: Creativity/innovation, decision making, management skills, analysis skills, adaptability to changes, results orientation, continuous improvement Personal: Learning skills, commitment, professional ethics, tolerance to stress, self-awareness, life balance, culture adaptability

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 Interpersonal Communications: communication in the workplace, working as a team member, following instructions, speaking and listening, customer service, giving feedback Work Habits and Conduct: workplace behaviors and attitudes, identifying and applying for jobs, balancing work and home life, time management, interviewing Leadership: organizing and motivating others, leadership styles, effective leaders, conflict resolution, problem solving, team building Safety and Health at Work: healthy lifestyles, stress management, hazards in the workplace, emergencies and accidents, health and safety laws and practices Worker and Employer Rights and Responsibilities: Workers' rights, local labor laws, employer responsibilities Financial Fitness: Saving, budgeting, managing money, financial institutions, making financial decisions Introduction to Entrepreneurship: risk taking, types of businesses, local business people, readiness for entrepreneurship, characteristics of entrepreneurs

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

Employability Skills Profile from Bloom, M & Kitagawa, K. (1999). Understanding Employability Skills. The Conference Board of Canada.	Being (attitudes) Personal management: self-esteem and confidence, positive attitude toward learning, accountability toward change, positive attitude toward change, recognition and respect of diversity. Teamwork: Respect the thoughts and opinions of others. Having (behaviors) Academic: Continue to learn for life 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 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 Doing (skills) 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) Working (developing positive vocational attitudes, skills and behaviors) Thriving (developing physically healthy attitudes, skills and behaviors) Connecting (developing positive social attitudes, skills and behaviors) 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 Interpersonal skills: Communication, collaboration, leadership and responsibility Ability to execute: Initiative and self direction, productivity Information processing: Information literacy, media literacy, digital citizenship, ICT operations and concepts Capacity for change/learning: creativity/innovation, adaptive learning/learning to learn, flexibility

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: A1) Sensing contexts or situations A2) Monitoring and guiding reactions A3) Judging impacts Interacting and relating: Capacity to negotiate interpersonal, organizational, and intercultural relationships by: B1) Negotiating boundaries B2) Communicating verbally and nonverbally B3) Connecting across cultures Coordinating: Capacity to organize your own work, link it into the overall workflow and deal with obstacles and disruptions by: C1) Sequencing and combining activities C2) Interweaving your activities with others 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 Decision making Planning skills	Conscientiousness	Executive Attention Systems—ability to focus attention and to inhibit negative emotionality
Resilience	Stress resistance Perseverance Optimism Adaptability	Conscientiousness (*Grit*) Neuroticism	Biological system that is focused on preventing harm
Achievement Motivation	Mastery orientation Sense of purpose Motivation to learn	Conscientiousness (*Grit*) Openness to Experience	Biological tendency to seek out new environments Orienting sensitivity—tendency to respond to sensory stimulation
Control	Delay of gratification Impulse control Attentional focus Self management	Conscientiousness	Executive Attention Systems—to focus attention and to inhibit negative emotionality Self Regulatory System—delay of gratification
Teamwork	Empathy/Prosocial Low aggression Communication skills Relationship skills	Extraversion Agreeableness	Biological system promoting active approach and exploration—tendency to enjoy social interaction and positive moods
Initiative	Agency Internal locus of control Leadership	Conscientiousness Openness to Experience	Biological tendency to seek out new environments Orienting sensitivity—tendency to respond to sensory stimulation
Confidence	Self efficacy Self esteem Positive identity	Neuroticism (Emotional Stability)	Biological system that is focused on preventing harm
Ethics	Honesty Fairness orientation 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

IYF Passport to Success unit topics for employability track	Personal competencies Problem solving & managing conflict Healthy behaviors Effective work habits Skills for professional growth 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 Leadership skills Self-management skills Decision making/problem solving skills Management skills Organization skills Interpersonal skills Political skills Analysis/creativity skills 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 • Health knowledge and practice • Safety knowledge and practice • Gross, fine, and perceptual motor	• Physical health and hygiene • Food and nutrition • Physical activity • Sexual health	• Health and hygiene • Sexual and reproductive health • Illness and disease prevention
Social and emotional	• Self-regulation • Emotional awareness • Self-concept and self-efficacy • Empathy • Social relationships and behaviors • Conflict resolution • Moral values	• Social and community values • Civic values • Mental health and well-being	• Social awareness • Leadership • Civic engagement • Positive view of self and others • Resilience/"grit" • Moral and ethical values • Social sciences
Culture and the arts	• Creative arts • Self- and community-identity • Awareness of and respect for diversity	• Creative arts • Cultural knowledge	• Creative arts • Cultural studies
Literacy and communication	• Receptive language • Expressive language • Vocabulary • Print awareness	• Oral fluency • Oral comprehension • Reading fluency • Reading comprehension • Receptive vocabulary • Expressive vocabulary • Written expression/ composition	• Speaking and listening • Writing • Reading
Learning approaches and cognition	• Curiosity and engagement • Persistence and attention • Autonomy and initiative • Cooperation • Creativity • Reasoning and problem solving • Early critical thinking skills • Symbolic representation	• Persistence and attention • Cooperation • Autonomy • Knowledge • Comprehension • Application • Critical thinking	• Collaboration • Self-direction • Learning orientation • Persistence • Problem Solving • Critical decisionmaking • Flexibility • 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.

