

# THE SCIENCE OF SUMMIT

## A CENTURY OF RESEARCH BEHIND SUMMIT LEARNING

More than 100 years of learning science, psychology, and workforce development research informs Summit Learning — our personalized approach to teaching and learning inspired by the vision to equip every student to lead a fulfilled life. We translate the science of learning into the intentional design of our schools to achieve student success in four outcomes: Cognitive Skills, Content Knowledge, Habits of Success, and Sense of Purpose.

This comprehensive research timeline includes a diverse range of perspectives and groundbreaking works that have been formative influences on Summit Learning and each of our student outcomes.



**Cognitive Skills**

Essential and transferable lifelong skills

**Content Knowledge**

Understanding and application of fundamental content

**Habits of Success**

Mindsets and behaviors that support well-being

**Sense of Purpose**

Self-awareness and pursuit of interests and goals

1901

John Dewey advocates for a community- and child-centered curriculum that offers socially-based experiences aligned with rigorous content standards

1960

Jerome Bruner makes the case for a spiral curriculum that starts in early childhood

1961

Everett Rogers presents a five-point framework for how innovations are adopted by users over time

1968

Benjamin Bloom argues that all students should be given the necessary time and opportunities to master content before moving on to learn new content

1969

Jean Piaget details the intricate relationship between mental and physical growth development, from birth through adolescence

1988

Donna R. Recht and Lauren Leslie find prior knowledge has significant effect on learners' retention and summarizing of information after reading

1988

Robert Glaser and Michelene Chi draw attention to the cognitive and psychological conditions that enhance and limit the development of expertise

1986

Albert Bandura reveals his robust theory on the cognitive and social factors that affect human motivation

1978

Lev Vygotsky emphasizes the essential role of social relationships in cognitive development

1991

Martin Haberman challenges urban educators to focus on creating a learning environment that fits the needs and nature of urban youth

1994

Elizabeth Cohen and Rachel Lotan blend theory with effective teaching strategies for group work, emphasizing multiple ability and bilingual classrooms

1995

Daniel Goleman introduces model for emotional intelligence encompassing five skills, which include self-regulation and empathy

1995

Gloria Ladson-Billings provides improved definition of culturally-relevant pedagogy and best practices for teacher education

1998

Grant Wiggins advocates for and details performance-based assessment, focused on helping students improve

2001

Linda Darling-Hammond presents learner-centered solutions for systemic changes in the American education system

2000

Jeannie Oakes spotlights the historical and harmful effects of tracking in the American classroom

2000

John D. Bransford et al. combine theories of how we learn with best practices for effective learning in the classroom

1999

Buck Institute for Education defines project-based learning, which Summit adopts to describe its project-based learning pillar

2001

Carol Ann Tomlinson collates field-tested and best practices for differentiated instruction in multiple ability classrooms

2003

Erik De Corte emphasizes the need for active learning experiences and the importance of metacognition and communication skills in transfer of knowledge

2007

John Hattie and Helen Timperley suggest best ways to deliver individualized feedback in the classroom

2007

Carol Dweck explains how to leverage mindset to better fulfill individual potential

2008

Clayton M. Christensen et al. apply disruptive change theory to K-12 public education

2008

Linda Darling-Hammond and Bridgid Barron present a comprehensive review of the research behind inquiry-based and cooperative learning approaches

2008

William Damon identifies key factors that help young adults to identify their Sense of Purpose

2008

David Conley sets forth the Cognitive Skills, Content Knowledge, and "habits of mind" necessary for high school students to be college ready

2008

Arthur Costa and Bena Kallick present a guide for shaping schools around 16 habits of mind

2009

John Hattie's pivotal meta-study uncovers core influences, like strong student-teacher relationships, on teaching and learning

2009

Daniel Willingham emphasizes the importance of background knowledge in the critical thinking process

2010

Tom Rath and Jim Harter explore how five universal and interconnected factors influence overall well-being

2010

Thomas R. Guskey and Jane M. Bailey propose a four-pillar framework for effective grading and reporting systems

2011

Teresa Amabile identifies the leadership traits and environmental forces that elicit more productive and happier employees

2013

Martin E. P. Seligman et al. identifies three interrelated factors essential to identifying a sense of individual purpose

2013

Lucas Education Research applies a rigorous research approach to project-based learning and begins developing a classroom-based PBL model

2012

ConnectEd bridges research on workforce development and job readiness with secondary education in new framework for education

2012

Camille Farrington et al. (University of Chicago Consortium in Chicago School Research) link social-emotional skills with higher student achievement

2011

Daniel Kahneman bridges the intuitive mind with the logical and explains how the two work together to shape human behavior

2014

Angela Duckworth identifies grit — a blend of passion and perseverance — as key variable in high achievers

2014

David S. Yeager et al. proposes that Sense of Purpose and connection to cause beyond self can improve self-regulation on academic tasks

2014

Ron Berger et al. advocate for self-directed learning and student-engaged assessments

2014

Peter C. Brown et al. present concrete practices for mastery learning, like building background knowledge, based on recent research in cognitive psychology and related fields

2015

Angela Duckworth and David Yeager discourage use of evaluative assessments for social-emotional skills

2015

Jo Boaler provides roadmap of research-based strategies for helping all children be successful in mathematics

2015

Charles Fadel et al. present a four-dimensional framework of competencies for successful 21<sup>st</sup> century learners

2014

Zaretta Hammond frames cultural responsiveness as a process that teachers can learn to build better relationships with students

2014

David Perkins introduces a framework for creating a curriculum that prepares learners to build a thriving future society

2015

Carissa Romero (Mindset Scholars Network) connects students' sense of belonging with improved engagement in the learning process

2016

K. Brooke Stafford-Brizard's and Turnaround for Children's Building Blocks for Learning Framework integrates social and cognitive pathways for optimal developments

2016

Trevor Fronius et al. (WestEd) answers questions about restorative justice as a favorable approach to school and student discipline

2016

Todd Rose proposes an individualized, versus standardized, approach to performance assessment in education and in the workforce

2017

David Osher et al. (AIR) present a comprehensive case for student-centered, individualized classrooms and schools

2016

Thomas Dee and Emily Penner suggest that supportive and culturally-relevant teaching can lead to increased performance in at-risk students

2016

Daniel Schwartz et al. categorize and describe 26 "scientifically proven" approaches to learning

2016

Kristina Zeiser et al. (AIR) make case for positive relationship between competency-based education and greater autonomy over and motivation for learning

Today