PART ONE:
SKILLS & DISPOSITIONS THAT SUPPORT YOUTH SUCCESS IN SCHOOL

Youth Development Executives of King County in collaboration with the Road Map Project

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BACKGROUND and ACKNOWLEDGEMENTS

Youth Development Executives of King County (YDEKC)
The mission of YDEKC is *to build and organize the youth development field in King County*. Our vision is that every young person has the opportunity to learn, lead, work, thrive, contribute and connect with active support from organized, networked and unified youth development efforts in King County. We are Executive Directors, CEOs and other key leaders of non-profit organizations directly serving youth ages 5 through young adulthood within King County. We are focused on developing shared outcomes and measurement tools; adopting high quality common standards of practice; and speaking with a common voice.

The Road Map Project (staffed by Community Center for Education Results)
The "Road Map Project" is a collective impact effort aimed at getting dramatic improvement in student achievement – cradle through college/career in South Seattle and South King County. The Road Map Project Goal is to double the number of students in South King County and South Seattle who are on track to graduate from college or earn a career credential by 2020. We are committed to nothing less than closing the unacceptable achievement gaps for low-income students and children of color and increasing achievement for all students from cradle to college and career.

Youth Development for Education Results (YDEKC & the Road Map Project)
In 2011 and 2012, the Youth Development for Education Results work group of the Road Map Project worked to increase the clarity of the Road Map indicators, goals and strategies where community-based youth development organizations play a vital and integral role. Youth Development Executives of King County (YDEKC) plays the convening role for this work, and also seeks to involve, learn from, and influence other key partners around King County working on the overlaps between youth development and education results.

2011-2012 Workgroup goals:
1. **Define:** Gain agreement around definitions of motivation and engagement and 21st century social skills based on research that links these skills and dispositions to academic success.
2. **Measure:** Identify available or develop new tools to measure these skills and dispositions. Explore opportunities for increasing and simplifying data collection and data sharing.
3. **Move:** Identify research-based strategies to increase student motivation, engagement and 21st century social skills.

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SKILLS & DISPOSITIONS THAT SUPPORT YOUTH SUCCESS IN SCHOOL

An almost universally held goal for young people is that they are prepared for and successful in school, work and life. However, how success is ***defined*** varies widely; and therefore, how we ***measure*** success, and the activities, interventions, opportunities and ***strategies*** that youth development organizations and schools offer to support youth success vary even more.

Youth learn and grow in many different ways. Research points to several interrelated domains of learning: **knowledge** (acquiring information), **skills** (the ability to demonstrate a particular behavioral repertoire), and **dispositions** (mindsets that become internalized, such as curiosity or persistence).[1]

As a nation, we have placed high value on measuring knowledge acquisition through standardized testing, while placing little attention on the other types of learning that also impact success in school (and work, and life). By naming and measuring these important skills and dispositions, sometimes referred to as "noncognitive factors," and using the data to drive improvements in service delivery, we will be better able to support young people where they are and target interventions effectively.

With regard to school success, these noncognitive factors primarily manifest through the ***academic behaviors*** that are necessary to, at minimum pass and ideally, excel in coursework at all levels. According to a recent study conducted by the Consortium for Chicago School Research, "Academic Behaviors are those behaviors commonly associated with being a 'good student.' These include regularly attending class, arriving ready to work (with necessary supplies and materials), paying attention, participating in instructional activities and class discussions, and devoting out-of-school time to studying and completing homework."[2]

> *"Recent research on noncognitive factors has not only suggested their importance for student academic performance but has also been used to argue that social investments in the development of these noncognitive factors would yield high payoffs in improved educational outcomes as well as reduced racial/ethnic and gender disparities in school performance and educational attainment." (Farrington, 2012)*

Attendance (missing no more than 5 days of school per semester), course failure in core subjects, and disciplinary action (suspensions and expulsions) have proven to be critical factors in students' academic performance, and are considered "early warning indicators" that helps to identify students at risk for school failure.

[1] Katz (1988) as referenced by Jalongo (2007), p. 396
[2] Farrington et al. (2012), p. 8

However, measuring only attendance, discipline records or other academic behaviors, does not yield data that can inform efforts to improve student skills and dispositions (and thereby improve attendance, grades and school success). We need to go beyond our traditional measures and metrics to understand how to help ensure that all young people are able to achieve in school – and ultimately in life.

The environments in which young people build these skills and dispositions vary widely, as do the adults that help facilitate their development – from teachers, counselors, and other school-based staff to child and youth development professionals, social workers, and other community leaders, to parents, guardians and family members. When an entire year in the life of a child or youth is considered, a young person spends nearly 75 to 80 percent of their time outside of the traditional school day – with their families, in youth development programming and in other environments. It is critical that we look to the full range of settings where students can build skills and dispositions that support academic success.

Youth Development programs, sometimes referred to as informal or expanded learning opportunities (when specifically focused on academic achievement), are offered by a host of non-profit organizations, government agencies, libraries, museums and other entities, and take place before, during, and after school, on holiday breaks, weekends and during the summer time. Programs can be offered within schools, in other facilities or in the outdoors. Research demonstrates that youth programs are powerful developmental settings,[3] where young people report high levels of both motivation and engagement.[4] These programs offer daily learning opportunities that help support the development of many of the skills and dispositions young people need to be successful. Effective schools and teachers also emphasize the skills and dispositions explored in this paper.