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

Confidence and agency: Self-reliance; self-esteem, self-efficacy, self-belief, ability to shape your own world and the world around you

Planning and problem solving: Navigating resources; organizing, setting and achieving goals; decision making; researching; analyzing; critical thinking; questioning and challenging; evaluating risks; reliability

Relationships and leadership: Motivating others; valuing and contributing to team-working; negotiating; establishing positive relationships; interpreting others; managing conflict; empathizing

Creativity: Imagining alternative ways of doing things; applying learning in new contexts; enterprising; innovating; remaining open to new ideas

Resilience and determination: Self-disciplined; self-management; self-motivated; concentrating; having a sense of purpose; persistent; self-controlled

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
Teamwork: tolerance, communication, and attitude
Customer service orientation: interpersonal skills and perseverance
Managerial Potential: Persuasion, enthusiasm, and problem solving |

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

Initiative & Self Direction
- Set goals and establish action plans to accomplish them
- Manage time effectively
- Face challenges with an optimistic attitude
- Adjust plans to move forward and meet goals

Flexibility & adaptability
- Adapt to different roles
- Understand how to incorporate feedback effectively
- Learn from and how to act with setback
- Reflect critically on learning experiences and processes

Communication & collaboration
- Articulate thoughts and ideas effectively to individuals and groups
- Work effectively in groups
- Respect team members and alternative points of view

Critical thinking & problem solving
- Analyze and evaluate different points of view
- Synthesize information and arguments from a variety of sources
- Interpret information and draw conclusions

Future orientation
- Prioritize long term success in the face of short term sacrifice/work
- See beyond and plan for a time horizon greater than one year

Opportunity recognition
- Identify problems as opportunities
- Understand when there is a "window of opportunity"
- Assess business ideas to identify opportunities

Comfort with risk
- Understand the difference between risk and reward
- Learn how to calculate risk
- Differentiate between short-term and long-term risks

OECD. (2001). The definition and selection of key competencies: Executive Summary. Paris: OECD.	Reflectiveness (metacognition, creative abilities, taking a critical stance) Category 1: Using tools interactively a. Ability to use language, symbols, and text interactively b. Ability to use knowledge and information interactively c. Ability to use technology interactively Category 2: Interacting in heterogeneous groups a. Ability to relate well to others b. Ability to cooperate c. Ability to manage and resolve conflicts Category 3: Acting autonomously a. Ability to act within the big picture b. Ability to form and conduct life plans and personal projects 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 Intra-personal skills: motivation and attitude, ability to learn, problem-solving skills, effective communication with colleagues and clients, analytical skills
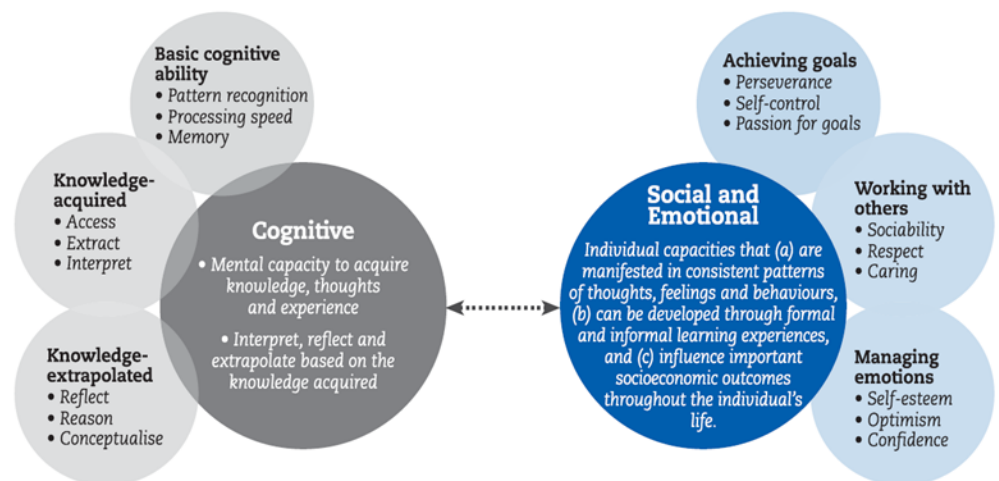
Ouane, Adama. (2002). Defining and Selecting Key Competencies in Lifelong Learning. From: Contributions to the second DeSeCo Symposium, D.S. Rychen, L.H. Salganik, and M.E. Mclaughlin, Editors. 2002, Swiss Federal Statistical Office.	UNESCO's Institute for Education Competencies for Lifelong Learning (LLL): Communicating Being able to live together Critical thinking Being able to change 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 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), 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) 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: Critical thinking and problem Communication Collaboration Creativity and innovation

