

# From Zero to Fifty

## Marking a half-century of Project Zero's impact in education

Harvard's Project Zero has been at the forefront of education research for more than five decades. Director **Daniel Wilson** highlights some of its contributions and current lines of research.



The fourth floor of the stately Longfellow Hall at the Harvard Graduate School of Education is home to Project Zero, one of the longest-running research centres at Harvard University and one of the most impactful in the field of education. Visitors entering its lobby are greeted with eye-catching exhibits of Project Zero's history, past publications and displays of its current research projects. Works of art and exhibitions of student work line the hallways. Quotes from former and current researchers dot the spaces between doorways. Offices and meeting rooms bustle with dozens of researchers analysing data, discussing findings, meeting with collaborators and writing up results. For five decades, the work of Project Zero's researchers has illuminated the nature of a variety of human potentials, such as the nature of creativity, intelligence, thinking, and learning. Today their research is thriving, continuing to shape policy, theory and pedagogical practice around the world.

Founded in 1967 by Harvard philosopher Nelson Goodman, Project Zero's initial aim was to explore and understand the nature of artistic development. Its name originates from Goodman's view at the time that 'The state of general, communicable knowledge about arts education is zero. So we are Project Zero.' That year he gathered together an interdisciplinary group of academics, including David Perkins and Howard Gardner who were completing their doctoral studies at MIT and Harvard, respectively. The group's early studies led to reports that outlined initial findings on the state of arts education and suggested directions for future research. When Goodman retired in 1972, Perkins and Gardner took the reigns of Project Zero, serving as its co-Directors for the next 28 years.

Under their leadership, the centre's research grew to explore a greater variety of human potentials beyond artistic development. Each new Project Zero Director—Steve Seidel in 2000 and Shari Tishman in 2008—oversaw an expansion of research that built upon previous insights and was fueled by a surging interest in education. Today, Project Zero is home to over sixty researchers working on twenty-five projects and research sites in nineteen



countries. These projects range in size and foci – from understanding the nature of playful learning with educators in Denmark and South Africa, to examining the role of the artists in civic life in Australia, to studying how students develop cross-cultural perspective-taking in online learning environments. Each project continues to explore on the nature of human potentials and how they develop in different contemporary contexts.





The articles included in this special issue provide a window into the current and past work of researchers at Project Zero. They frame areas of study and offer tools that were often developed from close collaborations with teachers. To a reader unfamiliar with Project Zero's work, these articles may seem unrelated given the range of topics. However, below the surface, there are foundational connections. Fifty years of investigations have built the following cornerstone perspectives that bind Project Zero's past and current work together.

**Intelligence as learnable and multiple:** For almost a century, intelligence was seen as fixed, general and only measured by standardised linguistic and logical tests. Early Project Zero research revealed that intelligence is a learned ability to find and solve problems and to create products of value in a culture. Each person has a robust set of human intelligences that are developed and expressed within and across cultural contexts. Publications such as *Smart Schools*<sup>1</sup> and *Frames of Mind*,<sup>2</sup> the latter articulating the theory of multiple intelligences, contributed to the conceptual foundations for classroom practices of differentiated instruction, authentic assessment and project-based learning.

**Creativity as socio-cultural and cognitive:** Project Zero researchers extended their work on intelligence by rejecting long-standing traditions of evaluating single or trait-based conceptions of and tests for creativity. Their investigations exposed the myth of a single variety of creativity. Rather, creativity exists at the intersection of individuals, the domain knowledge and the field of practice. A student in any domain can develop the capacity to solve problems, craft products or define new questions in novel ways that may ultimately come to be accepted in a classroom or larger social setting. In this way, creativity isn't just the work of a genius, it is the work of anyone and everyone. It is a distributed

and participatory process, involving many actors in a given context. Publications such as *The Mind's Best Work*,<sup>3</sup> *Creating Minds*<sup>4</sup> and *Participatory Creativity*<sup>5</sup> illustrate the mental and collective properties of creativity.

**Understanding as flexible performance:** Research-based publications such as *Teaching for Understanding*<sup>6</sup> and *Teaching for Understanding Guide*<sup>7</sup> argue that understanding is not just the acquiring of the correct mental model or schema. Instead, understanding is a performance of acting flexibly with knowledge in novel situations. It includes students' capacity to transfer that knowledge to new settings, as well as the ability to restructure concepts rather than just acquire information. Understanding is revealed through performances, which are opportunities for students to extend their knowledge into new situations. The *Teaching for Understanding* project, which involved dozens of researchers and teachers around the world, examined the approaches and impact of pedagogies that foregrounded this performative view. Hundreds of schools around the globe have been inspired by this work and have reshaped curriculum and assessment practices to better develop understanding in their students.

**Thinking as dispositional and visible:** Project Zero research revealed that good thinking is a matter of disposition and that thinking can be seen. Developing students' dispositional motivations and skills are part of good thinking. However, findings from Project Zero research suggested the larger challenge is that students often lack the sensitivity to detect the opportunities to use their thinking skills. Developing students' dispositions to be sensitive to occasions for thinking is something that effective teachers do. Occasions for thinking invite students to make their thinking visible, through their language, drawings and other symbol systems. In contrast to long-held views that considered thinking to be solely





an invisible cognitive activity, thinking can be made visible through externalised representations. Project Zero projects and publications, such *The Thinking Classroom*,<sup>8</sup> *Making Thinking Visible*<sup>9</sup> and *Creating Cultures of Thinking*<sup>10</sup> have offered practices to educators that are based on insights from this research.

