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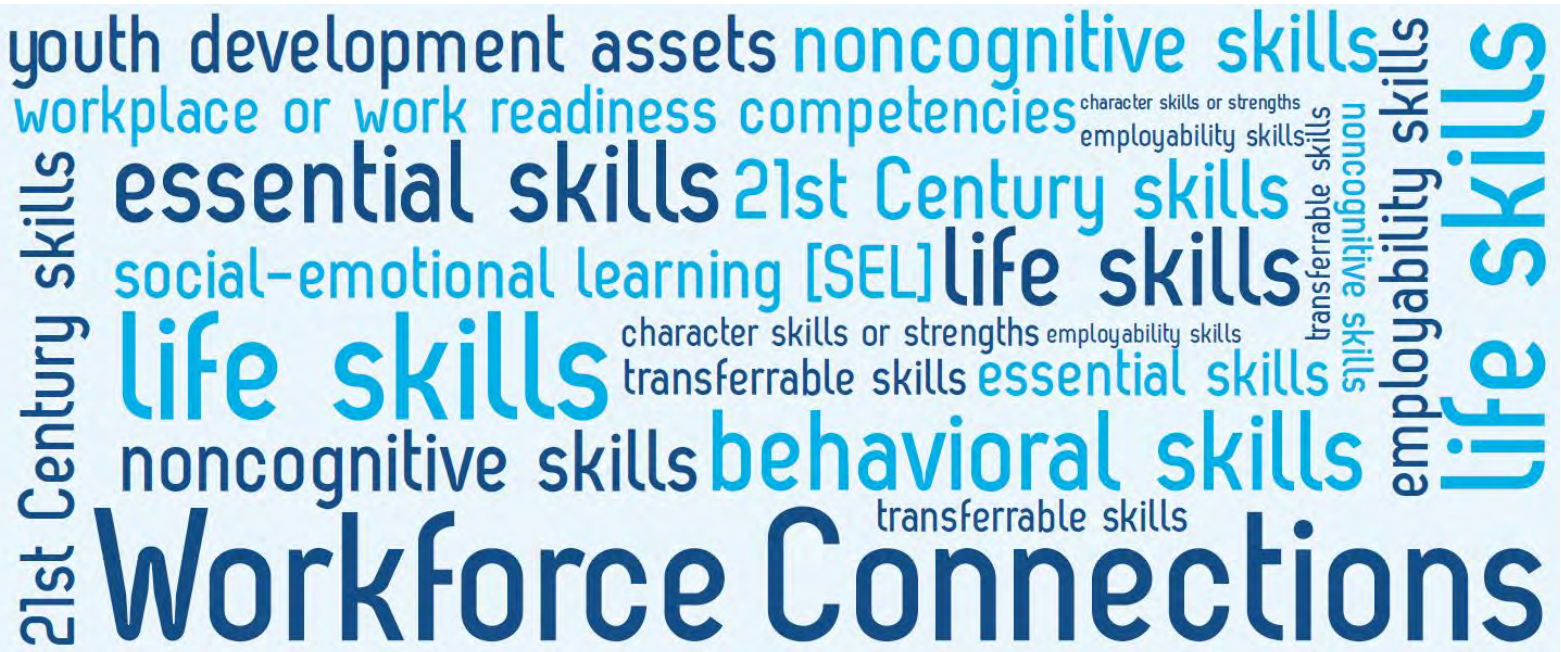
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KEY "SOFT SKILLS" THAT FOSTER YOUTH WORKFORCE SUCCESS: TOWARD A CONSENSUS ACROSS FIELDS

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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.
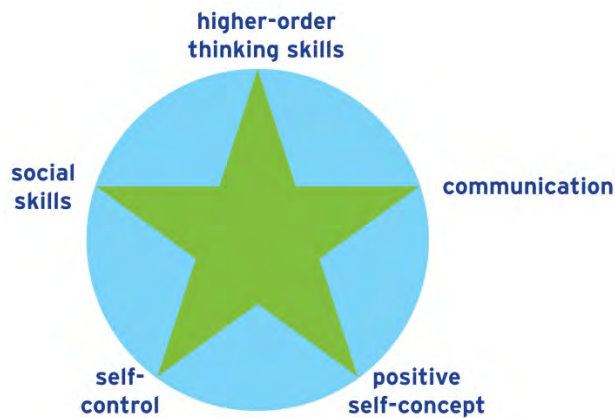
Social skills help people get along well with others. This ability includes respecting others, using context-appropriate behavior, and resolving conflict. Social skills are universally important. They predict all four types of workforce outcomes (employment, performance, income/wages, and entrepreneurial 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
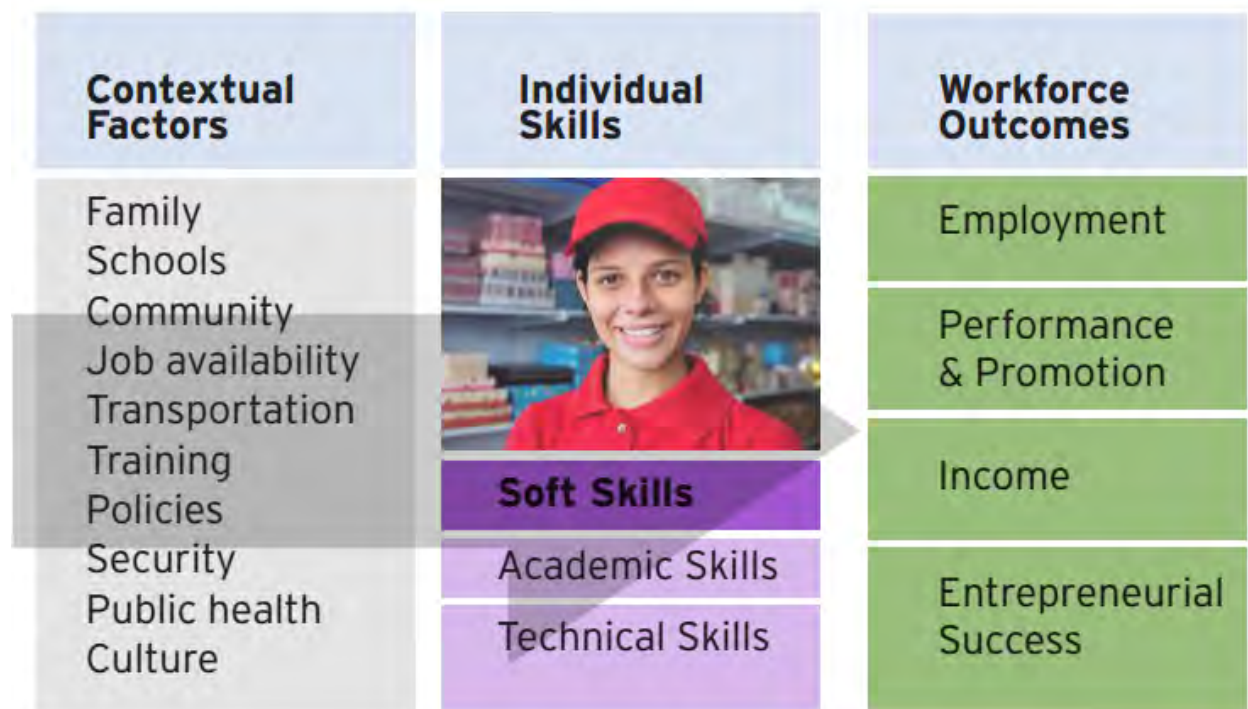
LANDSCAPE OF RESEARCH