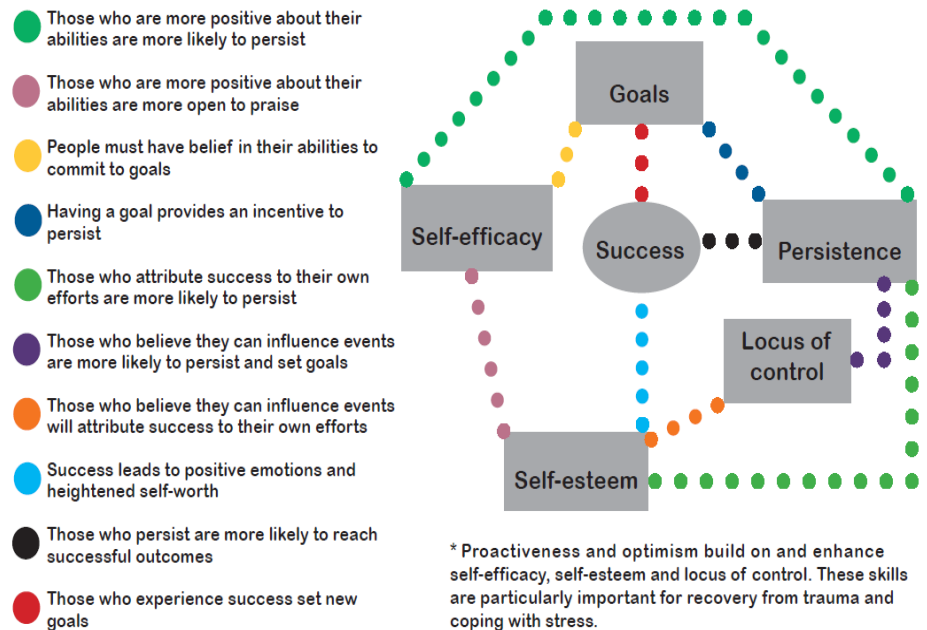|	
Pellegrino, J. W., & Hilton, M. (2012). Education for life and work: Developing transferable knowledge and skills in the 21st century. Washington, DC: National Academy of Sciences.	The Cognitive Domain includes three clusters of competencies: cognitive processes and strategies, knowledge, and creativity. These clusters include competencies, such as critical thinking, information literacy, reasoning and argumentation, and innovation. 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). 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.	

Smith, S., Donohue, P., & Bligh, E. (2014). Youth Livelihood Success: Beyond the Traditional Skill Set: International Rescue Committee.	Hypothesis: How Non-Congitive Skills Influence and Enhance Each Other[100] ● Those who are more positive about their abilities are more likely to persist ● Those who are more positive about their abilities are more open to praise ● People must have belief in their abilities to commit to goals ● Having a goal provides an incentive to persist ● Those who attribute success to their own efforts are more likely to persist ● Those who believe they can influence events are more likely to persist and set goals ● Those who believe they can influence events will attribute success to their own efforts ● Success leads to positive emotions and heightened self-worth ● Those who persist are more likely to reach successful outcomes ● Those who experience success set new goals Goals — Self-efficacy — Success — Persistence — Locus of control — Self-esteem * Proactiveness and optimism build on and enhance self-efficacy, self-esteem and locus of control. These skills are particularly important for recovery from trauma and coping with stress.
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 Interpersonal skills: Cooperate with others, resolve conflict and negotiate Decision-making skills: Use math to solve problems and communicate, solve problems and make decisions Lifelong learning skills: Take responsibility for learning

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 Decision-making skills: Solve problems and make decisions, plan, use math to solve problems and communicate Interpersonal skills: Cooperate with others, guide others, advocate and influence, resolve conflict and negotiate 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 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 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.)
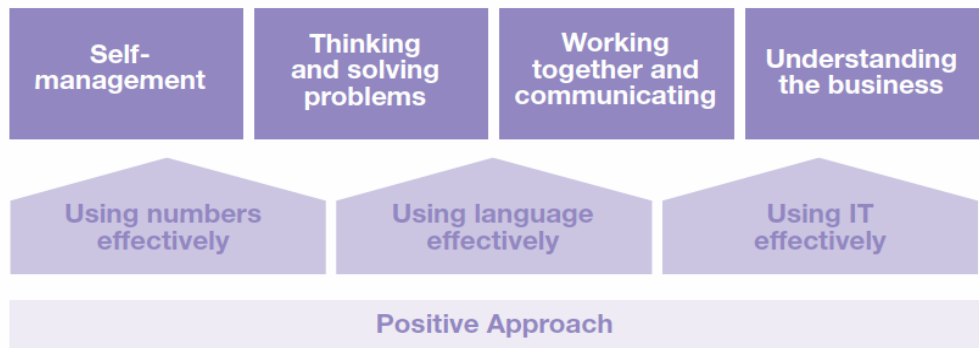
Competence areas	Emphasis in education sector	Emphasis in economic sector
Self-management	Autonomous learning, meta-cognitive competencies	Action orientation, responsibility, taking decisions and risks, resource management, planning, shaping the workplace, management of time, assessing the impact and 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

