PZ PROJECT ZERO

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Research Project Descriptions, 2016

Agency *by* Design (A*b*D) is a multiyear research initiative launched in 2012 to investigate the promises, practices, and pedagogies of maker-centered learning. Through this work we have identified maker empowerment—a sensitivity to the designed dimensions of objects and systems, along with the inclination and capacity to shape one's world through building, tinkering, re/designing, or hacking— as a key outcome of maker-centered learning experiences. Arising from conversations with educators in maker-centered learning environments, AbD established a framework for maker-centered learning that includes three core maker capacities: looking closely, exploring complexity, and finding opportunity. To support this framework in a variety of teaching and learning environments, the AbD research team developed a suite of thinking routines and educator resources that were pilot tested and refined in collaboration with a teacher group in Oakland, California. Today, these tools and ideas continue to be used by the Oakland teachers as well as educators around the world who are exploring Project Zero frameworks in their classrooms and through AbD's online course at the Harvard Graduate School of Education. Agency by Design's current work focuses on developing documentation and assessment tools that are designed with maker-centered learning environments in mind and built on the project concepts of maker empowerment, sensitivity to design, and the three maker capacities of looking closely, exploring complexity, and finding opportunity.

ALPS 21: In effort to strengthen educational outcomes in the liberal arts and sciences, Aligned Programs for the 21st Century (ALPS21) aims to identify exemplary programs in higher education—courses, programs, and co-curricular activities—that can bridge differences in perspectives among the major stakeholders on college campuses. ALPS21 is part of a larger empirical study, Liberal Arts and Sciences in the 21st Century (LAS21), which seeks to uncover how students, parents of students, faculty, administrators, trustees, alumni, and job recruiters conceive of the purposes, goals, best practices, and most challenging features of undergraduate education in the US today. ALPS21 will disseminate strategies, approaches, and examples of programs on college campuses that effectively bring constituencies into better alignment.

Creating Communities of Innovation (CCI): A multi-year study pursuing new approaches to educational innovations with 52 teachers and administrators working in seven of the forty-two schools within the GEMS Middle East/North Africa/South Asia (MENASA) network. Through a process of joint inquiry, the project considers how researchers might partner with educators and administrators to create scalable innovations within a network of schools, and how such a network could be used to develop and sustain innovations that truly add value to teaching and learning. Teachers

and administrators working with the Creating Communities of Innovation project serve students in primary, middle, and secondary school and work within schools that apply American, Indian, British, and International Baccalaureate curricula. Though predominantly situated within the cultural context of the United Arab Emirates, the emergent tools and educator resources developed through the Creating Communities of Innovation project are meant to be adapted to suit a variety of teaching and learning environments.

Cultures of Thinking: We define "Cultures of Thinking" (CoT) as places where a group's collective as well as individual thinking is valued, visible, and actively promoted as part of the regular, day-to-day experience of all group members. Drawing on previous research by Ron Ritchhart (2002), the CoT project focuses teachers' attention on the eight cultural forces present in every group learning situation, which act as shapers of the group's cultural dynamic and consist of language, time, environment, opportunities, routines, modeling, interactions, and expectations. As teachers strive to create cultures of thinking in their classrooms, they can use a variety of methods, including making time for thinking, developing and using a language of thinking, making the classroom environment rich with the documents of thinking processes, and making their own thinking visible, to name a few. In 2005, we began our work at Bialik College by working intensively with two focus groups of eight teachers from various K-12 grade levels and subjects to create a rich professional culture of thinking for teachers. In order to better understand changes in teachers' and students' attitudes and practices as thinking becomes more visible in the school and classroom environments, we developed measures of school and classroom thoughtfulness to capture these changes, conducted case studies of teachers, and looked at how students' understanding of the area of thinking developed.

