TURNAROUND FOR CHILDREN

BUILDING BLOCKS FOR LEARNING

A Framework for Comprehensive Student Development

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Foreword

This paper began with a conversation about children. At Turnaround for Children, we wanted to understand how they acquire the skills and mindsets for learning. Which skills do we need to build in children for them to be successful in school? And if we know what they are, can they be taught? How does growing up with adversity impact the acquisition of these critical skills?

Brooke Stafford-Brizard set out to answer these questions. What emerged after a deep dive into scientific research from diverse fields is Building Blocks for Learning. It's a framework for comprehensive student development, grounded in science, in service of equity. It suggests a developmental continuum that starts in early childhood but doesn't stop there. It acknowledges that children don't always get the same start in life and they don't all follow the same smooth path through it. The paper contains the background and rationale to support and develop Building Blocks for Learning among all children, especially in grades K-12.[1]

We present this framework in the hope that it will serve as a platform for multiple stakeholders from the areas of policy, research and practice to build a more comprehensive approach to student development in schools, and perhaps even beyond schools. This work contributes to a number of other efforts currently underway to create a more coherent field of policy, research, practice and measurement focusing on the full set of skills and mindsets that students need to succeed in school and to thrive in the years beyond. Turnaround for Children offers this framework as a contribution to a vital collaborative endeavor to deepen and transform K-12 education. Instead of asking children to beat the odds, we can use this knowledge to change the odds for many children.

– Pamela Cantor, M.D., President and CEO, Turnaround for Children

[1] Recent terminology for these skills and mindsets within the field of education includes the labels "non-cognitive" or "non-academic." Neither of these effectively defines or describes these skills and mindsets, as many of them represent the very core of cognition (e.g., attention, memory), and they are academic in nature as they are applied in an academic setting. Therefore, these terms are not used in this paper.

The Case for Comprehensive Student Development

Currently, the U.S. education system draws from a rigorous and well-developed set of academic standards for learning, which focus on what children should know and be able to do. However, success in the classroom and beyond relies on much more than mastery of these academic standards. If academic standards are *what* students need to learn, there are also skills and mindsets that prepare and support *how* students learn. Successful engagement in the classroom and in life relies on a set of cognitive and social-emotional skills and mindsets, which are not represented in academic standards.

When students face adversity and stress in their home environment and/or fail to access a quality early childhood education, the development of cognitive and social-emotional skills and mindsets is at risk. Thus, K-12 design must ensure that instruction, supports and assessments are in place to address this potential skill gap in school-age students. Currently, many schools are designed with the assumption that critical skills for learning are in place upon entry into K-12, leaving many students without the attention or support they need to develop as learners. All students, regardless of socioeconomic background, need these cognitive and social-emotional skills and mindsets to engage and thrive in school.

When educators neither prioritize these skills and mindsets nor integrate them with academic development, students are left without tools for engagement or a language for learning. They become dependent on adult-driven procedures and routines rather than their own skills and motivation. To deliver the education all students deserve – one that prepares them for the lives they choose – the U.S. education system must address the essential elements of student development beyond academics. When students matriculate through K-12 without the skills necessary to engage in learning, they can't process the vast amount of instruction that comes their way each day and it becomes daunting, if not impossible, to stay on track. **This is the achievement gap.**

The Building Blocks for Learning represent a set of evidence-based skills and mindsets that facilitate and foster success in school and life. They have been proven by research to strongly correlate to and even predict academic achievement.[2] While there is increasing focus on these skills and mindsets within the U.S. education system, K-12 schools have yet to be designed with the effective integration of these critical components of development in mind. But they can and should be. Moreover, when educators do emphasize key cognitive and social-emotional skills, they generally do so in isolation from academic instruction, without the sound design and instructional practices that are often effectively applied toward academic development. It is well understood that students build academic skills through effective modeling, scaffolding (or support) and opportunities to apply and transfer them independently. It is also well understood that students must develop foundational academic skills before higher-order skills. Children's behavioral, social, emotional and cognitive development requires this same design, attention and support.

It is also important to consider that in K-12 schools student development occurs within the social context of a classroom through relationships between teachers, peers and other adults. Many current frameworks for student development are limited in their transactional approach between a student and academic content, which underrepresents this critical social dynamic. The majority of teachers recognize and appreciate the central role that human relationships play in student development. Even so, current school design models often overlook the role of relationships and their impact on child development.