Prioritizing Outcomes and Indicators

Researchers, educators, youth development professionals, parents and the public at large all use different words to describe the skills and dispositions they hope young people will develop and demonstrate. Currently, some of the most common labels used to describe these types of skills and dispositions include 21st century skills, social and emotional competencies, noncognitive or non-academic skills, engagement and motivation, and habits of mind. Connected to each of these terms are frameworks that include different but related lists of competencies. **The goal of this workgroup is to come to agreement on common labels and definitions of the concepts that matter most for school success, for use in the Road Map region and beyond.** This will allow for shared language

[3] National Research Council (2002)
[4] Larson (2000), p. 174

and common measurement tools that can help us assess how young people are doing in these important areas and understand how our programs can contribute most effectively.

Criteria for Vetting Indicators

Each indicator explored in this paper has been vetted using the following criteria:[5]

- **Communication Power:** Do the general public, educators and youth development professionals agree that the skill or disposition is important to youth success?
- **Proxy Power:** Does research validate that the skill or disposition has a strong linkage to success in school (K-12 and/or Higher Ed) and/or in the workforce?
- **Data Power:** Can growth in the skill or disposition be measured? Do tools exist to measure it?
- **Practice Power:** Are there strategies, practices or interventions that can be widely implemented to increase attainment of the skill or disposition?

Vetting "powers" based on Mark Friedman's "Trying Hard isn't Good Enough."

For indicators to appear on the Road Map Project for Education Results, indicators will need to rate highly on all "powers." Some indicators may have strong linkage to life success, but not be tied as closely to school or work success. In such cases the indicator will remain a priority for the Youth Development field, but may not appear on the Road Map list of indicators.

Youth Vetting of Indicators

In the spring of 2012, 10 focus groups were held with a total of 58 young people in South Seattle and South King County to provide input into the indicators of student motivation, engagement and 21st century skills as well as inform the process for developing youth surveys. Focus groups included a diverse body of youth participants in afterschool and youth development programs including Seattle Parks and Recreation (2 groups), Treehouse (4 groups), Boys and Girls Clubs of King County (2 groups), Neighborhood House (1 group), The Service Board (1 group). While young people validated many of the concepts highlighted in this report, they encouraged more accessible and clear language in the descriptions of constructs. Their input has informed our survey design and the final list of indicators. Youth voice will continue to inform our future work in ensuring students are directly engaged in supporting the development of these critical skills and dispositions for themselves and their peers.

[5] Friedman (2005)

SKILLS & DISPOSITIONS THAT SUPPORT YOUTH SUCCESS IN SCHOOL

	INDICATORS	SKILLS & DISPOSITIONS
Motivation & Engagement	**SELF-MANAGEMENT & FUTURE ORIENTATION**	• **Goal management:** setting short and long term goals and monitoring progress towards them • **Hope and optimism:** positive beliefs regarding one's future potential, goals and choices • **Self-control / self-discipline:** assessing and regulating one's feelings, emotions and behaviors • **Grit / perseverance:** the ability to stay focused in the long-term on a goal despite obstacles
	POSITIVE MINDSETS	• **Growth mindset:** belief that intelligence and ability can increase through effort • **Self-Efficacy:** belief in one's own capabilities and capacity to learn and succeed • **Relevancy:** belief in importance of learning and that the work done in school is relevant to achieving personal goals
	BELONGING & IDENTITY	• **Relationship building:** establishing and maintaining positive relationships with adults and peers, characterized by being included, being recognized and contributing. • **Sense of belonging:** perception of acceptance and support in a learning community • **Contributing** to the well-being of one's school and community • **Personal identity:** understanding and valuing one's own culture, values and interests
21st Century Skills	**INTERPERSONAL SKILLS** (21st Century Social Skills)	• **Collaboration:** learning from and working collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue; negotiate, and compromise when working in pairs or groups • **Communication:** ability to effectively communicate, convey, negotiate, or assert interests, thoughts, emotions, needs, and rights - oral, written, multi-media and nonverbal skills • **Social capital:** recognizing and using family, school, and community resources (asking for help) • **Empathy:** caring, compassion • **Diversity appreciation / cultural competence**: the set of congruent behaviors and attitudes that enable a person to work effectively in cross-cultural situations • **Conflict resolution:** preventing, managing, and resolving interpersonal conflict
	CREATIVITY & CRITICAL THINKING (21st Century Thinking Skills)	• **Creative thinking:** using a wide range of idea creation techniques • **Imagination:** intellectual inventiveness used to generate, discover, and restructure ideas or imagine alternatives. • **Innovation implementation:** to act on creative ideas to make a new contribution. • **Reflection:** ability to reflect on one's assumptions and thinking for the purposes of deeper understanding and self-evaluation. • **Abstract thinking** • **Logical and/or scientific thinking** • **Transfer of knowledge:** utilizing skills learned in prior experiences under new circumstances

ADDITIONAL INDICATORS THAT SUPPORT YOUTH SUCCESS HOLISTICALLY

These indicators will be vetted and measurement tools will be developed in 2012-2013 by YDEKC and partners.