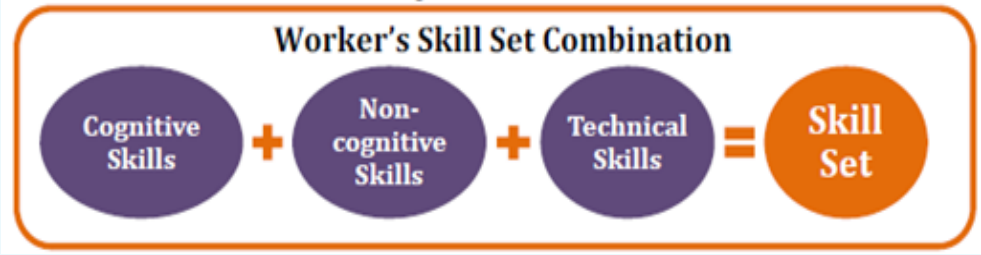|	
UK Commission for Employment and Skills. (2009). The employability challenge full report. South Yorkshire: UK Commission for Employment and Skills.	**Self-management** / **Thinking and solving problems** / **Working together and communicating** / **Understanding the business** / **Using numbers effectively** / **Using language effectively** / **Using IT effectively** / **Positive Approach**
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. Relationships and collaboration: Interpersonal skills, teamwork, flexibility and cultural competence. Critical thinking and decision-making: Reasoning, making judgments and decisions, responsible problem-solving, creativity; and accessing, evaluating and using information. 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 Awareness of self and cultural differences Business manners Emotional management 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 Interpersonal skills – how to speak, listen, present, engage, motivate, challenge, coach, give and receive feedback Intrapersonal skills – How to live with ambiguity, emotional intelligence, managing resources including time, money 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 Pathway knowledge: knowledge of college and career pathway options; knowledge of personal interests and skills and related pathways; personal goals and aspirations 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 Personal qualities: self-management, team working, problem solving Positive attitude: a 'can-do' approach, openness to new ideas

(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

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 Foundational socio-emotional	Basic Cognitive Socio-emotional	Basic Cognitive Socio-emotional Higher-order cognitive	Socio-emotional Higher-order cognitive 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) Child-focused ECD (Perry Program, Head Start)	Holistic curriculum, teaching methodology, and monitoring and evaluation system (KIPP, EPSIS, Enseña Chile, RCCP) After-school/extra-school/out-of-school programs/activities (BBBS, Student Success Teams)		Apprenticeships (Jóvenes programs) 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

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 Core skills: Communication, numeracy, ICT, problem solving, interpersonal 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 A.1 Identify occupational interests, aptitudes and abilities. A.2 Relate interests, aptitudes and abilities to appropriate occupations. A.3 Identify desired life style and relate to selected occupations. A.4 Develop a career path for a selected occupation. A.5 Select an immediate job goal. A.6 Describe the conditions and specifications of the job goal. B. JOB ATTAINMENT COMPETENCIES B.7 Construct a resume. B.8 Conduct a job search. B.9 Develop a letter of application. B.10 Use the telephone to arrange an interview. B.11 Complete application forms. B.12 Complete employment tests. B.13 Complete a job interview. C. JOB SURVIVAL COMPETENCIES C.14 Demonstrate appropriate appearance. C.15 Identify expectations that employers have of employees. C.16 Identify problems of new employees. C.17 Demonstrate time management. C.18 Follow directions. C.19 Practice effective human relations. C.20 Appropriately resign from a job. D. BASIC SKILLS COMPETENCIES D.21 Comprehend verbal communications. D.22 Comprehend written communications. D.23 Communicate in writing. D.24 Communicate verbally. D.25 Perform mathematical calculations. E. LEADERSHIP AND SELF DEVELOPMENT COMPETENCIES

	E.26 Demonstrate team membership. E.27 Demonstrate team leadership. E.28 Deliver presentations to a group. E.29 Compete successfully with peers. E.30 Demonstrate commitment to an organization. F. PERSONAL SKILLS COMPETENCIES F.31 Explain the types of maturity. F.32 Identify a self-value system and how it affects life. F.33 Base decisions on values and goals. F.34 Identify process of decision-making. F.35 Demonstrate ability to assume responsibility for actions and decisions. F.36 Demonstrate a positive attitude. 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) Application of that knowledge in skills (the psycho-motor domain) 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.	

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 Interpersonal skills - how to speak, listen, present, engage, motivate, challenge, coach, give and receive feedback Intrapersonal skills - how to live with ambiguity, emotional intelligence, managing resources including time and finances 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) Soft skills (21st century skills e.g., teamwork, self-awareness) Mental Health (Resilience e.g., ability to deal with serious adversity)