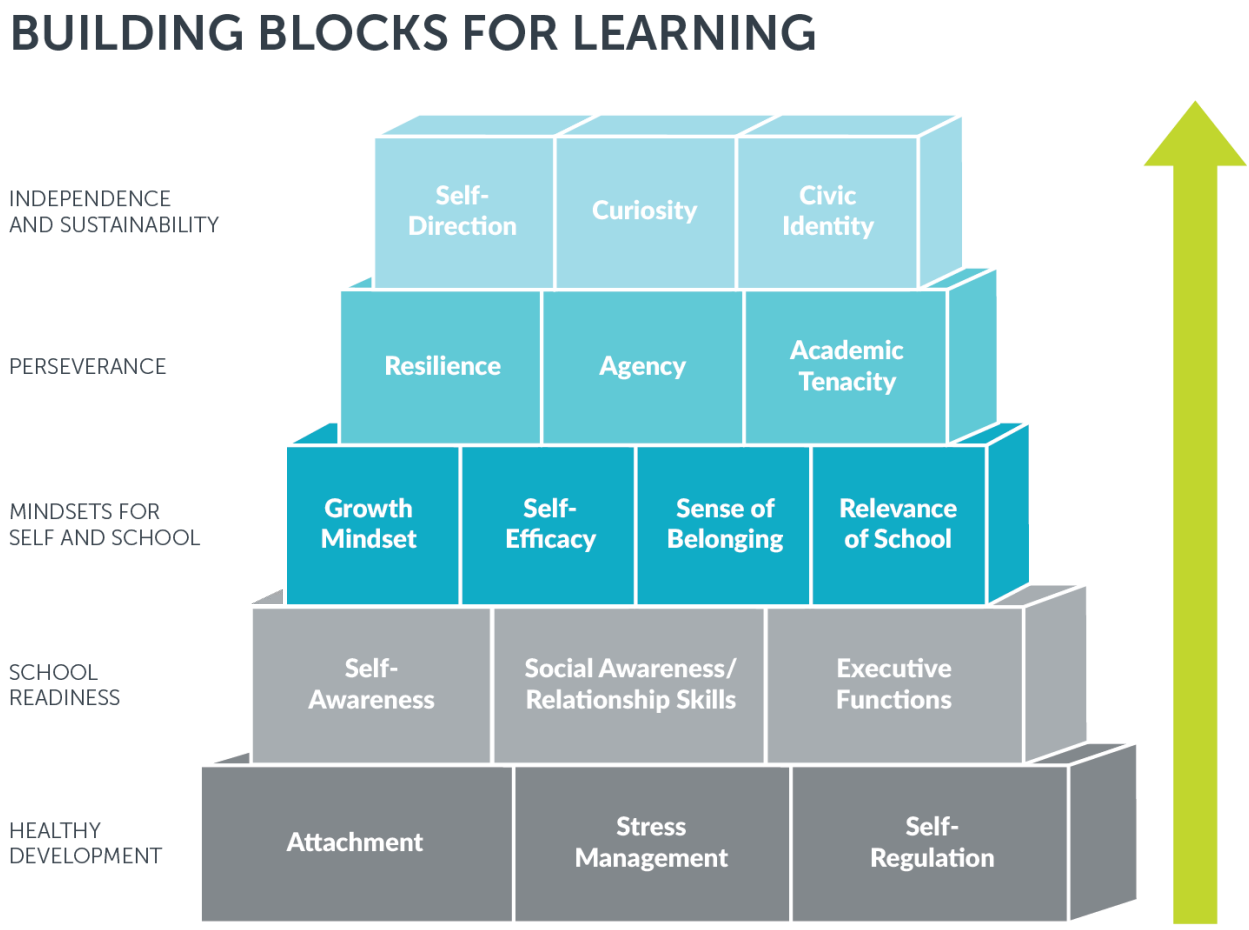
Relationships are the fuel for human development; they foster trust and belief, and are a buffer against stress. Children learn through modeling from and interaction with others, whether it be a parent, teacher, other adult or a peer. Current focus on student development rightly prioritizes the skills and knowledge that students must acquire, apply and then transfer to new contexts, yet this prioritization cannot eclipse the fact that relationships drive this learning and development. The Building Blocks for Learning reflect a set of skills and mindsets that facilitate student success in a social context through inter- and intra-personal development. These are not just skills and mindsets to prioritize in addition to academics; these are the skills and mindsets to prioritize in service of human development and academic success, as well as success in college and life. The Building Blocks for Learning are what students need to become successful, engaged and independent learners in K-12 and beyond.

[2] Each Building Block's presence in the framework is supported by research in the relevant field (i.e., cognitive neuroscience, educational psychology), which validates that the skill or mindset meets the framework criteria (detailed later in this paper). All of the supporting research is included in the references section.