EDUCATED & EMPLOYED

- Adequate Yearly Progress
- Successful transitions Pre-K; 5-6; 8-9; high school graduation
- Plan for after high school – college or career
- Early Warning Indicators: *students with 6 or more absences and at least one course failure in the 9th grade; students with a Suspension and/or Expulsion in the 9th grade.*
- Positive school climate, including bullying, perception of safety, etc.
- Family engagement with school
- Skills and Dispositions that matter to school & work success (see other side of this sheet)

CONNECTED & INVOLVED

- Positive values
- Cultural competence
- Service
- Leadership
- Citizenship
- Responsible Decision Making

HEALTHY & SAFE

- Basic needs met: housing, food, clothing
- Access to insurance and physical health, mental health, dental and preventive care
- Good physical health: not overweight/obese, physically active, good nutrition
- Healthy, safe relationships with care givers and partners
- Refusal skills
- Stress management
- Avoiding alcohol, tobacco and other drugs
- Avoiding physical violence, weapons and gangs

Measuring Priority Indicators

No existing measurement tool perfectly captures the indicators we are interested in, and there are many challenges before us in coming to agreement across school districts and CBOs about shared measures and shared data. However, by developing new tools, and using existing data, we feel optimistic that we can triangulate school climate measures, individual skills and dispositions, and academic data to create an accurate picture of what students need most.

What do we want to measure?

- **The School Climate / Environment:** It is difficult to separate the skills and dispositions that young people have from the environments in which they spend their time – schools, community based organizations, home, and neighborhood climates and cultures all influence how young people feel about themselves and their future potential. Having a population level measure (at the school or school district level) of the climate young people experience is important for understanding and **increasing strategies and practices** that support student success skills and dispositions. *School (or organizational) climate can be assessed through:*
  - Youth surveys
  - Parent surveys
  - Teacher, counselor and school personnel surveys
  - Community Based Organization staff surveys
  - Observational assessments (Example: Youth Program Quality Assessment used by many King County youth development organizations and OSPI 21st Century Community Learning Centers)
- **Individual Skills and Dispositions:** In order to ensure that we can target strategies to improve the skills and dispositions at of individual young people who need it most, we must understand how young people perceive their own competencies and how well they can demonstrate their skills. *Youth dispositions and internal beliefs about themselves can be assessed through:*
  - Youth surveys
  - Parent surveys of their perception of their child's beliefs and disposition
  - Teacher, counselor, CBO staff survey of their perception of individual youth beliefs and disposition

  Individual student skills can be assessed through:
  - Demonstrations of skills through student work, including reports, presentations, multimedia projects, etc.

- Use of rubrics by teachers, youth workers or classmates to assess student's collaboration, communication, creativity and critical thinking skills

By measuring both school climate at the population level AND individual skills and dispositions at the identified student level, we hope to triangulate this data with core academic data to scale up practices that improve systemic supports for student motivation and engagement, and to provide more intensive and targeted supports to the young people that need it most.

Considerations in identifying measurement tools:

- **Aggregate vs. individually identified data:** The challenges with collecting sensitive or personal information increase when data identifies individual students. Privacy laws (HIPPA, FERPA) can make it difficult to access student level data. However, the benefits that might be realized when activities can be targeted to individual students may make it worth overcoming these barriers. Nevertheless, aggregate or population level data (at the school, district, or community level) is still very useful for scaling strategies that help to build all students' motivation and engagement.
- **Age of population:** The importance and relevance of various indicators, and how they are measured, is influenced by a **student's age and development**. Older youth are able to more reliably self-report, while assessment at the elementary ages may require more staff or teacher observation and assessment. The current focus of this work is on the middle and high school years, though we acknowledge the importance of these skills at the younger ages. We will continue to seek alignment across the cradle to career spectrum and tackle collective measurement at a later date.
- **Psychometrics:** There are many questions about the reliability (does the tool return consistent responses from the same youth?) and validity (Is the tool measuring what we want it to measure?) of various tools under consideration. Most tools that are available have not been tested for reliability or validity with the populations that are dominant in South Seattle and South King County. The high number of English Language Learners – both refugees and immigrants – with dozens of languages spoken adds complexity to the creation or use of tools that are meaningful across populations. If we pilot a new tool we will need to study it for reliability and validity, but we seek to draw from vetted tools as much as possible.
- **Existing, tested youth outcome measurement tools[6]:** A number of youth outcome measurement tools exist for use in out-of-school time settings. None of these tools emerged as a perfect fit against prioritized indicators.

[6] Dubois, Ahlstrom, Yohalem, N., & Ji (2011).

- **Scales:** Many of the nationally available tools have been created such that individual scales can be pulled out to measure a particular construct. This may make it possible for us to build a tool that measures the specific constructs we are most interested in.
- **Feasibility:** Associated costs and time to administer, analyze and report on data are substantial considerations. While some nationally administered tools have back end reporting and analysis functions, they may cost more than doing the data collection and analysis in house.
- **National sample:** Using a tool that has been used nationally could provide a powerful comparison group; however, it may be more important to be able to compare across local districts that have more in common than with a national sample.
- **Locally-vetted and used:** Tools that are already in use in our local school districts or CBOs may be easier to scale up and align than creating an entirely new tool.

WORKGROUP RECOMMENDATION:

1. Expand school districts' student perception or climate surveys to measure individual student skill and dispositions. Pilot in fall 2012; seek broader adoption in spring and fall 2013 based on pilot results.
2. Build a survey tool for use across Youth Development organizations (preferably with United Way support) with psychometrically sound and tested scales, but with ability to customize constructs to an individual organization's theory of change.
3. Explore additional measurement tools for K-5 students and for assessing student skills (21st century and others) that aren't well measured by surveys.

SKILLS & DISPOSITIONS THAT SUPPORT YOUTH SUCCESS IN SCHOOL

RESEARCH SUMMARY BY CONSTRUCT

Indicator: Self-Management & Future Orientation

Much research shows that **self-management** (and its component competencies) is important for success in school and in the workplace. Self-management – sometimes referred to as self-regulation or executive functioning – includes many related skills which lead to a person's ability to overcome obstacles and move forward regardless of environmental barriers one may be facing. Having a **future orientation** that inspires one to pursue longer term goals and persist over time supports self-management in the short term.