ONET categorization
http://www.onetcenter.org/content.html
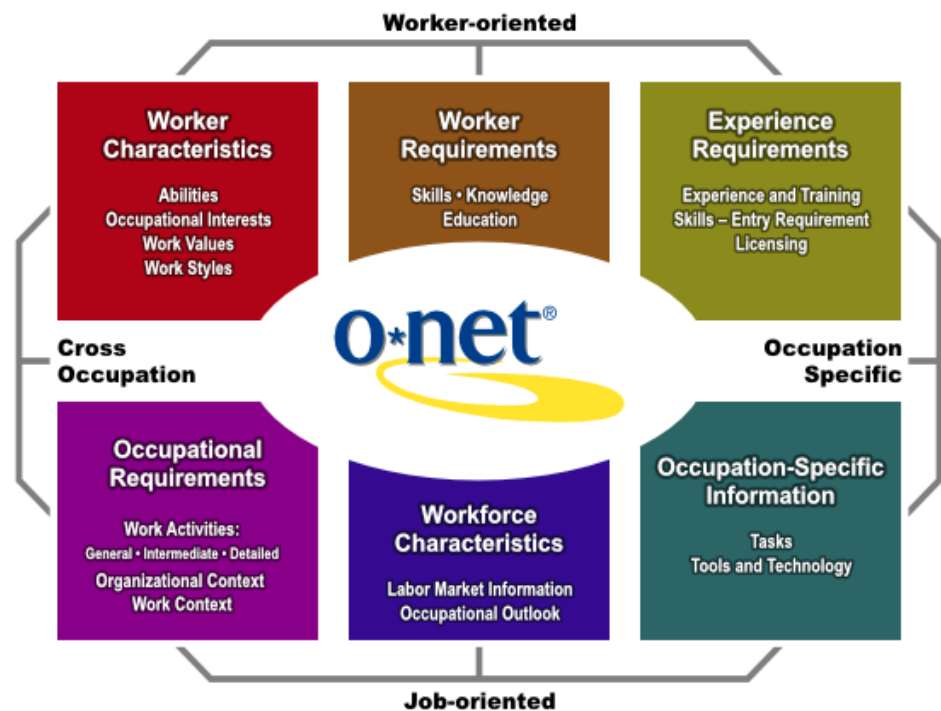
| Pennsylvania Academic and Career/Technical Training Alliance. (2011). Employability and soft skills manual. Pennsylvania Academic and Career/Technical Training Alliance. | I. Postsecondary education
a. Recognize the connection between one's interests, abilities, and aptitudes for postsecondary education and career options
b. Identify and explore career/vocational areas of interest
c. Identify the education, qualifications, and experiences necessary to achieve these careers
d. Develop a plan for career and technical, postsecondary education (e.g., SAT prep, financial aid application)
e. Complete financial aid applications

II. Job seeking skills
a. Identify, secure, understand, and complete all documentation needed to gain employment
b. Develop and complete a resume and cover letter
c. Conduct a job search
d. Demonstrate mastery of interview skills
e. Develop a follow up strategy

III. Job keeping and career advancement skills
a. Take initiative in completing job tasks using problem solving, decision making |

	and analytical skills; and demonstrate dependability and reliability around these tasks
	b. Work professionally and respectfully with a diversity of co-workers, supervisors, and customers, resolving conflict in a constructive manner
	c. Work as a contributing member of a team
	d. Participate fully in a work task or project form initiation to completion, using appropriate time management skills
	e. Know how to ask for help when learning new task at the work site
	f. Demonstrate effective communication techniques in the workplace
	g. Give and receive constructive feedback at the work site
	h. Know how to follow the rules of the workplace and maintain employment
	i. Know the importance of personal hygiene and appearance required by the employer
	j. Know how to change jobs in an appropriate, positive way
	k. Develop a plan for career advancement
	IV. Life skills
	a. Manage personal finances effectively
	V. Personal and social development skills
	a. Identify and practice conflict resolution strategies to mediate problems at work, home, and school
	b. Understand the role of culture and its effects on language, behavior, and thoughts
	c. Understand one's own cultural heritage and experience, as well as those of others
	d. Understand the role that family and peer networks play in personal, educational, and employment decisions
	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/employ abilityskills/	1. Applied knowledge a. Applied academic skills: uses reading skills, using writing skills, uses mathematical strategies and procedures, uses scientific principles and procedures b. Critical thinking skills: thinks critically, thinks creatively, makes sound decisions, solves problems, reasons, plans and organizes 2. Effective relationships a. Interpersonal skills: understands teamwork and works with others, responds to customer needs, exercises leadership, negotiates to resolve conflicts, respects individual differences 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

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

Identify and explore personal creativity and its relationship to personal and educational goals

Recognize the importance of self-esteem and its impact on future life decisions

Utilize caring adults as a resource in making life decisions

Identify and practice conflict resolution strategies to mediate problems at work, home and school

Demonstrates the ability to identify and assess community resources in order to further personal and educational goals

Demonstrate self-discipline, integrity, honesty, compassion, and responsibility in relationship to self and others

Develop an awareness of civic, legal and social responsibility

Practice making informed choices that reflect respect for the law, the rights of all people, and service to community

Understand culture and its effects on language, behavior and thoughts

Understand one's own cultural heritage and experience, as well as those of others

Understands the role that family and peer networks play in personal, educational and employment decisions

