COMBATING EARLY CHILDHOOD ADVERSITY:

REACHING VULNERABLE CHILDREN AT SCHOOL

TOM BOYCE | BRYAN KOLB | TERESA VANCISE | MARGARET CASEY
ABOUT CHANGE MAKERS

Change Makers convenes CIFAR fellows and leaders across government, business, education, civil society and the creative sector, through both in-person engagements and virtual experiences, to share new insights into addressing complex issues at a systems level. By creating meaningful opportunities for productive, multi-directional learning and networking, the Change Makers series aims to catalyze new ways of thinking and acting that can drive change in communities that matter most.

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TOM BOYCE
Early Adversity and the Developing Brain: The Roles of Sensitivity, Social Orders, and Schools

The brain is a highly complex and plastic organ which undergoes rapid development before and soon after birth. The increased complexity of neuronal and brain circuitry development includes specialization of the cortex, development of language and speech capabilities, and development of higher cognitive functions (e.g. working memory and mental imagery).

Early brain development impacts long term health and well-being. While much of brain development happens during first 1000 days of life, the changes can have implications for the life course. The early years are therefore a sensitive period for intervention if a child has been exposed to negative early life experiences. This points to the critical importance of intervening early, as the rate of return on interventions decreases with age.

Physical and mental health is partitioned by socioeconomic status (SES). Differential exposures to toxins, diet, health care, housing, adversity, stress, violence etc. in early life can alter health and development of children in different SES settings. Children living in poverty for example tend to have far greater exposure to these early stressors than middle income children, and studies have pointed to a clear association of children with lower SES backgrounds having poorer reading performance.

Individual differences impact how children react to their experience and environment. There is tremendous individual variation in how children respond to stressors and adverse events but also to supportive social environments. Given the heightened sensitively of certain children, in both positive and negative directions, and given that exposures to stress can have impacts on life-long health and well-being, focus should be placed on these sensitive children in educational settings.

The orchid-dandelion child hypothesis offers suggestions for how to develop effective interventions. In research experiments, children (typically shyer) who were highly sensitive to their environment do great in more predictable environments or where there is a high level of support but sustain higher rates of negative outcomes in unsupportive, adverse settings. These children are referred to as orchids. The outcomes for them therefore greatly depend on their social environment. There are some children that seem to be more resilient to stressful challenges and are lower in biological reactivity to their social environment. These children are referred to as dandelion children as they can thrive in any environment that they are planted.
BRYAN KOLB
Plasticity in the Developing Brain

The brain undergoes enormous growth in the first years of life. It’s not just the events that happen after birth that impact a child’s development and well-being but events that happen before and during pregnancy can have significant impact. The environment can greatly influence brain development. Animal studies have been powerful tools to explore the behavioral and structural changes that occur to the brain in response to various forms of stimuli. Positive factors contributing to brain development include diet and tactical stimulation, for example, which can contribute not only to changes in circuits within the brain, but also to the emotional and social behaviors of a child. Negative factors impacting brain development may include preconception stress (both maternal and paternal), stress during pregnancy, and deprivation (e.g. poverty). These factors can contribute to fewer connections in offspring brains, and reduced cognitive, linguistic and motor abilities. These changes in brain and behavioral development are the result of changes in gene expression and epigenetic effects. Intervention after negative experiences is possible however it is best to do so early to have the greatest chance of success.

TERESA VANCISE
Reaching vulnerable children at school: An educator’s perspective

Identifying high-risk students can help create opportunities for learning success. Elementary school classrooms may have up to 80% of students with various complex needs and backgrounds such as high adverse early childhood experiences, fetal alcohol syndrome, second language learners, severe behaviour/ADHD, learning disabilities, cognitive delays, and autism spectrum disorder. These backgrounds can create different impairments such as attachment, affect regulation, dissociation, behavioural, cognition, and self-concept, and therefore present a barrier to learning. It thus becomes important for an educator to understand their classroom’s composition and rationale behind it in order to create supportive learning environments. Educators need to have a strong understanding of current research in order to reach the most vulnerable children successfully. The brain exhibits a high degree of plasticity which can create an opportunity for intervention to promote better learning outcomes amongst the most high risk students. Interventions need to move beyond a classroom to the whole school system. The education system should operate like an orchestra – with many players, all must be in tune, be highly skilled, have the same information and sense of understanding on research informed interventions to create change.

MARGARET CASEY
Approaches to Guide Practice

There is a paradigm shift happening in developing interventions that reach the most vulnerable children. The shift is moving from “what’s wrong with you” to “what’s happened to you”. That is, we are starting to look beyond behaviour to applying a more trauma-focused lens to understand a child’s experience and needs. However, it is important not to assume that all behaviors are due to trauma exposure or adverse experiences and to be curious and find out the true underlying issue.
Interventions grounded in scientific research will create the best opportunities for academic success. A paradigm shift needs to occur for developing interventions in which educators have a solid understanding of the current research on child and brain development and use science to enhance best teaching practices, improve learning for all children and to create safe learning environments for kids. Getting leadership engaged to support this integration is critical.

Research-informed frameworks have been successful in translating science to practice in education for reaching at risk kids. ARC (Attachment, Self-Regulation and Competency) is a research-informed framework that recognizes factors that can derail development and works with children, families and systems to build or rebuild healthy development. It focuses on creating safe environments first in order to be able to drive effective teaching. In addition to ARC, other frameworks have also been successful in applying developmental science to education. In some cases, multiple frameworks can be applied together, such as combining ARC with Neurosequential Model of Therapeutics (NMT).

Caregiver affect management is crucial when implementing interventions that reach the most vulnerable children. Support also needs to be provided to front line workers caring for at risk children as there can be secondary traumatic stress as a result of caring for them.

Interventions need not happen in silos. Team work is important and should include professionals from various aspects of the education system with a common language in place.

INNOVATION IN ACTION: INSIGHTS FROM PARTICIPANT-LED DISCUSSION

- Major challenges in developing effective interventions include:
  - our current funding structures;
  - lack of understanding of key research areas such as the impact of prenatal stress and hierarchies in school age kids;
  - retaining and sustaining educators that truly understand the issues at hand; staff turnover
  - obtaining systemic buy-in from senior leaders across sectors, including government, for implementing change;
  - the lack of understanding by students in how their backgrounds of adversity can impact their futures;
  - operating in silos and the inherent lack of information sharing; poor accountability and monitoring systems;
  - engaging with parents who they themselves experienced early childhood adversity;
  - the role of and boundary setting for physical contact, ensuring interventions address a child’s emotional and physical needs.

- Opportunities for improved interventions included:
  - better preparing teachers to deal with students with complex needs;
  - identifying how best to shift investments to where it counts to enable the best outcomes for children;
  - engaging educators, parents, the greater family structure (grandparents, foster parents), youth themselves and others that are looking to influence change;
  - having a strong understanding of the gaps in research and practice; having cross-disciplinary conversations;
• developing a common language across parents, organizations, health care etc. but also a shared understanding of the importance of translating research into action;
• embracing the notion of developing interventions based on what’s happened to you vs what’s wrong with you;
• enabling organizations to take risks in integrating new learnings and turning them into practice;
• developing tools to teach children soft skills (e.g. ability to regulate emotions)
• recognition that each child is different and that might therefore react differently to interventions
• dissemination of the knowledge developed over the years to reach as wide an audience as possible in order to lead to better outcomes for all.

• A number of best practices for reaching at risk youth include models from:
  • Neurosequential Model of Therapeutics, Adverse Childhood Experience Studies, ARC (Attachment, Self-Regulation and Competency)