EcoLEARN refers to a set of projects that use technology to teach ecosystems concepts. A primary focus right now is on EcoXPT. an extension of a technology-based curriculum called EcoMUVE, where students explore a a Multi-User Virtual Environment or MUVE, representation of a pond ecosystem to understand ecosystems and causal dynamics. EcoXPT advances this earlier work by developing ways for students to conduct experiments within the virtual world and to see the results of those experiments. We have built and are testing curriculum for middle school students to help them learn to more deeply understand ecosystems patterns and the strengths and limitations of experimentation in ecosystems science.

The Family Dinner Project (FDP) The Family Dinner Project: The brainchild of Shelly London, former fellow at Harvard's Advanced Leadership Initiative, The Family Dinner Project is a growing movement that champions family dinner as an opportunity for family members to connect with each other through food, fun and conversation about things that matter. Since 2009, the Good Project at the Harvard Graduate School of Education has helped to develop this national movement. By supporting regular, substantive connection and conversation, The Family Dinner Project encourages

individuals to become more aware and mindful of ethics in their personal, academic and professional lives. The topic of Good Work is essential to the kinds of conversations we hope families will pursue at the dinner table. Years of scientific research document the many physical, mental health and academic benefits of family dinners. Research links regular family meals with the kinds of behaviors parents want for their children: healthier eating habits, of course, but also reduction of high-risk teenage behaviors such as drug use and teen pregnancy, lower rates of depression and anxiety, stronger resilience and self-esteem, and even higher grade point averages and better vocabularies. Whereas this research is the "why" of family dinners, The Family Dinner Project is the "how." With online resources and community-based programs, The Family Dinner Project helps families improve the quantity and quality of their meals together.

Humanities and Liberal Arts Assessment Lab (HULA): Founded in 2012, the Humanities and Liberal Arts Assessment project (HULA) research team has taken on the project of understanding the learning theories and related theories of human development that lie at the heart of the humanities. Professional Humanists—those with advanced degrees in humanities subjects— have been passing on their practices and craft knowledge for millennia through master-apprentice relationships. Our goal is to make the implicit craft knowledge and practices of these disciplines explicit. The value in illuminating the craft knowledge of the goals of the humanities in relation to the methods and mechanisms by which those goals can be achieved is that then assessment becomes possible via instruments developed organically out of humanists' practices in contrast to instruments imported from other contexts.
These assessment instruments have a twofold value for both professional humanist and those outside the humanities: they should provide for more accurate and meaningful evaluation of outcomes to undergird the presentation of humanities work to those outside the humanities, as well as providing developmental resources for professional humanists that will help them hone their craft.

ID Global Project: Signature Pedagogies in Global Education examines how award-winning teachers design instruction that is uniquely suited to nurture global competence among students at the elementary, middle and high school levels. We examine the forms of expertise that inform teachers' practice—i.e. their understanding of (a) the world and selected global issues; (b) their disciplines and their standards in global terms; (c) the specific learning challenges that students confront when learning about the world; and (d) effective pedagogy. Our team is conceptualizing a signature pedagogies framework for global education that will directly inform how we prepare teachers to teach about the world.

Leading Learning that Matters (LLtM): is a four-year collaboration with the Independent Schools Victoria (ISV), Australia to document cases of what leadership learning, or leading learning, looks like in a variety of cultural, urban, and rural K-12 contexts in the state of Victoria. Beginning in 2013, a group of experienced Independent school Principals began working with the Harvard Graduate School of Education to identify

leadership practices needed to explore, plan and implement school innovations for 21st century learning. The Principals are bringing benefits to their schools and communities in a practical way. This work is supported through residential workshops with local and international experts, an international study tour including a customized seminar at Harvard University, site visits and meetings with international business leaders, and the ongoing support from both the Harvard team and Independent Schools Victoria.

Learning Innovations Laboratory (LILA): Founded in 2000, LILA is a consortium of researchers and practitioners in the field of organizational learning and change. Through creating social connections, crafting insights, and having a practical impact, LILA strives to learn more about today's challenges in the field. LILA is composed of members from three areas: organizational leaders from private, public, and non-profit sectors; faculty scholars; and Project Zero researchers and Harvard graduate students. The project hosts several annual gatherings at Harvard designed to present research and findings among LILA members, as well as to generate feedback based upon what is presented. Chair members also engage in monthly conference calls revolving around these issues.