The Building Blocks for Learning Framework

Turnaround for Children's Building Blocks for Learning framework represents the skills and mindsets that students use to access, acquire and apply the academic content prioritized in classrooms.

Figure 1



The skills and mindsets included in this framework were identified through the following guiding principles:

1) Alignment to the development of the **child as a "learner"** in an educational setting
2) A **measurable** and **malleable** skill, behavior or mindset – differentiating between fixed personality/character traits and "teachable" learner attributes
3) A research base demonstrating impact of the skill, behavior or mindset on **academic achievement**

Several popular skills, mindsets and traits did not meet these guidelines and are therefore not included as Building Blocks. For example, grit is considered a personality trait, and has not yet been proven to be teachable.[3] What are represented are key Building Blocks that contribute to the complex construct of grit and meet the framework's guiding principles, such as self-regulation and academic tenacity. As another example, creativity is a compelling and important skill to many, but has an inconsistent relationship with achievement in the research.[4] This might very well be due to the fact that traditional K-12

[3] Duckworth, A. L. & Eskreis-Winkler, L. (2013).
[4] Philliber Research Associates. (2013).

classrooms often do not reward creativity as much as compliance. While this is something to consider with ongoing research and practice, current evidence does not support the inclusion of creativity as a Building Block.

The Developmental Perspective

Research on each Building Block informs its placement in the framework. For some of the skills, the developmental path is clear and grounded in a robust evidence base. For example, the cognitive skills of self-regulation and executive functions have clear developmental benchmarks in early childhood and adolescence,[5] offering strong support for the age at which students should develop these skills. The Building Blocks toward the top of the framework also inform the placement of Building Blocks below, based on contributing skills and mindsets identified in the research. For example, attachment and self-efficacy are identified as skills that support the development of resilience and are therefore placed under this higher-order skill.[6] Still, much of this research falls short of suggesting a prescribed sequencing of skills and mindsets. The framework will benefit from further research that prioritizes these developmental questions. Finally, the highest-order skills in the framework represent what a K-12 education should be designed to achieve – a student's capacity to engage with him/herself and the world independently and successfully.

In the first or bottom row of the framework is a set of foundational skills that every child needs. Identified through research in the fields of neuroscience and child development,[7, 8, 9] they include the bonds that children make with adults, which provide emotional security; the skills to cope with and manage stressful conditions; and the regulation of emotion and attention to effectively engage and accomplish goals. Research has demonstrated that chronic stress and adversity, often experienced by children growing up in poverty, significantly impacts the development of areas of the brain responsible for these foundational skills.[10] As a result, many of these students do not enter school with skills for controlling impulses, focusing attention or organizing thinking in a goal-oriented fashion.[11]

The second row of the Building Blocks framework represents a set of social-emotional skills and cognitive skills that contribute to a child's readiness to engage successfully in school.[12] Together, these first two rows of skills are requisite for learning and are often prioritized in high-quality, early-childhood settings. These skills are the gateway for engaging in the classroom, connecting to teachers and peers and building the habits of success that drive academic achievement. The Building Blocks for Learning framework proposes how these gateway skills, together with a set of mindsets that students have about themselves and school, contribute to higher-order skills that help students to thrive in school and succeed in life.

