

INTRODUCTION

Teacher Pioneers has been a labor of love from the very beginning. In the spring of 2014, as I was drowning in my dissertation, I kept coming across amazing work by teachers who inspired my own research. These teachers were building games, modding games, appropriating games, picking up pieces of very old or very new technology and thinking, *What can I do with this?* Conferences and the blogosphere and social media were just absolutely on fire with this extraordinary level of shared creativity.

At the same time, I kept hearing other teachers say, “I’d like to use games in my classroom, but where do I start?” And there were some answers, but they tended to be general introductions,¹ or based on one specific game, platform, or theme,² or online collections of games and teacher resources.³ But often what these teachers wanted—what they were *really* asking for—was the chance to sit down with other teachers who had already used games in their classrooms and to talk for hours. They wanted to hear stories of teaching, and learning, and failing, and learning. They wanted to hear the good, the bad, and the ugly, and from that starting point make their own professional decisions about where to start for their own classrooms and students and content and context.

This book is the chance to sit down for hours with those other teachers and to hear their stories. And I’m delighted to be your tour guide. I recommend you buckle in.

Teachers often must play the part of the pioneer if changes are to be made. Pioneers forge ahead in spite of difficulty, learning all they can before striking out for new territory. They study maps, anecdotal records, and talk to those on the edge of the frontier. They take old knowledge with them, but expect to develop new strategies, solve novel problems, create new language to describe what they see, and share what they learn with those who have not yet made the journey. Pioneers learn as they go.⁴

This book is divided into three sections, by theme: *Building Games From Scratch*; *Using Preexisting Platforms*; and *Broadening the Genre*. (The table immediately before this introduction breaks down each chapter’s categories into content, platform, age group, etc., so that you can more easily figure out which chapters will be most interesting and useful. Reading *Teacher Pioneers* from start to finish is a thing of joy and beauty forever, but if you don’t have time, that table will be very helpful!)

1. Such as the NCTM brief by Remi Holden and me: How can teachers use video games to teach their students mathematics?
<http://www.nctm.org/news/content.aspx?id=43160>

2. Such as Seann Dikkers’s TeacherCraft: How Teachers Learn to Use MineCraft in Their Classrooms, or Holden et al.’s Mobile Media Learning

3. Such as educade.org and graphite.org

4. Armstrong, B. E., & Bezuk, N. (1995). Multiplication and division of fractions: The search for meaning. In J. T. Sowder & B. P. Schappelle (Eds.), *Providing a foundation for teaching mathematics in the middle grades* (pp. 85-119). Albany: State University of New York.

The first section, *Building Games From Scratch*, focuses on contributions from teacher pioneers who have designed games without the structure of preexisting platforms to support their development. Seann Dikkers (Chapter 1) details his experience designing, building, and balancing a board-game version of *Civilization* for his middle school geography classroom, with step-by-step instructions on developing your own version for geography or history classes. John Fallon (Chapter 2) offers advice on developing your own augmented reality game (ARG) through the lens of his experience with designing one to augment *Odysseus* for his middle school English course—which resulted in, among other things, students’ yelling “horse feathers!” repeatedly at their (amused and forewarned) history teacher. Kip Glazer (Chapter 3) continues the merging of text and game theme by sharing the process she used in her high school class to teach *Beowulf*, arguing for role-playing game (RPG) creation as a pedagogical strategy that can transform traditional English classrooms. Glazer was originally inspired to design and implement RPGs by Trent Hergenrader, which makes putting their contributions together a beautiful coincidence! Hergenrader (Chapter 4) shares his detailed method for developing tabletop RPG experiences for his college-level creative writing courses, with enough information for anyone to be guided and inspired! Closing out the first section is Paul Darvasi (Chapter 5), who turns his high school English class into *One Flew Over the Cuckoo’s Nest* by donning Big Nurse’s outfit and turning his students into patients, drawing our attention to similarities between formal education and the classic novel.