This construct includes the following skills and dispositions:

1. **Setting short and long term goals and monitoring progress.**

   Goal setting is critical to other components of self-management or self-regulation, as goals provide a reason to stay focused, persist in the face of obstacles and to delay gratification which could hinder one's ability to successfully reach their goal. Having a long-term goal or purpose, especially when believed to be attainable[7] and viewed as related to schoolwork or an opportunity to make a difference in the world,[8] instills tenacity and promotes deeper learning in young people.[9]

2. **Hope and optimism regarding one's future potential, goals, options, and long-range goals.**[10]

   A future orientation, which includes hope, encourages students to pursue educational and vocational goals[11]. Hope and future orientation are especially strong predictors of academic success (i.e, standardized test scores, credits earned, and overall grade point averages) in middle school, high school, and college[12]. Students who are not hopeful often feel stuck and discouraged in school. They lack the ideas and energy needed to navigate problems, and may feel overwhelmed by external stressors and expectations which they have trouble managing in a healthy way. Accordingly, positive future orientation also predicts better social and emotional adjustment in school, and helps to mediate the effects of stress in youth.[13] This is likely because students with hope and a strong future orientation "focus on success and, therefore, experience greater positive affect and less distress."[14]

[7] Lockwood & Kunda (1997)
[8] Lee, McInerney, Liem & Ortiga (2010), p. 267
[9] Damon (2008); McKnight & Kashdan (2009)
[10] Catalano et al. (2002) p. 18
[11] Lopez (2009)
[12] Snyder, et al. (2002)
[13] Wyman, Cowen, Work & Kerley (1993)
[14] Lopez (2009), p. 1

3. **Self-control / self-discipline: Assessing and regulating one's feelings, emotions and behaviors (to handle stress and control impulses).**[15]

   Self-control and delaying gratification in the short term is important to student success in individual classes and on a short-term basis. For long term educational attainment, short-term self-control and longer term grit can support student success maximally.[16] Many research studies have shown the predictive nature of self-control on student performance across ages from early childhood to college. These studies also suggest that the context a student is in (i.e. the classroom) and the skills and strategies that they already have or that they develop, can alter a student's ability to stay focused on task.[17]

4. **Grit / perseverance: the ability to stay focused on a goal despite obstacles.**

   Angela Duckworth defines grit as "perseverance and passion for long term goals," [18] and has found that grit predicts educational attainment and adolescents' and college students' GPA better than (and unrelated to) IQ.[19] Persisting through postsecondary education or career training to completion takes a great deal of focus over the long-haul. "Gritty" students are able to stay focused on their long term goals over the course of years. Grit requires being able to **monitor progress** toward personal and academic goals, planning and course correcting along the way.

Are self-management and future orientation malleable?

While it is not yet understood whether grit can increase and transfer to other aspects of one's life, it is clear that within an academic setting the behaviors that put grit into action – persisting through challenging tasks, finishing large projects, and staying focused on long-term goals – are malleable and therefore can be improved. Additionally, it is clear that when students are able to envision a different future for themselves, with clear and actionable steps to reach a goal (like college) they are better able to focus their effort on reaching that goal.

> While some students are more likely to persist in tasks or exhibit self-discipline than others, all students are more likely to demonstrate perseverance if the school or classroom context helps them develop positive mindsets and effective learning strategies. In other words, the mechanisms through which teachers can lead students to exhibit perseverance and better academic behaviors in their classes are through attention to academic mindsets and development of students' metacognitive and self-regulatory skills, rather than trying to change their innate tendency to persevere. This appears to be particularly true as adolescents move from the middle grades to high school, and it becomes important again in the transition to college. (Farrington 2012)

[15] Collaborative for Academic, Social and Emotional Learning (2011)
[16] Farrington et al. (2012), p. 21
[17] Farrington et al. (2012), p. 24
[18] Duckworth et al. (2007), p. 1087
[19] Duckworth et al. (2007), p. 1087; Duckworth & Quinn (2009)

Can increasing self-management skills and encouraging a future orientation decrease the achievement gap?

Many studies of persistence and grit have been done with high achieving college students or younger students on track for college. Several studies of self-discipline and self-control suggest that there may be a gender gap in self-control or self-discipline, where girls showed a higher ability to delay gratification and spent more time on homework than boys which accounted for half of the gender difference in grades in one study.[20] More research would need to be conducted to understand if the same results might impact the achievement gap between students of color and white students or children in poverty and their more affluent peers.

Supporting students to envision their "future self," and the path it will take to become that person, has marked effects on student outcomes – particularly for young people from impoverished communities. Several studies showed improved academic outcomes for students who participated in activities that required them to identify barriers they might face and chart a plan for how they would overcome them on their way to [their goal].[21]

Sample practices and Strategies that can Increase Self-Management and Future Orientation:

- Creating a "college going culture" in schools and the broader community
- Removing barriers to college (e.g., financial aid)
- School-to-work programs, volunteering, and service-learning opportunities that provide real world, relevant experiences that inspire a future orientation.
- Focused curriculum such as: Student Success Skills Program: A 12-week, hour-long program that teaches students how to set goals and monitor progress towards them, as well as how to be successful in high-pressure situations.
- Improving student mindsets and increasing learning strategies including metacognitive strategies in the classroom context

[20] Bembenutty (1998) as sited in Farrington (2012), p. 27
[21] Oyserman, Bybee, & Terry (2006)

Indicator: Positive Mindsets

Positive mindsets (in the academic setting) encompass the following skills and dispositions:

1. **Growth mindset: Belief that intelligence and ability can increase through effort.**[22]

   Having a "growth mindset" can activate one's self-efficacy and ensure one's self-confidence is resilient despite set-backs. In one longitudinal research study, students with a growth mindset at the beginning of 7th grade performed better in math over the next two years than their peers without a growth mindset (a fixed mindset), despite entering 7th grade with identical past achievement tests.[23] The students with the growth mindset embraced challenges and believed **increased effort could increase their success**. These findings have been mirrored in many other studies. Research shows that students who value learning over avoiding failure often seek out challenges, develop better academic strategies and are more persistent through difficult situations.[24]

2. **Self-Efficacy: belief in one's own capabilities and capacity to learn and be successful.**

   A student's belief in their ability to learn and be successful in school is a better predictor of their future academic performance than prior performance or "measured level of ability."[25] This is true across age, race and income. "A strong sense of efficacy enhances human accomplishment and personal well-being in many ways. People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than threats to be avoided."[26]

3. **Relevancy: belief in importance of learning and that the work done in school is relevant to achieving personal goals.**

   Research shows the importance of students finding personal relevancy to classroom content and their lives outside of school. When students are interested in a subject, and see a connection between what they are learning in the classroom and their lives or a future goal, they are more likely to be stimulated and, therefore, motivated to persist at tasks.[27]

[22] Dweck (2007)
[23] Blackwell, Trzesniewski & Dweck (2007), p. 253
[24] Wolters (2004), p. 247
[25] Bandura (1997)
[26] Bandura (1994)
[27] Farrington et al. (2012), p. 29

Can increasing self-efficacy and developing a growth mindset decrease the achievement gap?

Increasing students' self-efficacy and growth mindset may be an effective strategy for decreasing the achievement gap. Specifically, teaching a growth mindset can reduce the effects of "stereotype threat" (internalized oppression) on African American and Latino students; as well as increasing women's success in STEM subjects, by shaping theories of intelligence.[28] "Stereotype threat" comes into action when one is reminded whether society perceives their race or gender as high or low achieving before taking a test or in other high stakes situations. Students without a growth mindset may perform worse than they would have without the reminder of their identity (even as simple a reminder as checking a demographic box before a test). This indicates the need for strategies that focus not only on building a "growth mindset" in individual students but also on increasing equity and opportunities for all , especially those who have been most negatively impacted by inequitable systems, practices and policies in the past. Decreasing the experiences that lead to internalized oppression (or belief in a negative stereotype about oneself) is as important as helping individual students overcome "stereotype threat."

Sample practices or strategies that support self-efficacy and a growth mindset:

- Encouragement versus praise: Praise for ability (or "being smart") teaches a fixed mindset; praise for effort or strategy teaches a growth mindset and fosters resilience.
- Directly teaching students to understand that the brain can create new connections and a student can actually get smarter by working on difficult tasks. This direct teaching method has proven effective when students were taught by teachers, outside workshop facilitators, and college-aged mentors.[29]
- Mindset Works® School Kit. Includes a) growth mindset teacher professional development, b) Brainology® Interactive Program (http://www.brainology.us/webnav/whatismindset.aspx) , which teaches students a growth mindset and how to apply it to their schoolwork, and c) tools for administrators, teachers and students to use on an ongoing basis to deepen the growth mindset in their schools.
- Service-Learning and project based learning in any subject can provide more relevancy in classroom contexts.

[28] Dweck (2007)
[29] Good, Aronson, & Inzlicht (2003), p. 657

Indicator: Belonging & Identity

Belonging and identity encompasses the following skills and beliefs:

1. **Relationship building: establishing and maintaining positive relationships with adults and peers, characterized by being included, being recognized and contributing.**
   "A student's sense of belonging in a school or classroom has a strong impact on academic performance."[30] Adolescents with better relationships with peers and teachers experience a greater sense of belonging in school; which helps them to remain motivated and engaged in school, and earn better grades.[31] When students feel accepted and have positive relationships in school, they are less consumed throughout the school day with anxiety about how they are being perceived and are better able to focus on academic tasks. A strong sense of belonging not only supports student success in school but also is a powerful protective factor against risk taking behaviors. In a survey of high-school drop-outs, students reported craving attention, remembering their best days as days their teachers "noticed them, encouraged them and got them involved."[32]
2. **Sense of belonging: perception of acceptance and support in a learning community.** Several experiments looked at a critical transition - entering college or middle school - and young people's sense of belonging. In one study, older college students helped new students understand that they were not alone in feeling concern about whether they would be able to fit in socially. After a period of time, most students felt a sense of belonging – they just had to get through the rough patches. The effects were particularly striking with African American students; even the brief participation in the study decreased the achievement gap by half over the next three years.[33] Similar effects were seen for students transitioning into middle school. The converse is also true: research shows that when young people feel rejection or exclusion, they will likely be aggressive or become withdrawn, express less interest in school and be more likely to drop out.[34]
3. **Contributing to the well-being of one's school and community.** Students who are meaningfully involved in all aspects of decision making in their schools are likely to be more motivated to excel in school as they have greater ownership in their own (and the schools') achievement.[35] Additionally, young people who are engaged in service-learning or other activities that provide real world opportunities to improve their communities

[30] Farrington (2012), p. 28
[31] Furrer & Skinner (2003), p. 158; Roeser, Midgley, & Urdan (1996), p. 417-419
[32] Bridgeland et al. (2006), p. 13
[33] Walton & Cohen (2007; 2011)
[34] Osterman (2000)
[35] Fletcher (2005)

express greater engagement in their education, leading to improved academic behavior (attendance, participation) and persistence.[36]