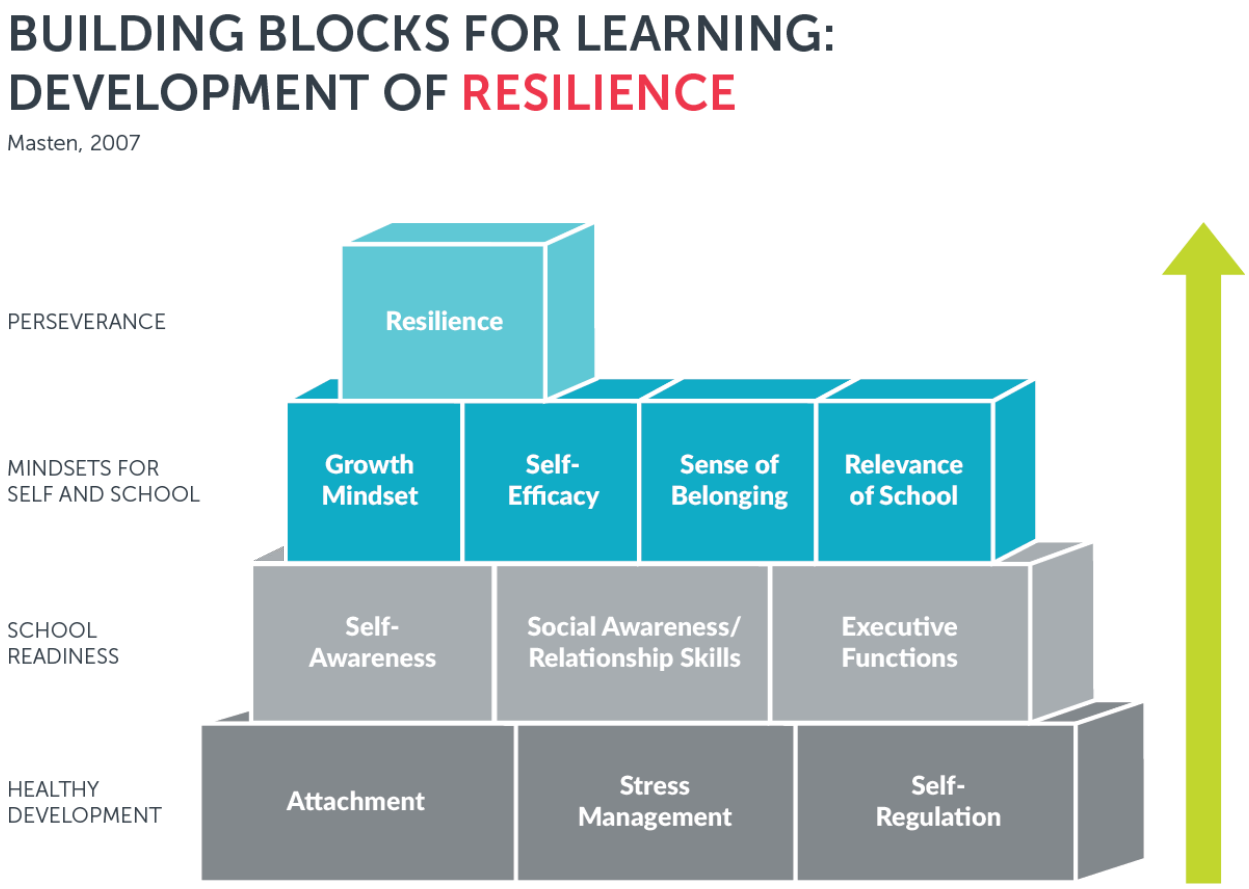
The student-held mindsets represented in the third row of the model include self-efficacy, the student's conviction that he/she is capable of success, and growth mindset, the belief that this comes with effort and hard work. Sense of belonging allows students to connect to the school community, and belief in the relevance of school reflects an understanding that education is a path toward success.[13] These mindsets are placed above the gateway skills in the framework, but this does not mean that they cannot be developed before, after or at the same time. Where and how to focus on each mindset, and in what order or sequence, remains an important empirical question that this nascent field of research will address over time. There is still much to learn regarding the developmental nature of this set of important mindsets students have about themselves and school. What is clear from research is that the gateway skills, together with the mindsets about self and school, contribute to the higher-order Building Blocks, such as resilience and academic tenacity.[14,15]

[5] Diamond, A., & Lee, K. (2011).
[6] Masten, A. S. (2007).
[7] Moss, E., & St-Laurent, D. (2001).
[8] Kraag, G., Zeegers, M. P., Kok, G.; Hosman, C., & Abu-Saad, H. H. (2006).
[9] Blair, C. & Diamond, A. (2008).
[10] Blair, C. & Raver, C. C. (2012).
[11] Blair, C. & Raver, C. C. (2012).
[12] As a note, many researchers include executive functions – including inhibitory control, flexibility and memory skills – as part of the construct of self-regulation, but as Diamond and Lee note, "more complex EFs include problem-solving, reasoning and planning." Executive functions are a vital set of skills for accessing, processing and storing information, and develop with more complexity as a child develops, with two significant benchmarks in early childhood and adolescence. Due to the complexity and progression of these skills in relation to development, they are separated from the umbrella concept of self-regulation.
[13] Farrington, C. A., et al. (2012).
[14] Masten, A. S. (2007).
[15] Dweck, C., Walton, G. M., & Cohen, G. L. (2011).

The top two rows of Building Blocks represent the skills that help students persevere through school toward commencement despite the barriers and adversity they might face. This includes resilience, which allows students to recover and bounce back from harmful conditions that could derail their success, and to build protective factors to cope with future challenges and adversity. It also includes agency, or the ability to act with autonomy and advocate for oneself in service of individual values and goals. And finally, it includes academic tenacity, which helps students persevere toward long-term goals. At the top of the framework, the highest-order Building Blocks demonstrate the skills and mindsets that allow students to chart their own course in life and pursue that course with independence. Self-direction, curiosity and civic identity capture (respectively): how students identify and pursue goals successfully, how they use the world to accomplish goals with inquiry and flexibility, and how they define their own contributions to the world.