Using Preexisting Platforms focuses on teacher pioneers who have either designed new games and experiences using digital platforms or incorporated commercial games into their classrooms, varying from the popular games/platforms *Portal 2* and *Minecraft* to location-based activities using ARIS. The section begins with Cameron Pittman (Chapter 6), who shares the process of getting *Portal 2* into his high school physics classroom—with all the nitty-gritty details that other teachers should be prepared for—and reminds fellow pioneers that “failure” has an important role in every learning experience. Then we revisit Paul Darvasi’s high school English classroom (Chapter 7) as his students play, study, and present on the game *Gone Home* as they had other—more traditional—cultural texts. Jason Wilmot (Chapter 8) waxes poetic about “the little pixelated blocks” that his elementary school students design and build with in *Minecraft*, with an extended FAQ that serves as the perfect crash course for a new teacher/player. Megan Pusey (Chapter 9) continues the *Minecraft* theme in a very different way, sharing her experience of designing and implementing a world with different types of (little pixelated) rocks and minerals for her high school science class to identify, and what those students thought about their scientific gaming experiences. John Martin (Chapter 10) encourages his summer campers to explore the forest around them by developing a narrative on Outdoor AR, an open-source platform for designing place-based games, and shares the ways in which his campers began to view and experience their world differently. Laini Kavaloski (Chapter 11) continues the ARIS theme—and closes out the section—by exploring different ways that undergraduate English professors can support their students in designing, building, and sharing multimedia historic local experiences.

Broadening the Genre focuses on teacher pioneers who offer a wide variety of stories and experiences, often with overlap into the other themes, but placed here because their chapters go beyond the other themes. William Vann (Chapter 12) uses a preexisting platform in his middle school classroom when he discovers four original *Mindstorm* robots (from 1994!) in his classroom closet—and he shares the story of dusting them off, designing a project-based learning unit around them, and

handing them over to his students, saying, “Fail forward.” In Chapter 13, James Howell, Colby Tofel-Grehl, Deborah Fields, and Gabriella Ducamp used electronic textiles (also known as e-textiles) during an electricity unit in Howell’s middle school classroom as a way to support English language learners and incorporate different types of expertise (such as sewing) in science class—their students produced beautiful pieces of art while learning about electricity. Lucas Cook and Sean Duncan (Chapter 14) report on the design, building, implementation, and reflection upon *Kingdoms of Adarya*, a behavior-management game, moving beyond the deeply content-driven games presented in the first theme to a game that would support productive student behaviors in a difficult middle school classroom. Tim Saunders and Remi Kalir (Chapter 15) share the detailed story of the development and iteration of two gameful learning opportunities, *Matter Quest* and *Intergalactic Jury*, designed for Tim’s elementary science classes, and reflect upon the power of *gameful learning* more broadly. Steve Isaacs (Chapter 16) focuses on the iterative design process, specifically for middle school game-design classes using *Gamestar Mechanic* and *Portal 2*, but ostensibly for everyone designing games, regardless of platform—with the added bonus of a detailed plan for creating *Portal 2* puzzle levels at the end. Kip Glazer returns with David Ng (Chapter 17) to propose guidelines for conducting teacher professional development along hackathon lines, with six steps that follow the acronym HACK-IT. The section concludes with the return of Seann Dikkers (Chapter 18), sharing his experience as a principal working with special education teachers to “change the game of school.”

Remi Kalir (née Holden) then finishes the book with a provocative, thoughtful, intense conclusion that synthesizes the themes that emerged from these chapters and embeds them within the broader contexts of education, learning, teacher preparation, technology, and agency. Many of the forces unintentionally hidden beneath the surface in the chapters come to the fore here, as he highlights the complex structures in our educational (and cultural) systems.