4. **Personal identity: understanding and valuing one's own culture, values and interests**

   "Most scholars of ethnic and racial identity now agree with the view that ethnic and cultural identity provides a sense of social connectedness that is the basis for psychological well-being and that a strong sense of connection and pride in one's ethnicity is related to healthy developmental outcomes."[37] All students, regardless of race or ethnicity have multiple cultural identities including class, gender identity, sexual orientation, religion, national origin and/or race. Most young people experience their place within the school community as bi- or multi-cultural. Students must work to integrate their identities as they move from home to community to school; and successful integration of their full identity can help in their success. "Immigrant youngsters with integrated identities scored significantly higher than all other groups on measures of psychological adjustment."[38] Having integrated cultural identities allows for maintaining one's own cultural identities while participating or thriving in a new culture. This contrasts with acculturation or assimilation (giving up one's historical cultural identity and the adoption of the dominant cultural norms) which can negatively impact student success. For example, "maintenance of ethnic loyalty, not assimilation, appears associated with stronger school performance among immigrant children."[39]

Sample practices and strategies that can build student's sense of belonging and identity:

- High expectations: Teachers with high expectations for their students express more positive affect, give more attention, and provide more specific constructive feedback and encouragement to their students (leading to better sense of belonging and achievement)[40]
- Youth Program Quality Intervention (Weikart Center for Youth Program Quality): High quality programs focus on developing an emotionally safe climate and a sense of belonging for young people.
- Cooperative learning activities
- Anti-bullying and comprehensive positive school climate efforts, including focus on cultural competence and relevance
- Family involvement in the school and supporting the integration of student identity (maintaining strong connection with family culture while being welcomed and supported in the life of school or organization)

[36] Simonet (2008), p. 1
[37] Codjoe, H. (2006), p. 45
[38] Phinny (2001), p. 502
[39] Olnek (1995), p. 503
[40] Hamre & Pianta, (2005); Wentzel (1998, 2002)

Indicator: Interpersonal Skills (21st century social skills)

Interpersonal or social skills are increasingly recognized as critical to workforce and life success. While there is not enough evidence to claim a causal link between social skills and academic success, students with strong social and emotional skills often are more successful in school, possibly a result of behavior and teacher perception of attitude being included in grading practices. Strong social skills can also prevent disciplinary action, and thereby improve school performance. In contexts where more collaborative learning is promoted, these skills are more closely tied to academic performance. As a recent study asserts "perhaps social skills have a weak direct relationship with course grades in high school because most high school classrooms tend to minimize the social and cooperative aspects of learning."[41]

Interpersonal Skills encompasses the following skills and dispositions:

1. **Collaboration: learning from and working collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue; negotiate, and compromise when working in pairs or groups.** Not only are collaborative skills helpful to student performance in the K-12 system, but David T. Conley's research on College Readiness points to the skills needed to succeed at college level work and the gap that many students face in this preparation. Interpersonal and social skills, including the ability to collaborate and work with a diverse group of people are areas of needed skill development. First year college students are expected to work with others in and out of class on complex projects. There is strong evidence that this skill is an expectation of college level work.[42] In *Are they Really Ready to Work*, employers identified collaboration, work ethic and communication as among the most important skills necessary to succeed in the workplace. Only 24% of surveyed employers believe new employees with four-year college degrees have excellent skills in these areas.[43]
2. **Communication: ability to effectively communicate, convey, negotiate, or assert interests, desires, thoughts, emotions, needs, and rights. Oral, written, multi-media and nonverbal skills.** Communication skills are necessary for success in school, life, and work.[44] Research on social-emotional competencies and 21st century skills consistently report the need to develop strong interpersonal communication skills in children

[41] Farrrington (2012)
[42] Conley, D. T. (2007a), p. 17
[43] Casner-Lotto & Barrington (2006), p. 10-14
[44] Casner-Lotto & Barrington (2006), p. 23-24

and adolescents.[45] Communication is often seen as the tool through which competency development can be expressed. For example, one way for youth to show their ability to think critically is to communicate their thoughts in writing.[46] In this case, the writing, or communication skill, serves as the mechanism through which critical thinking can be evaluated. Accordingly, the development of strong communication skills is foundational to the development of many other competencies.

3. **Preventing, managing, and resolving interpersonal conflict**

   The more time spent outside of the classroom as a result of disciplinary action, whether a visit to the principal's office, suspension or expulsion, the less time a student is attending and participating in class – core academic behaviors that lead to better school performance. Additionally, conflict that is happening outside of the classroom or school can also lead to stress and lack of focus on school work, also having therefore a negative impact on school performance.

Social Awareness (as defined by CASEL) is comprised of three different components (*YDEKC has adapted the definitions of these three skills/dispositions based on local wisdom and additional research)*:

4. **Social capital:** Recognizing and using family, school, and community resources; asking for help; and
5. **Empathy:** taking the perspective of, sharing deep connection and understanding with another person**.**
6. **Diversity appreciation and cultural competence:** the set of congruent behaviors and attitudes that enable a person to work effectively in cross-cultural situations.

These skills combined make up the construct of "Social Awareness" as defined by the Collaborative for Academic, Social and Emotional Learning.[47] Joseph Zins' (2004) book, *Building Academic Success on Social and Emotional Learning: What does the research say?*[48] explicitly links the development of person-centered social skills and emotional intelligence, including social awareness, with improved academic achievement. Social awareness, in Zins' book and throughout the literature on Social, Emotional, and Intellectual learning (SEL), includes: perspective taking, empathy, appreciating diversity, and respecting others. Zins' work is informed by the CASEL framework, which situates social awareness on a developmentally appropriate spectrum.