Learning to Thinking, Thinking to Learn (L2T, T2L) is part of the Worldwide Cultures of Thinking Project and aims to develop the ability of students at Mandela International Magnet School in Santa Fe, New Mexico as thinkers and learners. To accomplish this, the project draws on the extensive research of Project Zero related to thinking, learning, and teaching for understanding. This includes promoting thinking through the use of "thinking routines" and by helping teachers to establish a classroom culture that supports thinking. The project provides a unique forum for the further development and refinement of these approaches by combining them at a new school and tracking students' development over time.

Liberal Arts and Sciences in the 21st Century (LAS21) is a large-scale national study that is documenting how different groups think about the goals of college and the value of a course of study emphasizing liberal arts and sciences. In recent years, there have been numerous changes on college campuses and in the broader landscape of higher education. The study seeks to understand how the chief constituencies of campuses — incoming students, graduating students, faculty, senior administrators, parents, alumni/ae, trustees and job recruiters — think about these changes and how they may impact the college experience in our time. The preservation and transformation of liberal arts and sciences is most likely to be effective if such efforts build upon knowledge of the perspectives of all the stakeholders on a range of campuses. Ultimately, the study aims to provide valuable suggestions of how best to provide quality, non-professional higher education in the 21st century.

Out of Eden Learn (OOEL): Since January 2013, Project Zero has been collaborating with Pulitzer Prize-winning journalist and National Geographic Fellow Paul Salopek, who is currently engaged on a 21,000 mile journey on foot around the world. His Out of Eden Walk retraces the migratory pathways of our ancient human ancestors and is a radical

experiment in 'slow journalism." Project Zero has developed a companion online learning community designed to foster cross-cultural inquiry and exchange among school-aged children from all corners of the globe. Out of Eden Learn invites young people to slow down to observe the world carefully and to listen attentively to others; exchange stories and perspectives with one another; and make connections between their own lives and bigger, unfolding human stories. Classes of similarly aged but otherwise diverse students are grouped together to engage in a "learning journey" which unfolds over approximately 12 weeks. To date, over 1000 classes from 52 different countries have taken part in Out of Eden Learn, free of charge.

Pedagogy of Play (PoP): Play is central to how children learn: the way they make sense of their world; the way they form and explore friendships; the way they shape and test intellectual, social, emotional, and ethical ideas. Much is known about the importance of play in children's development. Yet little research has explored what it might mean to put play at the center of schooling. What is the relationship between play and playful learning? How do teachers, curricula, and a school community create a culture that supports a playful pedagogy? Understanding attitudes about and practices around play—in classrooms, on school-wide levels, and in global policy arenas—is an ambitious charge. The PoP project begins this work with a two-year participatory research initiative in partnership with the International School of Billund (ISB), in Denmark. PoP will investigate the role of play and playful learning at ISB and will consider more broadly what it might mean to have play as the heart of a school.

PZ Connect Building on a multi-year relationship between Project Zero (PZ) and Independent Schools of Victoria (Australia), the PZ Connect initiative involves the exploration of the growing number of mechanisms for supporting educators remotely, through online and blended structures, (the Outreach strand) as well as the investigation of fundamental problems in teaching and learning primarily through the PZ frameworks of visible thinking and global competence (the Development strand). The overall work of the initiative dovetails with current efforts underway at PZ to move beyond our typical modes of outreach activity given the many affordances *online* environments provide for supporting teaching and learning. Through the Outreach strand, the larger focus of the initiative, researchers will develop and support informative and interactive educational experiences that vary in length and time commitment involved as well as those that are designed to meet the needs of different audiences. Through the Development strand, the inquiry work will consider opportunities and challenges in learning for thinking and deep understanding including those engaging complexity, those exploring global competence and perspective taking, and those investigating emergent aspects of learning.

