
[Basic pre-requisites for learning](#)

BRIEF 1

[Child development](#)

[Cognitive development](#)

To be ready to learn, children and youth may need support to achieve good physical and psychological health, develop foundational skills (both cognitive and non-cognitive), and to regularly attend school.

There are certain pre-requisites for learning that, if not met, can hinder students' abilities to benefit from schooling. One important issue is physical health, which is supported by preventing and treating illnesses, providing good nutrition, and ensuring adequate time for sleep, exercise, and playful recreation. Students may also need support to achieve improved psychological health and resilience, particularly in the face of personal and family stress and crises. Non-cognitive skills and character attributes, including self-regulation, perseverance, and the ability to cooperate with others, can strongly impact learning and school achievement. Students also need to have certain foundational cognitive skills, particularly knowledge of the language of instruction and age-appropriate abilities in literacy, numeracy, and increasingly digital literacy. Finally, it is important that students actually attend school regularly and have adequate study time. While poverty and [social inequities](#) put students at greater risk of not achieving these pre-requisites, even students from more advantaged backgrounds may need help to establish stronger basic foundations for learning.

Issues and Discussion

Physical health: Physical health strongly affects the ability to attend school and focus on learning, as well as shaping cognitive capacity itself. The foundation of physical health begins from conception, when pregnant mothers need good healthcare themselves, good nutrition, freedom from addictive substances, and protection from toxic stress (Benton, 2010; Grantham-McGregor et al., 2007; Shonkoff and Garner, 2012; UNICEF, 2008). Problems with any of these areas during pregnancy or early childhood can affect the present and future physical health and learning of the child including persistent fatigue and issues with vision, hearing, and brain development (Benton, 2010; Grantham-McGregor et al., 2007; Ladd, 2012; UNICEF, 2008; WFP and UNICEF, 2005). The importance of good nutrition continues after birth, and research suggests that even some children from food-secure families may not be eating the kinds of healthy foods that support physical health and mental focus (Benton, 2010; TFA, 2011).

Other detrimental influences on physical health include poor hygiene and sanitation, inadequate disease prevention, environmental pollutants such as lead contamination or poor air quality, and inadequate access to healthcare (WFP and UNICEF, 2005; WHO and UNEP, 2010). Primary and

secondary students who face these threats to their health can experience frequent illnesses, increased absences, reduced attention, compromised ability to learn from classroom instruction, and difficulties being involved in activities with their peers (AW and HSC, 2015; Ladd, 2012; LMTF, 2013); Lewin, 2015; UNICEF, 2012) WFP and UNICEF, 2005; WHO and UNEP, 2010).

Adequate rest is also important to physical health and learning; the need for sleep is greatest in early childhood, but even adolescents still need at least 9 hours of sleep at night (TFA, 2011). Insufficient rest (caused by anything from children's household responsibilities, to child labour practices, to inadequate parental enforcement of bedtimes) has a negative effect on memory and retention, as well as causing other health problems (Orazem and Gunnarsson, 2003; TFA, 2011). Finally, children and adolescents need plenty of exercise and playful recreation. This is necessary for healthy physical development. It also enables concentration on more sedentary learning tasks, promotes socio-emotional development, enhances positive life skills and identity development, and builds communication, negotiation, and leadership skills (LMTF, 2013; TFA, 2011; UNICEF, 2004, 2012).

Psychological health and resilience: Psychological health, also called socio-emotional or mental health, may include such factors as the ability to be resilient in the face of stress and setbacks, a belief in one's own positive potential, autonomy in shaping aspects of one's own life, a sense of self-efficacy or the ability to accomplish a task or goal, and a feeling of social connection with others (LMTF, 2013; Rosen et al., 2010; WHO 2001). These psychological factors are shaped both by genetically inherited factors and by past and present physical conditions and social experiences, beginning from the prenatal period and extending throughout life (Benton, 2010; Shonkoff and Garner, 2012; WHO, 2001). Psychological factors can strongly shape physical health and social functioning, as well as cognitive development and learning achievement (LMTF, 2013; Rosen et al., 2010; Shonkoff and Garner, 2012; TFA, 2011; UNICEF, 2012; WFP and UNICEF, 2005). There are many different types of psychological disorders with a variety of causes, including chemical imbalances in the brain, abusive relationships, and particular traumatic events such as the effects of violent conflict and natural disasters (Shonkoff and Garner, 2012; WHO, 2001). Family conflict, abuse, and neglect affect a large number of children and can have life-long effects, including on school performance (WHO, 2001). Social conditions can also have a psychological impact, such as the experience of prejudice within the school or in wider society, which can affect students' belief in themselves and their ability to learn, among many other negative consequences (NASP, 2012; Shonkoff and Garner, 2012).