> "In the area of social awareness, elementary school students should be able to identify verbal, physical, and situational cues indicating how others feel. Those in middle school should be able to predict others' feelings

[45] Partnership for 21st Century Skills (2011); World Health Organization (2003); Paul & Elder (2008); Catalano, Berglund, Ryan, Lonczak & Hawkins (1999)
[46] Paul and Elder (2008)
[47] Collaborative for Academic, Social, and Emotional Learning (2011)
[48] Zins, Weissberg, Wang & Walberg (2004)

and perspectives in various situations. High school students should be able to evaluate their ability to empathize with others."[49]

Social competency promotion instruction programs have been found to be effective in reducing alcohol and drug use, dropout and nonattendance, and other conduct problems. A lack of empathy may be a barrier to academic learning. Izard and colleagues (2001) found that pre-school aged at-risk children's ability to detect and label what they called "emotion cues" facilitated positive social interactions. These positive social interactions, in turn, promoted learning. Social skills have been studied more broadly in the literature on predictors of academic achievement. Defined as "socially acceptable learned behaviors that enable a person to interact effectively with others and to avoid socially unacceptable responses...[which includes] empathy."[50] College readiness research points to the skill needed by successful college students to independently recognize when they have a problem and to actively seek out help from professors, students or other sources.[51]

Sample practices and strategies that improve 21st century social skills:

- Youth Program Quality Intervention (Weikart Center for Youth Program Quality): High quality programs provide cooperative learning opportunities and support social skills development.
- Project Based Learning, Service Learning, and Experiential Learning activities
- Skill building curriculums such as: "Complex Instruction" (http://cgi.stanford.edu/group/pci/cgi-bin/site.cgi), includes attention to social status/equity issues; Committee for Children's SEL program "Second Step"
- Interactive teaching strategies including: small group discussions, active listening group exercises
- Extracurricular activities including: theatre, drama, sports, debate (DECCA), Mock Trial and Youth and Government (YMCA), model United Nations, JSA programs
- Technology programs that teach media literacy and creation (digital photography, video, music, blogging, web development, etc.)
- School-wide Positive Behavior Supports (SWPBS) or Positive Behavioral Interventions and Supports (PBIS) programs

[49] Collaborative for Academic, Social, and Emotional Learning (2011)
[50] Gresham & Elliott (1990), p. 1
[51] Conley (2007a), p. 7

Indicator: Creativity & Critical thinking (21st century thinking skills)

21st century thinking skills like creativity and critical thinking are referred to regularly in the fields of Science, Technology, Engineering and Math (STEM) as well as in Arts disciplines. Some view creativity and critical thinking as two sides of the same coin, and increasingly, there is recognition that the development of these skills is as important as the content knowledge developed in specific fields.

Creativity *encompasses the following skills and competencies:*

1. **Creative thinking:** Using a wide range of idea creation techniques
2. **Imagination:** Intellectual inventiveness used to generate, discover, or restructure ideas or imagine alternatives[52]
3. **Innovation implementation:** To act on creative ideas to make a tangible and useful contribution[53]

Critical thinking *is the ability to reason using evidence, think abstractly, make inferences, and problem solve*[54]. *Critical thinking includes the following higher-order thinking skills:*[55]

1. **Reflection:** ability to reflect on one's assumptions and thinking for the purposes of deeper understanding and self-evaluation
2. **Abstract thinking:** being able to generalize and apply broad concepts to specific problems or situations
3. **Logical and/or scientific thinking:** inductive and deductive logic
4. **Transfer of knowledge:** utilizing skills learned in prior experiences under new circumstances

Creativity: evidence of importance to school and workplace success

'Creativity' and 'innovation' are often used at the highest levels of education and workplace discourse, but that does not often translate to accountability and action around those goals – particularly within the K-12 education system. Creativity encompasses many competing definitions and associations, and many think it involves multi-faceted processes, all of which make it difficult to define and assess.

At Tufts University, an assessment of creativity for college admission predicts college success more accurately than standard admissions tests. In addition, ethnic disparities on the test are significantly reduced.[56] High levels of childhood creativity as measured by the Torrance Test of Divergent Thinking predict future creative

[52] Arts Corps (2011)
[53] Partnership for 21st Century Skills (2009), p. 4
[54] Bjorkland, D.F. (1995)
[55] Redd, Cochran, and Halle (1998)
[56] Kaufman et al (2008)

accomplishment. In fact, the correlation to lifetime creative accomplishment was more than three times stronger for childhood creativity than childhood IQ.[57] Creativity/Innovation is projected to "increase in importance" for future workforce entrants, according to more than 70 percent (73.6 percent) of employer respondents. Currently, however, more than half of employer respondents (54.2 percent) report new workforce entrants with a high school diploma to be "deficient" in this skill set.[58] A 2010 IBM poll of 1,500 global CEOs identified creativity as the No. 1 "leadership competency" of the future.[59] However, since the 1990's, one accepted measurement of creativity (the Torrance Test of Divergent Thinking) has shown falling scores of U.S. students in creativity.[60] This could be a powerful equalizer focus, as the assessment tools listed below show less racial and gender disparity/bias than IQ or academic achievement measures.

