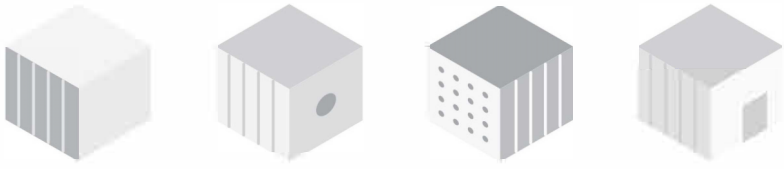


USING DESIGN THINKING

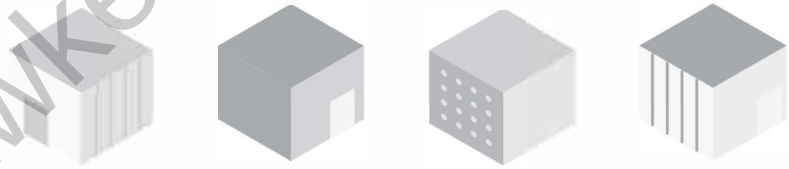
DESIGNED

TO BRING PURPOSE AND PASSION

TO LEARN

TO THE CLASSROOM

LINDSAY PORTNOY



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USING DESIGN THINKING TO BRING

DESIGNED TO LEARN

PURPOSE AND PASSION TO THE CLASSROOM

Introduction

Did you know when you wonder you're learning?

Fred Rogers

This story starts with Tech Valley, a dynamic high school in Albany, New York, that leverages community relationships to enhance student learning and help students see themselves as valuable members of their community who can bring about positive change. School outreach coordinator Sarah Fiess works tirelessly to bring in community members to share their expertise and demonstrate how students' classroom learning applies to the world outside school.

It was a week after one such visit that environmental science teacher Ashley Phillips introduced the topic of population dynamics. Using passages from Michael Pollan's book, *The Omnivore's Dilemma*, Phillips asked students to share their thoughts on food scarcity and its impact on the local and global community.

What followed was a sort of Socratic seminar in which students questioned human nutritional requirements, types of agriculture, genetic engineering, irrigation, and pesticides. One student recalled how a local information security expert who had visited the school made the connection between food scarcity and protecting resources against a cyberattack. Another student wondered aloud, "How can we help all people see the impact of the decisions they make on everyone in their community and our world?"

Phillips challenged the students to create an experience that would help people understand population dynamics. One student suggested creating a

card game, a suggestion that was enthusiastically embraced. The game, ultimately named Pressing Issues, would include a series of cards that introduced a problem in the form of a question such as, "What are the best national policies that can be put in place to address overpopulation?" Players were to choose a solution from among the solution cards in their hands and then defend it. To create the game, students had to research the implications of population growth and enumerate the advantages and disadvantages associated with each of the myriad solutions. To refine and improve the game, they solicited feedback from peers who served as game testers.

And that's how a simple wondering turned into an amazing learning experience. As a guide on the side, the teacher was able to teach environmental science content in a way that was deeply engaging and driven by student learners.

Designing to Learn

Herein lies the promise of experiential learning—through the elements of *design thinking*. Design thinking entails creating learning environments that foster students' ability to design solutions to today's pressing problems. As in the example above, the process of *understanding* through *empathy* enabled learners to *identify* and *research* a specific problem to solve. Through *ideation*, learners worked collaboratively to identify a way to *communicate* their knowledge, in this case through the creation of an experience called Pressing Issues. Building a *prototype* of their game and *testing* it helped them improve their work. Through *iteration* and *reflection*, learners were able to identify the ways their understanding could influence their learning both today and in the future.

Teachers are the ultimate design thinkers. Every day, teachers enter classrooms to embark on the human-centered act of guiding our youngest citizens along their pathways to success. But the role of educator nearly always extends beyond the walls of the classroom to impact the broader communities we serve, traveling with each of our learners who carry a piece of our shared journey as they make their way in the world. Nowhere is student voice

more influential than in a classroom of experiential learners using the lens of design thinking to solve problems in their world and work together to create a more sustainable future.

Why We Need It

By the year 2026, the rote tasks inherent in our current professions will be automated by technology, effectively changing or eliminating nearly two million jobs in the United States alone. Although these figures are typically used to incite fear, the reality is far more promising. According to the consulting firm McKinsey Global Institute, by 2030 there will be a surge of over 200 million new careers (Manyika et al., 2017). These new roles will no longer ask learners to simply collect and process data but, instead, to apply expertise, interact with stakeholders, and navigate complex relationships. Students will be called on to use their uniquely human skills of collaboration, communication, empathy, and divergent thinking as they move into an uncertain but exciting future. The process of design thinking as described in this book naturally hones these skills by engaging learners in meaningful work.

A Look at the Book

Designed to Learn is divided into two parts. The first section looks at design thinking globally. It begins with a research-based overview of the five elements of design thinking and provides methods for formatively assessing learning at each step. In Chapter 1, we see how design thinking encourages students to take perspective and empathize with others in their classroom and in the wider community. As they identify problems, students learn to work effectively with others, listen to varying perspectives, and support their thinking with evidence.