Understand and practice leadership qualities, values and behaviors

Develop and practice critical thinking skills

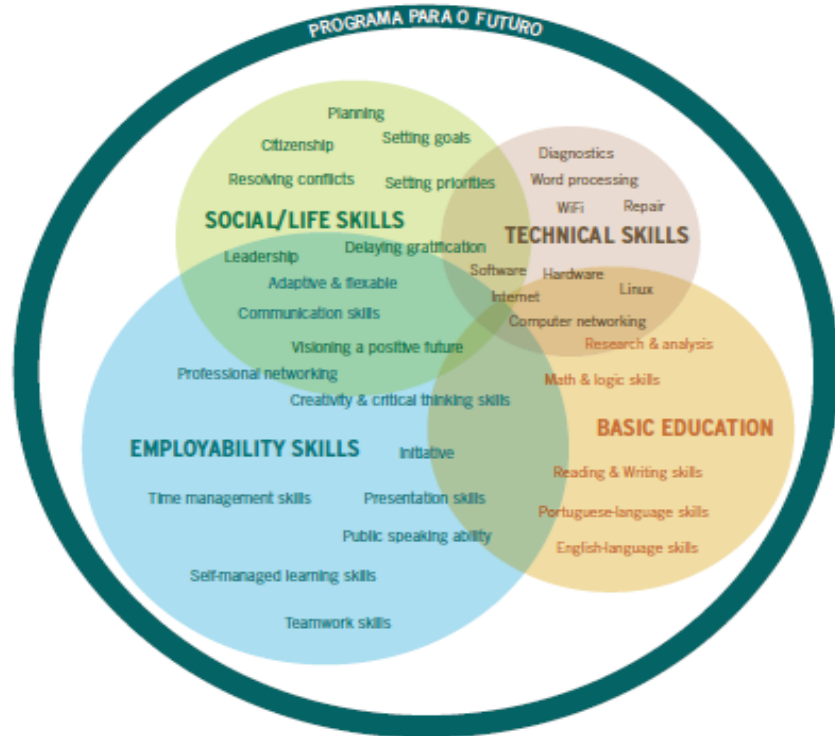| Rusten, E., Ogasawara, T., & Brady, K. (2005). Programa Para O Futuro: Enabling disadvantaged youth to build new futures: A new model for employability training. Washington, DC: AED. | PROGRAMA PARA O FUTURO

SOCIAL/LIFE SKILLS
Planning, Citizenship, Setting goals, Resolving conflicts, Setting priorities, Delaying gratification, Leadership, Adaptive & flexable, Communication skills

TECHNICAL SKILLS
Diagnostics, Word processing, WiFi, Repair, Software, Hardware, Internet, Linux, Computer networking

EMPLOYABILITY SKILLS
Visioning a positive future, Professional networking, Creativity & critical thinking skills, Initiative, Time management skills, Presentation skills, Public speaking ability, Self-managed learning skills, Teamwork skills

BASIC EDUCATION
Research & analysis, Math & logic skills, Reading & Writing skills, Portuguese-language skills, English-language skills

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

Socio-emotional skills: openness, conscientiousness, extraversion, agreeableness, emotional stability (neuroticism), grit, hostile bias, decision-making

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:**
Basic Skills: Reads, writes, performs arithmetic and mathematical operations, listens and speaks

A. Reading--locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules
B. Writing--communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts
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
e. prepares, interprets, and maintains quantitative and non-quantitative records and information, including visual displays

III. Social interaction
a. participates as an effective member of a team
b. facilitates group learning
c. teaches others new skills
d. serves clients/customers
e. influences (informs, explains, persuades, convinces) an individual or group
f. negotiates to arrive at a decision
g. works well with all kinds of people
h. understands how the social/organizational system works

IV. Systems behavior and performance
a. understands how system components interact to achieve goals
b. identifies, anticipates, and manages consequences
c. monitors and corrects performance, identifies trends and anomalies
d. links symbolic representations to real-world phenomena
e. integrates multiple displays

V. Technology interaction
a. selects and uses appropriate technologies
b. visualizes operations and programs machines to perform work
c. employs computers for input, presentation, and analysis
d. troubleshoots and maintains technologies
e. designs systems to perform complex tasks effectively

UNESCO. (2012). Youth and skills: Putting education to work. Paris: UNESCO.	Foundational skills Transferable skills 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: 1. the development of employability attributes 2. the development of self-promotional and career management skills 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 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 Personal skills 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 • Sackett & Walmsley (2014) • Hough & Ones (2001) • Goldberg (McCroskey & Richmond) • Roberts (2005, unpublished) • 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) • 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) • Goldberg (1992)	Social skills
Gregariousness	Gregariousness			
Assertiveness	Assertiveness	Assertive	• Sackett & Walmsley (2014) • Hough & Ones (2001) • 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) • 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) • Goldberg (1992) • Woo (2014)	Cultural sensitivity
		Reflective	• Goldberg (1990, 1992) • 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 • Adaptable • Flexibility • Capacity to tolerate ambiguity (Rigidity)
Autonomy	• Independent • Preference for challenge over affiliation • Acting autonomously • Ability to work/think independently
Commitment to employer	• Shows commitment "beyond the cause" • Engagement and commitment • Committed to the employer • Dedication/Loyalty to employer • Organizational commitment
Communication	• Visual communication skills (recognizing body language) • Ability to disseminate knowledge • Communication skills • Speaking • Active listening • Writing expression • Oral expression and comprehension: able to listen and follow directions • Clear/effective communication • Presenting • Convey ideas in writing • Expressiveness • Ability to use language, symbols, and text interactively
Creativity	• Innovative • Creative • Creativity: "Imagining alternative ways of doing things; applying learning in new contexts; enterprising; innovating; remaining open to new ideas" • Experimentation
Cultural sensitivity	• Capacity to operate in diverse environments • Sensitive to diversity • Cultural sensitivity • Global thinking • Cultural awareness and expression • Cultural literacy • Diversity • Multicultural awareness • Understanding the role of culture and its effects on language, behavior, and thoughts • Understanding one's own cultural heritage and those of others • Awareness and respect for diversity