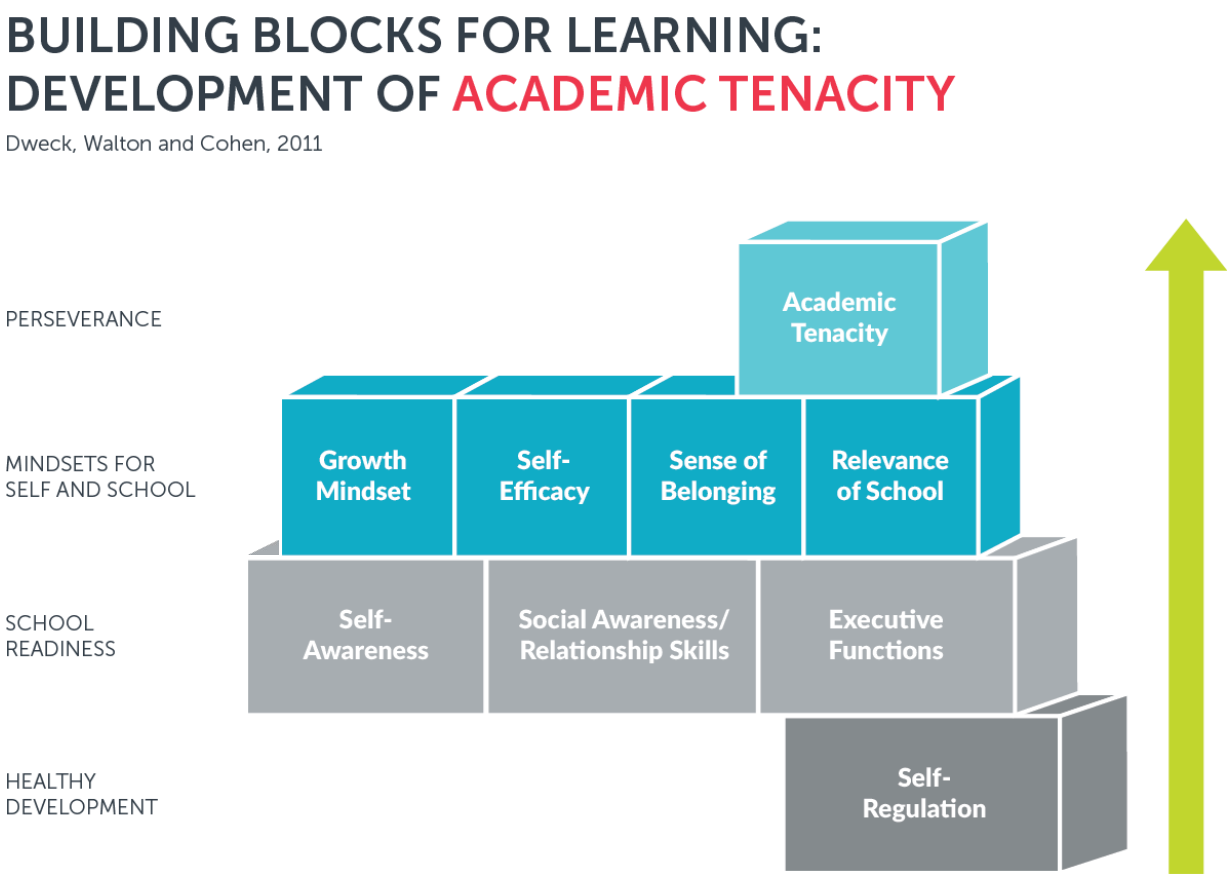
While the foundational Building Blocks do not comprehensively define the higher-order skills, they are powerful and consistent contributors to them, and therefore support the developmental perspective of the model. As an example, Figures 2 and 3 illustrate the lower-order Building Blocks that contribute to the development of resilience and academic tenacity, according to the research defining these skills.[16, 17] Ongoing research targeting the developmental connection between specific foundational and higher-order Building Blocks will contribute to the development and validation of this framework.

Figure 2



[16] Masten, A. S. (2007).
[17] Dweck, C., Walton, G. M., & Cohen, G. L. (2011).

Figure 3



Next Steps

There are numerous opportunities to test and strengthen this framework for student development and steps to take within the areas of research, practice and policy.