**Artistry as cognitive and developmental:** From its early pioneering work that examined how artists think and how children develop artistic skills, Project Zero has illuminated the cognitive dimensions of the arts and art-making. Artistic activity involves a variety of habits of mind that support skills such as looking and listening closely, reflection, and expression. Engaging in and with art, on its own merits, offers developmental opportunities for students that are uniquely different from those offered by other subjects. Projects and publications such as *Arts PROPEL*,<sup>11</sup> *Art Works for Schools*<sup>12</sup> and *Studio Thinking*<sup>13</sup> illustrate how students engage with and through the arts as vital pathways for developing and demonstrating thinking.

**Assessment as an opportunity for learning:** Evaluations and claims of learning are essential to any teaching and learning process. Without evidence, how are we to know that students are developing skills and knowledge? Moreover, the way learning is documented and assessed directly influences what gets taught. Over decades, Project Zero's research has shifted conceptions of assessment in the classroom in important ways. The focus of the assessment should include the learning process as well as outcomes and products. The role of students can be shifted to become participants in self and peer assessments. And the role of the teacher changes to become a documenter of learning, gathering various types of evidence in order to build theories that they can test with their students and their fellow teachers. Publications from projects such as *Teaching as Inquiry*,<sup>14</sup> *Looking Together at Student Work*<sup>15</sup> and *Visible Learners*<sup>16</sup> each depict educational practices that illuminate how assessments can be rich learning moments for students and teachers alike.



These foundational perspectives mark Project Zero's impact on the field of educational theory and practice. But what does the future hold? As researchers at Project Zero look ahead, issues of access and impact are foremost in their discussions. Increasingly, researchers are concerned with the cycle of how educators learn about research, adapt it into their practice and most importantly, how PZ researchers can learn from these educators. In the early days, access to PZ research was limited to its publications – scholarly journals and books were the only avenue to learn about the work.

Today, Project Zero convenes events around the United States and the world, bringing educators together to explore their practice in relation to new findings. Project Zero's international events, online courses and professional development workshops have become generative ways that teachers can engage with ideas while learning with and from other educators. In the past year, over a thousand educators participated in conferences and professional development workshops designed and led by Project Zero researchers. And over three thousand educators from around the world enrolled in online courses offered by the centre. In the coming years, Project Zero aims to advance offerings like these while continuing to raise funds to support the participation of many more educators who work in under-resourced settings.

In terms of Project Zero's future impact on the field of education, researchers are identifying contemporary challenges of developing human potentials. If you were to drop into meetings on the fourth floor of Longfellow Hall, you would hear researchers discussing questions such as: What does it mean to be globally competent in today's complex world and how do such competencies develop? How do young people navigate the various ethical dilemmas of digital life? What is the nature of civic engagement in today's society and how can civic dispositions be cultivated? These are just some of the questions that are shaping current discussions and future research at Project Zero.

**Daniel Wilson is Director and Principal Investigator of Project Zero.**

## Notes

- 1 Perkins, D. N. (1992). *Smart schools: Better thinking and learning for every child*. New York: Free Press.
- 2 Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
- 3 Perkins, D. N. (1981). *The mind's best work*. Cambridge, MA: Harvard University Press.
- 4 Gardner, H. (1993). *Creating minds: An anatomy of creativity seen through the lives of Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Gandhi*. New York: Basic Books.
- 5 Clapp, E. P. (2017). *Participatory creativity: Introducing access and equity to the creative classroom*. New York: Routledge.
- 6 Wiske, M. S. (1998). *Teaching for understanding: Linking research with practice*. San Francisco: Jossey-Bass Publishers.
- 7 Blythe, T., et al. (1998). *Teaching for understanding guide*. San Francisco: Jossey-Bass.
- 8 Tishman, S., Perkins, D. N., & Jay, E. (1994). *The thinking classroom: Learning and teaching in a culture of thinking*. Boston: Allyn & Bacon.
- 9 Ritchhart, R., Church, M., & Morrison, K. (2011). *Making thinking visible: How to promote engagement, understanding, and independence for all learners*. San Francisco: Jossey-Bass.
- 10 Ritchhart, R. (2015). *Creating cultures of thinking: The 8 forces we must master to truly transform our schools*. San Francisco: Jossey-Bass.
- 11 Foote, A., Gitomer, D., Melamed, L., Rosenblatt, E., Simmons, S., Sims-Gunzenhauser, A., & Winner, E. (1992). *Arts PROPEL: A handbook for visual artists*. Cambridge, Mass.: Educational Testing Service and Harvard Project Zero.
- 12 Grotzer, T. (2002). *Art works for schools: A curriculum for teaching thinking in and through the arts*. Lincoln, Mass.: Decordova Museum and Sculpture Park, Harvard Project Zero, and the Underground Railway Theater.
- 13 Hetland, L., Winner, E., Veenema, S. A., & Sheridan, K. M. (2007). *Studio thinking: The real benefits of visual arts education*. New York: Teachers College Press.
- 14 Weinbaum, A., Allen, D., Blythe, T., Simon, K., Seidel, S., & Rubin, C. (2004). *Teaching as inquiry: Asking hard questions to improve practice and student achievement*. New York: Teachers College Press.
- 15 Blythe, T., Allen, D., Powell, B. (2015). *Looking together at student work: A companion guide to assessing student learning* (3rd ed.). New York: Teachers College Press.
- 16 Krechevsky, M., Mardell, B., Rivard, M., & Wilson, D. (2013). *Visible learners: Promoting Reggio-inspired approaches in all schools*. New York: John Wiley & Sons Inc.