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

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

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

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

	• Ability to manage conflict
	• Behaviors in situations of conflict
	Respectful
	• Respectful of others
	• Politeness
	(Antisocial)
	(Withdrawal)
	(Poor relationships)
	(Poor social skills)
Teamwork	Teamwork
	• Teamwork
	• Capacity to work well with others
	• Work as a member of a team
	• Compromises
	• Collaboration
	• Cooperation
	• 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
	• Duration of unemployment
	• Employer's hiring decision (in 1987)
	• Employer's hiring decision (in 1992)
	• Employment status = whether employed or not employed at time of follow up survey
	• Formality of employment
	• Found a job
	• 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")
	• Hours worked at age 35
	• Increased likelihood of workforce participation (Chile) and likelihood of employment (Chile, Argentina)
	• Labor Market Attachment
	• Labor market participation
	• Number of job offers
	• Receiving unemployment support (benefits)
	• Spending >6 months looking for first job (versus finding a job right after graduating)
	• Spending a year or more in concurrent spells of unemployment from age 16-29
	• Time to first employment after immigration
	• Unemployment > 12 months (if unemployed >4 months) by age 26
	• Unemployment > 4 months by age 26
	• Unemployment duration
	• Unemployment status 14 years after high school graduation
	• Weekly wages 14 years after high school graduation
	• Work in upper-class white collar jobs
	• Work qualification level

	Prompts in employer surveys or other literature:
	• What are the most important skills for new workers?
	• What do new workers in entry level jobs need to be able to do well enough to carry out critical entry level tasks?
	• What matters to hiring managers?
	• What are the minimum professional competencies and personal traits expected from entry-level employees?
	• What do corporations seek when they hire MBAs?
	• Attributes employers seek on a candidate's resume
	• Employers rate the importance of candidate skills/qualities
	• Skills that a candidate who recently left school should have developed
	• Most critical skills for candidate who has recently left school
	• Skills that would be a deal breaker for a candidate not to have
	• What skills are "essential for a job"?
	• Asked of youth - what is most important for getting a job?
	• What skills are important according to training firms?
	• What are the key core skills employees need?
Performance/ Promotion	• Adult social position: occupational status and highest educational qualification earned
	• Contextual task or job performance
	• Duration of employment
	• Early promotion recommendations
	• Extrinsic career success
	• Higher level of effort & reduced turnover
	• Job performance
	• Job performance & training performance (combined)
	• Job performance (includes performance ratings, absenteeism, number of accidents, training ratings, etc.)[4]
	• Job retention
	• Likelihood of experiencing occupational status transitions
	• Holds a managerial role
	• Meeting employer's expectations
	• Motivation to stay at the job
	• Objective performance (promotions, productivity, salary)
	• Occupational attainment (occupational status, job complexity, education level, earnings, getting dirty on the job (reversed))
	• Organizational Citizenship Behavior[5]
	o Occupational Citizenship Behavior: Altruism
	o Occupational Citizenship Behavior: Generalized compliance
	• Occupational level
	• Occupational prestige
	• Occupational status
	• 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 • Overall managerial performance • Performance rating • Promotions • Recognition • Resource power (ability to hire, fire, give pay raises, supervise people, supervise many people) • Responsibility (responsibilities at work) • Sales success • Stable work career • Success & performance • Success in the workforce • Supervisor ratings of job performance • Work autonomy (sets own hours, controls budget, whether supervised) • Work competence • Work experience at age 30 • Work performance • Work stimulation (using skills at work, learning new things at work, have others come to you for advice at work) • Years of work experience (Counterproductive work behavior) (Derailment (when an otherwise promising executive is fired, forced to quit, or no longer gets promotions)) (Likelihood of quitting) Prompts in employer surveys or other literature: • What are the skills for being a star employee? • What are the skills for being a top performer? • What are the abilities vital for success? • What are the skills that adults need to effectively carry out their roles as parents, citizens, and workers? • What are the skills of an ideal employee? • Employer-reported list of desired competencies • What is the most important leadership quality according to CEOs? • Employers listing of most important soft skills • Qualities most needed as perceived by employees
Wages/Income	Hourly or annual: • Wage • Income • Salary • Earnings Others, more detailed: • Financial security • Lifetime Income • Starting wage • Wealth • Within-occupation wages
Entrepreneurial	Auditor appraisal of entrepreneurial success