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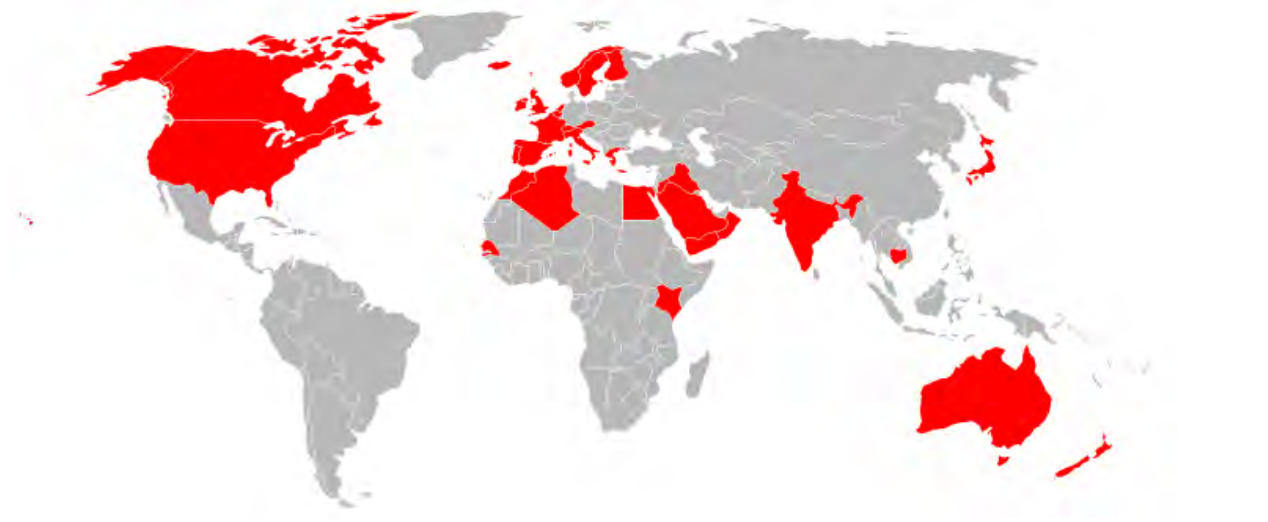
Eleven articles pertain specifically to youth, one pertains only to children, and the remaining articles are not focused on a particular age. The majority of studies are from 2010 or later. Only four studies are from 1999 or earlier.

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

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**.

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.)

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 A'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.

Figure III.2 Most Supported Skills by Outcome from the Literature Review, for Both General and Youth Populations in Order of Strength of Youth-Specific Literature[2]

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	A	Y	A	Y	A	Y	A	Y
Higher-order thinking skills	A	Y	A	Y	A			Y
Self-control		Y	A	Y	A	Y	A	Y
Positive self-concept	A	Y	A		A	Y		Y
Communication	A	Y	A				A	Y
Hardworking and dependable	A	Y	A	Y	A	Y	A	
Self-motivation			A	Y	A	Y	A	Y
Teamwork	A	Y	A	Y				Y
Positive attitude	A	Y	A		A	Y	A	
Responsibility					A	Y		
Integrity/ethics	A		A	Y		Y	A	

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:

- For **employment:** among youth and entry-level workers (cultural sensitivity and learning and growth orientation).

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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 **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, 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

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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.

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 (✓= YES)			
	Positive (Number)	Mixed (Number)	Negative (Number)	Non-significant (Number)	Types of Literature (0-4)	Stake-holder Support (0-3)	Average Quality	# of Outcomes (0-4)	# of Regions (0-4)	Informal Sector (1=yes)	Early Child-hood	Middle Child-hood	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	-	-	✓	-

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.

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