Design thinking necessarily shifts the roles of educators and students in the classroom. Chapter 2 unpacks those roles and details how student inquiry and developmentally appropriate content enable educators to provide multiple ways of solving problems across the curriculum. Chapter 3 examines how a few simple shifts in planning can transform traditional instruction

into purposeful, multimodal, engaged learning. Design thinking drives student engagement by giving learners the *why* behind learning content through active application and inquiry.

The process of design thinking begins when students use their content knowledge to identify a meaningful problem to solve and then work together to create solutions. We'll address these issues in the second part of the book, each chapter of which will tackle one of the five elements in design thinking. In Chapter 4, we'll see how students tackle the first element, *understand and empathize*. Here they learn how to take on new perspectives to build empathy for others while broadening their view of the world around them. In science classes, they may study how new buildings in their town affect the local water supply. In social studies, they may uncover the history of a local law and wish to learn more about its impact on their community.

Understanding for empathy supports learners in identifying opportunities for designing innovations, but how do students know if the problem they've identified is a mere symptom or the root cause? Chapter 5 focuses on the second element in the process, *identify and research*. Here we'll discuss why guiding students in identifying the root cause of a problem is one of the most complex aspects of design thinking and a valuable opportunity for fostering future-ready learners.

During the ideation phase of the process, students draw from their cross-curricular understanding to put forth innovative solutions to a problem. Scaffolding ideation in the classroom requires careful listening and critical feedback. Chapter 6 deals with the third element in the design thinking process, *communicate to ideate*. It provides concrete methods for supporting students in evaluating the feasibility and impact of designs while engaging in effective communication to advocate for change.

Having identified a need and ideated solutions, students must now carefully select, build, and test the prototype they believe is most promising. Chapter 7 considers the fourth element, *prototype and test*. It offers concrete strategies for evaluating student work, as well as vignettes demonstrating how students can prototype and test designs across the curriculum.

Once students have created and tested their prototype, they must carefully evaluate the feedback to determine how well their solution addressed the identified problem. Chapter 8 focuses on the last element in the design thinking process, *iterate and reflect.* It suggests multiple ways for teachers to support students in categorizing feedback that either supports or rejects their designed solution in ways that foster empathy, develop clear communication skills, and support collaboration toward a shared goal. This chapter concludes the description of the key components of the design thinking process.

Each chapter of the book emphasizes the crucial importance of ongoing feedback in making learning visible and ensuring that learners take the lead in their own learning. You'll find student self-assessments and peer assessments. You'll find questions for both teachers and students in each of the five elements that get at the heart of learning. And you'll find a plethora of tools that students can use to clarify their thinking, monitor their progress, and become successful designers and problem solvers.

In Notes from the Field, a section I've included at the end of each chapter, I offer case studies from teachers across the United States who use design thinking across the curriculum and across various levels of instruction. These teachers share the aspects of design thinking that have been the most challenging, most exciting, and most inspiring in their communities.

A Sneak Peek: Design Thinking in Action

In a 4th and 5th grade self-contained classroom at a large Title 1 school in Brooklyn, New York, the students weren't sure what to expect when teaching artists Jody Drezner Alperin and Vicky Finney Crouch from the educational organization Off the Page arrived in their classroom. The unit of study they would cover together included immigration; it spanned the same objectives covered across New York City public schools, including industrial growth and immigration during the early 1900s.

The typical instruction around immigration begins by sharing informational texts with the students in this 12:1 classroom. Together, teachers and students discuss how the lives of immigrants changed as they adapted to life

in New York City. The readings and conversations typically culminate in a written essay or report. These are the traditional outcomes of this standard unit of study. But the teaching artists at Off the Page had a different idea.

In addition to some of the traditional readings, Drezner Alperin and Finney Crouch created simulations in which students experienced the lives of immigrants during the Industrial Revolution. From sorting buttons in a factory to navigating a system in a new language, learners quickly connected the experiences of the past with those of the present. Most of the children in the class, themselves immigrants, readily identified with the experiences of those children from over a century ago. What's more, several children offered, "In my country, kids still work."

Understanding immigration during the Industrial Revolution and empathizing with new immigrants took on a deeper meaning as students began to research current practices in countries around the world. Students learned that although the United States long ago banned child labor, many of the countries from which students hailed still allowed such practices to continue. Learners wondered how they could help raise awareness of this issue across their community. In researching the problem further, students realized that many of the goods purchased locally come from places where child labor continues. What's more, learners discovered a free mobile app that enables users to discover the country of origin of many of the products they purchase.

Students brainstormed a list of ways they could raise awareness of this issue. They decided to create a campaign to inform the entire community about how to download the free mobile app so community members would know more about the products they were purchasing. The community embraced this tool and became far more mindful of where their purchases were produced.

This design thinking experience met the same requirements as typical instruction about immigration during the height of the Industrial Revolution, but it yielded significantly deeper outcomes, including more engaged learners and an empowered community. Through empathizing, defining the problem, ideating, prototyping, and testing the impact of their campaign, students began to see themselves as more than simply receivers of knowledge; they

saw themselves as transmitters of hope and power in building a more just future.

Are You Ready?

You, too, can transform your curriculum into an invitation for innovation with minimal effort and maximum reward. In the pages that follow, I'll equip you with the necessary strategies and supports to do so. The question now is this: Are you ready to share in the work of reviving purposeful education that encourages students to embrace their uniquely human skills as they prepare for future roles that are as yet undefined?