success	Career satisfaction
	Company gross income
	Employment growth rate
	Entrepreneurial growth
	Entrepreneurial performance
	Entrepreneurial profitability
	Entrepreneurial success
	Entrepreneurial success: Credit rating
	Entrepreneurial success: Employment growth
	Entrepreneurial success: Perceived profitability
	Entrepreneurial success: Subjective satisfaction
	Expected future success
	Feeling good as entrepreneur
	Log earnings for entrepreneurs
	Making progress in founding process (among nascent entrepreneurs)
	Post-start up employment growth
	Probability of business expansion
	Sales or profits growth rate
	Satisfied with past success
	Self-appraisal of entrepreneurial success
	Success of business owners
	Prompts in employer surveys or other literature:
	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
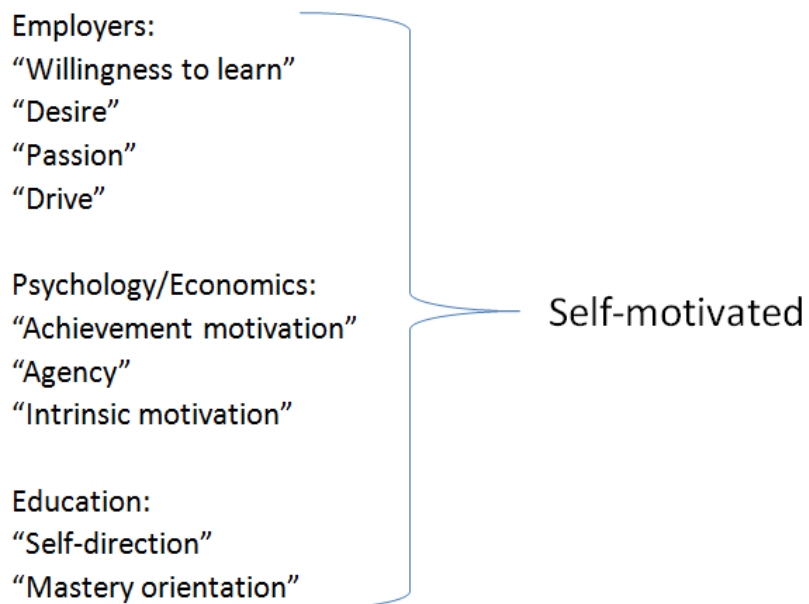
Employers:
"Enthusiastic"
"Can-do attitude"
"Good humored"

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.

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

> **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.

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

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[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

Big Five Personality Factors	Terms used across other literature
Conscientiousness	Organized
	Hardworking and dependable x2
	Self-motivated
	Self-control
	Integrity/ethics
Emotional Stability	Positive attitude
	Positive self-concept
	Self-control
	Resilient x2
Extraversion	Social skills
	Persuasive
	Positive attitude x2
	Initiative-taking
Agreeableness	Integrity/ethics
	Empathy/care for others
	Social skills x2
	Teamwork
	Learning and growth orientation
Openness	Creativity x2
	Problem solving
	Cultural sensitivity
	Learning and growth orientation & Initiative-taking

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 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 Social skills (tied)	Communication
8.	Positive self-concept	Positive attitude Planfulness (tied)	Self-control Teamwork Openness to Experience (tied)	Hard work and dependability	Social skills 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 Leadership (tied)
12. Positive attitude	Self-control Professionalism (tied)	Learning and growth orientation	Communication	[Remaining skills are tied with 1 finding each]
13. Responsibility Agreeableness (tied)	[five skills are tied: Creativity, Cultural sensitivity, Adaptability, Responsibility, Conscientiousness]	Positive attitude Commitment to employer (tied)	Goal orientation	
14. Self-motivated		Hard work and dependability	Self-motivated 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 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 Learning and growth orientation (tied)	Self-control	Learning and growth orientation	Creativity	Teamwork
12. Initiative taking	Planfulness	Leadership	Integrity/Ethics	Positive self-concept Persuasive Higher-order thinking skills (tied)
13. Creativity	Self-motivated	Creativity Resilience (tied)	Organized	Adaptability 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 (8.83)	- (.33)	2 (1.67)	7 (7.83)
Communication	103	-	-	4
Social Skills	70 (24.83)	- (2.34)	- (14)	40 (27.84)
Teamwork	55 (7.17)	- (.67)	- (6)	2 (9.33)
Positive self-concept	51 (13.67)	2 (1.33)	- (.33)	22 (6)
Leadership	51	-	-	10
Hard working and dependable	50 (35)	1 (1.34)	1 (.67)	18 (11.67)
Self-control	46 (31.17)	1 (2)	- (1)	15 (11.83)

Positive attitude	45 (34.67)	2 (1.99)	- (4.33)	10 (24.3)
Responsibility	43	2	1	14
Self-motivated	41 (17.5)	- (.67)	- (.67)	7 (5.83)
Integrity/ Ethics	31 (24.67)	2 (1.34)	- (6.67)	3 (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 16th skill and conflict management as their 17th 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 21st 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 Self-awareness: knowing one's strengths and limitations Self-esteem 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,

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[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.

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 10th 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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