Research

As noted above, this framework provides a deep set of empirical questions and the platform for a rich research agenda that will contribute to the ongoing validation of the framework and the developmental connections within it. New learnings are surfacing from fields such as neuroscience almost every day, contributing to an understanding of neural development and diversity, the neurobiology of stress and adversity, and how all of this impacts learning. Findings from this and other relevant fields, such as educational, positive and social psychology, will provide critical contributions to this developing framework. Moreover, research within and between each of the Building Blocks will help to answer important questions regarding age, gender and race as they relate to the acquisition, application and perception of these skills and mindsets.[18] Further research will also inform which skills can or must be developed toward mastery and which fall on a continuum of performance.

[18] Even if students demonstrate key Building Blocks, studies in a number of urban districts have demonstrated that this can be attributed differently, often negatively, in students of color (Crenshaw, et al, 2015). For example, while a white student may be applauded for demonstrating agency (e.g., voice and self-advocacy), her African-American peer may be seen as "rowdy" when exhibiting the same behaviors.

While there is evidence to support the malleability of the Building Blocks,[19] researchers and practitioners invested in this framework will want to address:

- How to teach and strengthen these skills and mindsets effectively within school settings and other settings that address children's development, such as after-school, mentoring and alternative education programs
- How they should be sequenced, promoted and overlap in their implementation
- What level of demonstration or mastery is required for effective development of the Building Blocks (and how this differs depending on the skill or mindset)
- Effective integration with academic development and pedagogical practice (e.g., personalization, differentiation), prioritizing alignment to the Common Core State Standards and leveraging the powerful connection to process skills outlined in these standards
- How the framework can inform the prioritization, sequencing and development of skills for career success in workforce readiness programs

Research can also contribute to the development of crucial measurements of these skills and mindsets. The most common and accessible form of measurement for most Building Blocks is a self-report, which presents a number of threats to validity. Informant reports from parents, teachers or peers are also possible, as are behavioral tasks, which can be costly and time-consuming. A number of researchers have suggested a composite measure, including questionnaires and behavioral tasks, which should be pursued with attention to availability of resources (e.g., time and money) in schools. As all of these options develop, there must be strategic focus on a commitment to effectively embedding these measures into school design so there is allocated time for their administration, efficient analysis and effective use of the data as a formative tool for addressing student needs in these domains.

While the empirical questions and areas for development around the Building Blocks for Learning are significant, the opportunity to establish a rigorous and developmental framework for these skills and mindsets with deep connection to both academic and personal growth and achievement has the potential to dramatically improve the education we provide for students across the country.

Practice

As emerging research informs this framework, the field of practice must use these findings to prioritize effective and integrated development of the Building Blocks. Today, the gap between theory and practice regarding the development and support of these skills and mindsets remains large. Practitioners will provide critical insights toward the successful identification and implementation of the Building Blocks within the complex environments of districts, schools and classrooms. Stimulating, supporting, documenting and measuring innovation in districts and schools is a critical piece of the work ahead. This involves identifying and codifying practice that effectively addresses student development and its integration with academics, particularly in environments with high concentrations of students facing adversity.

The work of identifying and developing effective practice with regard to the Building Blocks for Learning must incorporate all areas of school design including:

- Leadership and teacher preparation, professional development and evaluation
- Support and guidance for effective school culture and climate
- Design and implementation of curriculum, assessments and pedagogical supports (e.g., stress reduction and self-regulation through mindfulness and contemplative practice)
- Systems of support and intervention for students

Key learnings from the Building Blocks framework, put into practice, will contribute to the strengthening and reinvention of K-12 classrooms and all settings that focus on preparing students for success in school and in life. Attention to the full continuum of student development from early childhood to adulthood will also inform the creation of developmentally appropriate resources to support acquisition and application of the Building Blocks. Research and practice have demonstrated that many individuals, particularly those experiencing the stress and adversity of poverty, do not acquire

[19] Malleability is one of the criteria for inclusion in the framework, and is supported in the research base identified for each Building Block.

these skills and mindsets at the developmentally appropriate age.[20] In addition, neuroscientific research continues to demonstrate critical periods where neural development is possible, such as the teenage years.[21] Just as the challenge of learning to read in older students and adults has been addressed through age-appropriate, engaging materials and instruction, the same can be done for the development of skills such as self-regulation and executive functions.