ROUNDS at the Harvard Graduate School of Education: All professions must address the problem of how their practitioners stay abreast of current developments in that field and continue practicing clinical skills. Medicine is distinguished by various forms of professional learning practices known as "rounds." Education has far fewer

opportunities of this kind for lifelong professional learning. At Project Zero we have been engaged since 1995 in an effort to create a powerful learning community based on this medical model. The intent was to create an opportunity for educators who shared an interest in the collaborative assessment of student work to gather voluntarily on a regular basis to discuss emerging issues in educational practice, to present their personal puzzles about teaching and learning, and to practice looking at student work together.

Talking With Artists Who Teach: Many artists, in addition to their artistic practice, maintain a rich and dedicated teaching practice. Though the popular notion is that artists teach to supplement their income, this study is premised on the understanding that teaching is, for many, an opportunity to think deeply about the nature of art, their own artistic practice, their own growth and development, and what and how others learn in and through the arts.

Youth and Participatory Politics (YPP) is a study of the why, what, and how of contemporary young people's civic and political participation. Our overarching concerns are about the conditions for "good participation" in the contemporary civic and political spheres – including young people's motivations, beliefs, and the roles of mentors, institutions, and media – and the interplay among these forces. In 2011-2012, researchers conducted interviews with 80 young people engaged in civic or political activities in largely traditional civic contexts, with a few exceptions (e.g., young Occupy activists). The project focused on youth's civic learning experiences, participatory practices (with attention to digital and social media use), and their beliefs about citizenship and the political. Over the next few years the team is focusing more sharply on the roots of participatory politics (including the roles of mentors and institutions), the quality of youth's use of various participatory practices, and the development and expression of youth's civic identities in social media contexts.

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Selected Past Projects

Below are brief descriptions of some past initiatives for which Project Zero is particularly well known. These projects continue to inform our current work, and they have yielded ideas and frameworks that are still very much in use by educators around the world.

Artful Thinking was an initiative to develop a research-based approach to developing learners' thinking dispositions through looking at art. Part of Project Zero's Visible Thinking strand, the program was originally created to help K-12 teachers integrate looking at art into subjects across the curriculum. It has since been adapted for use in museums and other organizations. Like all projects in the Visible Thinking family, Artful Thinking foregrounds the use of thinking routines, the documentation of student thinking, and reflective professional practice as part of a dispositional approach to the development of thinking.

Arts PROPEL was a five-year collaborative project with Project Zero, the Educational Testing Service, and the Pittsburgh Public Schools. The project focused on developing a framework for instruction and assessment in music, visual arts, and imaginative writing which united production, perception, and reflection as integrated elements of the artistic process--with making (production) always remaining at the center (in contrast to the approach taken by Disciplined Based Arts Education). The two most important tools to come out of this project were Domain Projects (long-term projects in each art form) and Processfolios (selections of student work in process along with student reflections). The project is fully described in four handbooks: Arts PROPEL: An introductory handbook; Arts PROPEL: A handbook for the visual arts; Arts PROPEL: A handbook for imaginative writing; and Arts PROPEL: A handbook for music.

Learning in and from Museum Study Centers: Immediately prior to a major renovation of the Harvard University Art Museums (HUAM), Project Zero collaborated with the museums on a research initiative that investigated the nature of visitor learning in HUAM's two study centers--the Agnes Mongan Center for the Study of Prints, Drawings, and Photographs in the Fogg Art Museum, and the Study Room of the Busch-Reisinger Museum. The project examined how object-centered learning in the study centers encourages the development of complex knowledge. The purpose of the project was to inform the physical redesign of the study centers and to suggest ways to enhance their use going forward. The lessons learned have been useful to museums and other settings that emphasize object-centered learning with art and artifacts.