Non-cognitive skills and character attributes: Non-cognitive skills refer to a variety of aspects of personality or character which can be shaped and developed, including both intra-personal and inter-personal skills (Kautz et al., 2014; LMTF, 2013). There is as yet no universal agreement on which non-cognitive skills matter most for learning and academic achievement. However, some of the intra-personal skills that appear to be influential include self-regulation and self-discipline, conscientiousness and dutifulness, being motivated to achieve goals, perseverance and 'grit', having a 'growth mindset' regarding one's own capacity to improve through effort, and reflecting on one's own learning (Kautz et al., 2014; LMTF, 2013; Rosen et al., 2010; UNICEF, 2012). There are also inter-personal skills which appear to have a positive effect on learning, including agreeableness and cooperative behaviour, sharing and altruism, empathy for others, and the ability to maintain relationships (Kautz et al., 2014; LMTF, 2013; Rosen et al., 2010; UNICEF, 2012). Both intra- and inter-personal non-cognitive skills are shaped by aspects of physical health and nutrition, psychological health, and social and cultural conditions (Benton, 2010; NASP, 2012; Shonkoff and Garner, 2012; WHO, 2001). Development of non-cognitive skills begins in early childhood, and 'poor skills and habits developed and internalized early on may lead to less desirable educational and economic outcomes in adulthood, compounding cognitive or academic problems' (Rosen et al.,

2010: 1).

Cognitive skills: At each stage of schooling, students need a certain foundation of cognitive skills in order to enable them to continue learning with their peers (Kautz et al., 2014; LMTF, 2013; UNICEF, 2012). Specific cognitive skills must be built on a foundation of healthy cognitive development, which is strongly affected by physical health and nutrition, and by psychological health, especially in the early years (Benton, 2010; Grantham-McGregor et al., 2007; Shonkoff and Garner, 2012). On that foundation, children and youth must progress alongside their peers in the development of increasingly sophisticated language, literacy, and numeracy skills, among others, in order to continue to have true access to each successive level of instruction.

One fundamental cognitive skill is knowledge of the [language of instruction](#). Language and vocabulary development begins in infancy and progresses rapidly through early childhood (Grantham-McGregor et al., 2007). When children have the added task of learning a new language to understand their teacher and the learning materials, they will need extra support to avoid exclusion from the learning process (Ball, 2011).

On a foundation of spoken vocabulary and comprehension, children must develop literacy: the skills of book and print awareness, letter recognition, and phonemic awareness during the [pre-school years](#); the early literacy skills of decoding and comprehension in primary school; and the higher-order literacy skills they will need in order to shift from 'learning to read' to 'reading to learn' (Kim et al., 2016; LMTF, 2013; UIL, 2017; UNICEF, 2012). Numeracy skills are also an essential foundation to be developed, beginning in early childhood and built upon each year, as students progress through increasingly difficult areas of study requiring mathematical, scientific, and analytical skills (Cross, Woods and Schweingruber, 2009; LMTF, 2013, UIL, 2017; UNICEF, 2012). Finally, [digital literacy](#) (the ability to use computers and other digital devices) is increasingly a skill that affects the ability to participate in formal instruction, lifelong independent learning, the workforce, and society (Karpati, 2011).

Regular attendance and study time: A final prerequisite for learning is regular school attendance and adequate time for study. Attendance can be affected by poor physical or psychological health as well as by family circumstances. These may include homelessness or migratory patterns, ineffective parental organization and oversight, and an over-reliance on children's labour for household work or for economic contribution (AW and HSC, 2015; Ladd, 2012; Lewin, 2015; Orazem and Gunnarsson, 2003; TFA, 2011; WFP and UNICEF 2005). These same factors can impact study time, with children not having enough free time, with adequate lighting, to review what they have learned in school (Orazem and Gunnarsson, 2003; UNDESA, 2014).

Inclusiveness and Equity

Children who do not have a strong foundation in these basic pre-requisites cannot learn on an equal footing alongside their peers. Schools should not be tasked with solving all of these problems: These conditions must be met from infancy, and the failure to do so can have lasting negative effects no matter what the quality of later interventions (Grantham-McGregor et al., 2007; Ladd, 2012; UNICEF 2012).

Community-based programmes: A variety of community-based and social protection programmes may be needed to ensure that all children have these basic pre-requisites for learning. Options include reproductive, maternal, new-born and child health interventions, [parenting education programmes](#), high quality [early childhood care and education programmes](#), initiatives to enhance

[parental and community support to education](#), community-level efforts to improve the literacy ecology, cash transfer programmes, and broader interventions to improve family livelihoods (Engle et al., 2007; Ladd, 2012; UNICEF 2012) . There may be a need to address environmental issues that cause poor health and affect child development (WHO and UNEP, 2010).

School-based programmes: School-based programmes can also play an important role in conjunction with community-based efforts. School feeding programmes and initiatives such as school gardens can increase access to healthy food and improve understanding of healthy eating (WFP and UNICEF, 2005). Schools can provide direct access to health services (dental, vision, hearing, and general well-child check-ups; vaccinations; treatment for parasitic infections), education about health and hygiene practices, and psycho-social counselling, and increased time for physical activity (TFA, 2011; UNICEF, 2004, 2012; WFP and UNICEF, 2005). Schools also need to provide additional support to children who are not developing in the language of instruction, literacy, or numeracy at the same pace as their peers (LMTF, 2013).

Finally, measures may be necessary to simply get children into school and ensure that they attend regularly. A range of options have been employed, including imposing legal obligations and consequences on parents, offering families or students cash transfers conditional on school attendance or school achievement, addressing other root causes such as poor health or family instability, and increasing extra-curricular learning opportunities for disadvantaged students (AW and HSC, 2015; Ladd, 2012; Lewin, 2015). Additional strategies that can be explored include building schools that are closer to students' homes, improving transport, offering free tuition and uniforms, and improving the quality of schools to increase demand for education (Lewin, 2015; UNICEF, 2012).

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