Policy

Finally, policymakers have an opportunity to support the impact of both research and practice by prioritizing the development of the Building Blocks as a core component of a successful district and school. Setting policy to establish the relevant resources, supports and accountability at the federal, state and local levels will reinforce a paradigm shift in K-12 settings and fuel innovation and progress in the areas of research and practice. Furthermore, while the Building Blocks for Learning offer a universal perspective on comprehensive student development (i.e., every child regardless of their background must develop these skills and mindsets), research supports the tremendous impact this framework can have on high-need populations, such as students with learning and behavioral issues. Federal, state and district policies that incentivize and support environments and instruction to develop the Building Blocks for Learning will address the large population of students, many from high-poverty backgrounds, who are currently moving through the K-12 system without the gateway skills for learning. As stated earlier, the absence of cognitive and social-emotional skills, such as emotional regulation, attention and memory, that are core to effective engagement in learning, contributes significantly to ongoing challenges and deficits in academic development and to the achievement gap. Policy can play a powerful role in this innovative and promising strategy for addressing that gap.

Conclusion

There may be great momentum in the field of work focusing on these components of student development, yet many of the domains are neither aligned nor integrated, thereby contributing to competing vocabularies, taxonomies and confusion regarding what to prioritize and when. Furthermore, this field remains disconnected from academic instruction, often rendering these skills and mindsets supplemental or ancillary in the K-12 classroom instead of prioritized and integrated to drive comprehensive student development as they should be. The Building Blocks for Learning framework presents an opportunity to launch and prioritize a common framework for the development of cognitive and social-emotional skills and mindsets within K-12 schools, which interweaves with academic development and builds toward independence and success for all students.

[20] Blair, C. & Raver, C. C. (2012).
[21] Steinberg, L. (2005).

Acknowledgements

The Building Blocks for Learning framework was developed through close collaboration with Turnaround for Children's team of leaders and practitioners, and was informed by the organization's insights as well as its efforts to address the adverse effects of poverty and stress on child development and learning in K-12 schools. I am extremely grateful for the vision this organization has brought to the K-12 space and for their pioneering role in redefining the source of the challenge that our students growing up in high-poverty environments face. I extend particular gratitude to Turnaround's President and CEO, Dr. Pamela Cantor, who has not only been a critical thought partner in this work but has dedicated unparalleled attention and resources to the effective use of scientific research within her organization. This framework was also developed with guidance and feedback from a number of external thought partners from the fields of research and practice. My sincere gratitude to these external partners, and to the many individuals at Turnaround for Children who contributed their thoughts and feedback to this developing body of work.

About Turnaround for Children

Turnaround for Children acts as a catalyst for change by raising awareness about and addressing the challenges that affect any school facing adversity, particularly those in high-poverty communities. Turnaround develops tools and strategies, grounded in science, that cultivate a safe environment, reduce stress, increase readiness to learn and accelerate student development and academic achievement. Please visit **www.turnaroundusa.org** to learn more.

About the Author

K. Brooke Stafford-Brizard, Ph.D. is a Senior Advisor to Turnaround for Children, supporting the integration of cognitive and social-emotional skills into school and district design through a connection between research, policy and practice. She also focuses on the development of knowledge management systems to support effective design implementation and improvement. Stafford-Brizard began her career as a teacher with Teach for America at an intermediate school in the Bronx. Following her doctoral work at Columbia University, Stafford-Brizard worked at the New York City Department of Education in the division of teaching and learning, as well as the Alternative High Schools District. She is a Pahara-Aspen Education Fellow and a member of the Aspen Institute's Global Leadership Network.

Appendix

Working Definitions of Building Blocks for Learning

Academic Tenacity
The beliefs and skills that allow students to look beyond short-term concerns to longer-term or higher-order goals, and withstand challenges and setbacks to persevere toward these goals.[22]

Agency
A student's individual decision-making and autonomous actions.[23]

Attachment
A deep and enduring emotional bond that connects one person to another across time and space.[24]

Civic Identity
A multifaceted and dynamic notion of the self as belonging to and responsible for a community or communities.[25]

Curiosity
The desire to engage and understand the world, interest in a wide variety of things and preference for a complete understanding of a complex topic or problem.[26]

Executive Functions
The cognitive control functions needed when one has to concentrate and think, when acting on one's initial impulse would be ill-advised. Core executive functions include cognitive flexibility, inhibition (self-control, self-regulation) and working memory. More complex executive functions include problem-solving, reasoning and planning.[27]

Mindsets [28]

Growth Mindset
Wherein students ascribe to the belief: *my ability and competence grow with my effort*.

Self-Efficacy
The perception that one can do something successfully.

Sense of Belonging
A sense that one has a rightful place in a given academic setting and can claim full membership in a classroom community.

Relevance of School
A student's sense that the subject matter he or she is studying is interesting and holds value.