Critical thinking: evidence of the importance of critical thinking to school and workplace success

The Center for Critical Thinking has identified several academic, practical, and professional reasons why critical thinking skills are imperative in promoting a young person's positive development. Academic-oriented outcomes, specifically among adolescents, require critical thinking skills.[61] Many of the concepts woven throughout middle and high school academic curricula (i.e., democracy, geometric proofs, and trigonometry) require an ability to think abstractly and reason logically.[62] SAT and ACT tests specifically test students' critical reasoning skills[63].

Critical thinking is increasingly recognized as one the key areas required for college, work, and career success. It has been identified as the 21st century skill uniquely situated to empower individuals to "make judgments about the barrage of information that comes their way every day—on the Web, in the media, in homes, workplaces and everywhere else"[64]. Additionally, employers are specifically looking for individuals with strong reasoning and problem solving skills, the "skills that business needs," when hiring new employees.[65] The ideal critical thinker is habitually inquisitive, open-minded, flexible, and prudent in making judgments.[66]

[57] Bronson, P., & Merryman, A. (2010)
[58] Casner-Lotto & Barrington (2006), p. 10
[59] IBM (2010)
[60] Bronson, P., Merryman, A. (2010)
[61] Casner-Lotto & Barrington (2006)
[62] IBM (2010)
[63] The College Entrance Examination Board (2001)
[64] Partnership for 21st Century Skills (2008)
[65] Committee for Economic Development (2011)
[66] Facione (1990)

Programs which aim to develop young people's critical thinking skills have also examined significant gains in math, reading, vocabulary, and grade point averages for participants. These programs encourage participants, who range in age from 5 to 18, to develop reasoning and inquiry skills, discuss rationale processes, and find underlying assumptions in both their and others' hypotheses. Many After School Programs also attempt to increase Critical Thinking skills. It is important to note, however, that these ASP rarely measure academic impacts for a variety of reasons, most notably, limited access to academic records.

The challenge of measuring creativity & critical thinking

Unlike dispositions or beliefs about oneself, 21st century skills generally aren't well measured by self-report. There are other forms of assessment that can better measure student strengths in this area, though many are time intensive and require a skilled assessor or psychologist.

- **Torrance Test of Divergent Thinking:** A 90-minute series of discrete tasks, administered by a psychologist—has been taken by millions worldwide in 50 languages. Can be administered by non-psychologists with cursory levels of training with acceptable reliability. Only measures one aspect of creativity (ideation)—creative outcomes involve both divergent and convergent thinking.
- **Consensual Assessment Technique:** Panel of experts assess domain specific creativity in creative products/artifacts (i.e. a poem, a scientific experiment, a short story, etc). Related to effort sponsored by the Council of Chief State School Officers (CCSSO) through Edsteps (www.edsteps.org), an educator-led effort to collect, review and publish student work demonstrating continuums of student performance on college and career ready skills, including creativity and problem solving.
- **Teacher observations and rubrics:** Many such techniques and rubrics exists, often looking at creative process and/or products. These may be most informative to teaching and learning, but are highly subject to bias (i.e. teachers have been documented to associate 'good behavior' with creativity, contrary to the lack of such an association in creativity research).
- **Self-assessments:** Self-reports on a variety of characteristics associated with creativity have been shown to be valid and reliable assessments of creativity, at least in adults.
- **The Assessment and Teaching of 21st-Century Skills (ATC21S):** a collaborative research project sponsored by Intel, Microsoft and CISCO, includes research scientists, private, and public stakeholders. This broad international effort with diverse stakeholders has identified creativity as an important 21st century skill and is determining how to measure and teach it in high school and post-secondary settings. (www.ATC21S.org)

Sample programs and practices that develop creativity:

- Participation in high quality Arts and STEM activities
- More free time: expansive time is associated with increased creativity
- Emergent curriculum: Intrinsic motivation is positively correlated with creativity
- Inclusion of creativity strategies in core subject areas in the classroom

Sample programs and practices that build critical thinking skills:

- Using lesson plans, activities and materials which encourage students to discuss rationale leading to conclusions, consider other points of view, and analyze various reasoning processes in completing class assignments.
- **Philosophy for Children** aims to develop reasoning competencies (e.g., inferring and finding underlying assumptions) and inquiry skills (e.g., forming hypothesis and explaining) for children (K-12), and consists of weekly 2.25 hour interventions. **Effectiveness:** Consistently significant gains in math performance, reading, logic, and reasoning skills when compared to control group. **Evaluation Tools:** California Test of Mental Maturity, Metropolitan Achievement Test, and New Jersey Test of Reasoning Skills.
- **Higher-Order Thinking Skills (HOTS)** targets students performing between the 15th and 40th percentiles on reading tests. The program uses teachers trained in Socratic dialogue techniques and a computer program which reinforces the Socratic methods. **Effectiveness:** HOTS students outperformed control group in all three outcome areas: reading comprehension, GPA, and metacognition. **Evaluation Tools:** Nelson Reading Comprehension, GPA[67]
- **Think** language arts materials encourage students to discuss rationale leading to conclusions, consider other points of view, and analyze various reasoning processes. Direct, in class instruction using these materials took place two periods each week. **Effectiveness:** Students who received the program (100 hours of "thinking skills training") had an average of a 42 point increase (15 percentiles higher) on all three SAT verbal scores: vocabulary, reading comprehension, and total score, when compared to control group (no intervention). **Evaluation Tools:** SAT Verbal Scores.
- Socratic dialogue techniques, using open-ended questions so as to encourage independent cognitive development and reasoning skills in students.
- High-Quality Project Based Learning and Service Learning activities within schools or CBOs; Debate (DECCA), Mock Trial and Youth and Government, JSA programs.

[67] Facione (2002

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