Making Learning Visible: The Making Learning Visible (MLV) Project was based on collaborative research between Project Zero researchers and educators from the Municipal Preschools of Reggio Emilia, Italy. MLV investigated how best to understand, document, and support individual and group learning for children and adults. In particular, MLV addressed three aspects of learning and teaching: 1) what teachers and students can do to support the creation of learning groups in the classroom; 2) the role of observation and documentation in deepening and extending children's and adults' learning; and 3) how teachers and students can both create and transmit culture, values, and knowledge. Over the past decade, MLV has worked with hundreds of preschool through high school teachers and teacher educators in Massachusetts, Rhode Island, and Ohio to promote the development of learning groups in the classroom and staffroom. Today, the ultimate goal of MLV continues to be to create and sustain powerful cultures of learning in and across classrooms and schools, in particular through the use of documentation as a way to deepen and extend learning.

Project Spectrum offered an alternative approach to assessment and curriculum development for the preschool and early primary years based on Howard Gardner's theory of multiple intelligences and David Feldman's theory of development in non-universal domains. The approach stemmed from the belief that each child exhibits a distinctive profile of abilities, or spectrum of intelligences. These intelligences are not fixed; rather, they can be enhanced by stimulating materials and activities in a nurturing environment. The Spectrum approach emphasizes close observation, identifying children's strengths in seven domains of knowledge (language, math, music, art, social understanding, science, and movement), and using this information as the basis for an individualized educational program.

Qualities of Quality in Arts Education: The Qualities of Quality: Understanding Excellence in Arts Education was a multi-faced study of how arts educators define and strive to create high-quality arts learning experiences for children and youth, both in and out of school. This study focused far less on legislative and preparatory efforts to achieve quality than on the nature of the arts learning experience as it actually occurs. The study used qualitative approaches to gain insight into the complex and ephemeral nature of people's thoughts about quality, what informs those thoughts, and how their ideas guide the decisions they make that impact the quality of arts learning experiences. The project yielded a set of tools for educators and policy makers to help them reflect on and discuss issues of quality in their own settings.

REAP (Reviewing Education and the Arts Project) addressed the question of what studies have shown about the effects of arts instruction on cognition in non-arts domains. The project examined all of the major arts domains (multi-arts, visual arts, music, drama, and dance) and resulted in ten meta-analytic reviews. The analyses revealed little evidence to support commonly cited claims for transfer of learning from arts to other areas of the curriculum. Because arts learning was not clearly assessed in most of the research projects synthesized, the researchers turned their attention to a

qualitative study to identify and name what is really taught in visual arts education, which resulted in the Studio Thinking Framework. The analyses are available in a special issue of the Journal of Aesthetic Education (Journal of Aesthetic Education, 34 (3-4), 2000) and in the proceedings of a conference devoted to the study, Beyond the Soundbite: http://www.getty.edu/foundation/pdfs/soundbite.pdf

The Studio Thinking Project was an observational study designed to understand what was taught (the Studio Habits of Mind) and how teaching was conducted (the Studio Structures) in rigorous visual arts instruction. This work resulted in the book Studio Thinking: The real benefits of visual arts education (2007), and a second edition is in preparation. The framework continues to be used widely in the US and internationally in visual arts, music, theater, and dance classes, as well as in non-art subjects. It also led to a project supported by the National Science Foundation which investigated the transfer of learning from visual arts to geometry.

Teaching for Understanding: Enhancing Disciplinary Understanding in Teachers and Students was a collaborative effort of researchers and practitioners initially targeting middle and high school for the purpose of developing and testing a pedagogy of understanding. The key idea was "performing" understandings: understanding something as a matter of being able to think and act flexibly with what you know about it, not just passively "having" an understanding. Research showed that learners understood content better when teachers used the Teaching for Understanding framework. Since its development, the framework has been applied widely to teaching and learning K-12, at the university level, and even to organizational learning.

Visible Thinking was an initiative to develop a research-based approach to teaching thinking dispositions. The approach emphasized three core practices: thinking routines, the documentation of student thinking, and reflective professional practice. It was originally developed at Lemshaga Akademi in Sweden as part of the Innovating with Intelligence project, and focused on developing students' thinking dispositions in such areas as truth-seeking, understanding, fairness, and imagination. It has since expanded its focus to include an emphasis on thinking through art and the role of cultural forces and has informed the development of other Project Zero Visible Thinking initiatives, including Artful Thinking, and Cultures of Thinking.