Relationship Skills
The ability to establish and maintain healthy and rewarding relationships with diverse individuals and groups. This includes communicating clearly, listening actively, cooperating, resisting inappropriate social pressure, negotiating conflict constructively and seeking and offering help when needed.[29]

[22] Dweck, et al., 2011
[23] Toshalis, E. & Nakkula, M.J. (2012)
[24] Ainsworth, M. D. S. (1973).
[25] Rubin, Beth C. (2007).
[26] Goff, M., & Ackerman, P. (1992).
[27] Diamond A, Lee K. (2011).
[28] Farrington, et al., (2012).
[29] Payton, J., Weissberg, R. P., Durlak, J. A., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B., & Pachan, M. (2008).

Resilience
Positive adaptation during or following exposure to adversities that have the potential to harm development: (a) developing well in the context of high cumulative risk for developmental problems (beating the odds, better than predicted development), (b) functioning well under currently-adverse conditions (stress-resistance, coping) and (c) recovery to normal functioning after catastrophic adversity (bouncing back, self-righting) or severe deprivation (normalization).[30]

Self-Regulation
Regulation of attention, emotion and executive functions for the purposes of goal-directed actions.[31]

Self-Awareness
The ability to accurately recognize one's emotions and thoughts and their influence on behavior. This includes accurately assessing one's strengths and limitations and possessing a well-grounded sense of confidence and optimism.[32]

Social Awareness
The ability to take the perspective of, and empathize with, others from diverse backgrounds and cultures, to understand social and ethical norms for behavior, and to recognize family, school and community resources and supports.[33]

Stress Management
Constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person.[34]

Self-Direction
A process in which learners take the initiative in planning, implementing and evaluating their own learning needs and outcomes, with or without the help of others.[35]

[30] Masten, A., 2007.
[31] Blair, C., & Ursache, A. (2011).
[32] Payton, J., Weissberg, R. P., Durlak, J. A., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B., & Pachan, M. (2008).
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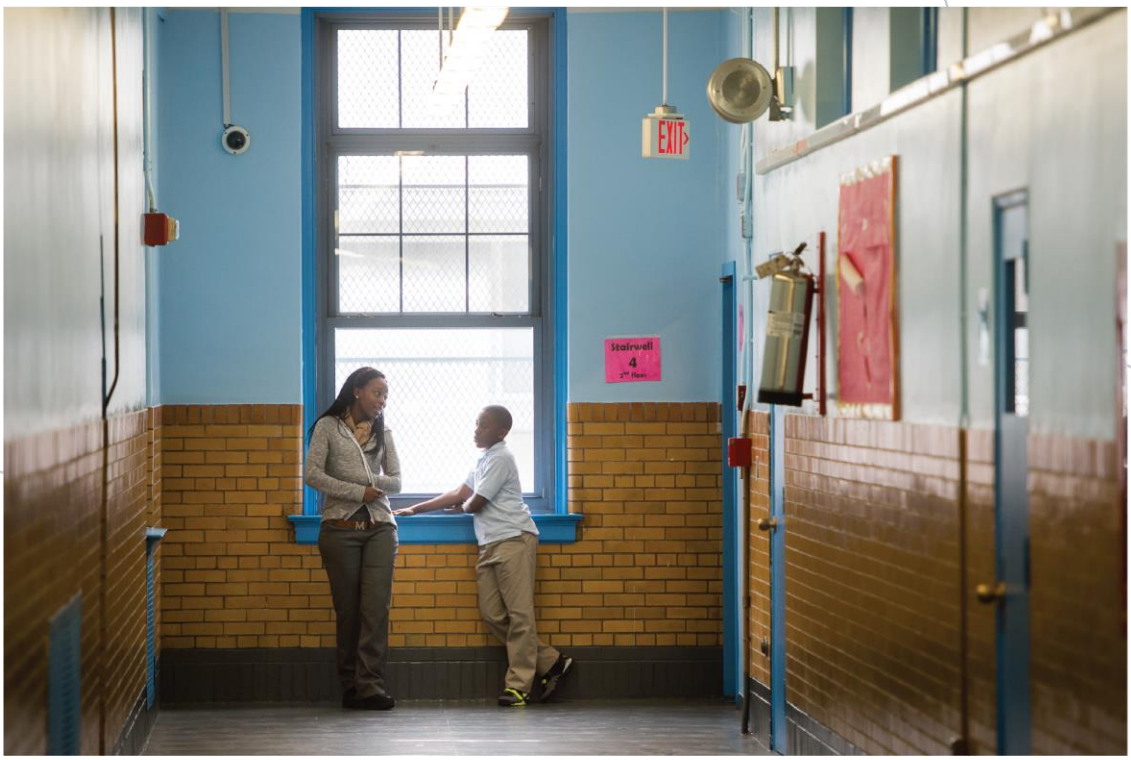
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