One of the reviewers of Remi’s conclusion, Sujata Bhatt, brought up some particularly important questions that this book does not answer. In particular, she pointed out that this book relies upon the agency, creativity, and independence of numerous teachers who are making large changes—but only within the small spaces of their classrooms. This book may be supporting other teachers who have the agency, creativity, independence, and time that these teachers did—but what of the teachers who do not have the support of their principal or fellow teachers? What of the teachers who can’t find outside experts to work with or funds to buy materials? If we truly believe these teachers to be uncovering new paths in teaching and learning, how can we not think about how to further improve our educational system beyond these individuals? Well, until Ms. Bhatt asked, I hadn’t considered the role that this book—and these authors, and myself as editor—could (and should) play in evoking larger change. Consequently, these questions are questions we should all reflect on, as we consider what we can do to change policies and teacher preparation such that more—and perhaps someday *all*—teachers have a chance to become pioneers.

Some housekeeping notes: a definition, to preclude the following authors from having to provide one—STEM stands for Science, Technology, Engineering, and Mathematics; and the various photos, screen shots, and so on throughout this book were provided by the authors unless otherwise sourced.

Naturally, I could not have done this alone! An abundance of thanks to the amazing authors who made this book possible—without your stories, your expertise, your pioneering spirit, this book would not have happened. Thanks to my wonderful, patient, and brilliant Advisory Board: Amanda Ochsner,

Beth King, Dan Norton, and Remi Kalir. Extra thanks to Sujata Bhatt, Amanda Ochsner, and Beth King, who dug into the deep and thoughtful concluding chapter by Remi Kalir.

Thanks to ETC Press, particularly Drew Davidson, who quickly answered EVERY. FREAKIN'. QUESTION. that I had about editing and publishing and books and presses and pictures and words and on and on. I considered adding a chapter that was just THANK YOU DREW over and over again, but I decided that folks would probably find that story kind of dull. So I settled for a paragraph with multiple all-caps phrases instead. Seriously: THANK YOU, DREW.

Special thanks to Remi Kalir, who wore many hats for this book. I'm particularly grateful for his brilliance and for his occasional polite prodding as I got married, moved across the country, and started a new job. When my juggling act fell down, he was always there to get me started up again, with grace and aplomb. Remi: You're my favorite. (But don't tell anyone else.)

The incredible cover was conceived and executed by the inestimable Katherine Jameson! You can (and should!) view her full portfolio here: <https://kjameson.carbonmade.com>. Need your own book cover or original piece? Contact her at kathjameson@yahoo.com and prepare for your vision to come to life!

Thanks to our internal and external reviewers—without your insights, this book would be much less beautiful. Alphabetical by first name: Alainya Kavaloski; Alexandra (Sasha) Lakind; Aimee Cardon; Beau Johnson; Brandon Singleton; Cameron Pittman; Colby Tofel-Grehl; Craig Anderson; Emily Miller; Gabriella Anton; James Howell; John Martin; Jordan Thevenow-Harrison; Judith Andrus; Kip Glazer; Lucas Cook; Megan Pusey; Moses Wolfenstein; Paul Darvasi; Rebecca Vinsonhaler; Ryan Martinez; Sean Seyler; Seann Dickers; Steve Isaacs; Susanne Strachota; Tamas Makany; Tim Saunders; Trent Hergenrader; and William Vann. Thanks to my graduate assistant, Yan Tian, who helped with organizing the many documents. And of course: undying thanks to our copy editor, Karen G. Bleske, who has the ability to spot a misspelled word or comma splice from across the room, and went above and beyond in the final throes to keep me on track!

Thanks to the Games+Learning+Society conference for bringing so many amazing teacher pioneers close to hand. The circle closed when the 11th annual Games+Learning+Society conference accepted our Teacher Pioneers symposium—many thanks to the attendees who overcrowded the room and forced us to invade the Great Hall!⁵

Last but never least, thanks to my husband, jtth. Words can never express ...

Finally, a heartfelt mea culpa: I deeply apologize for not having produced a volume that more accurately represents the diversity and strength of teacher pioneers across the world. As Remi Kalir notes in the conclusion:

First, *Teacher Pioneers* is primarily written by white men. There are many educators whose labors of love agitate against an orthodoxy of disheartening norms and veiled expectations (reflected, unfortunately and more broadly, in the fields of computer science and educational technology). The distinctive explorations of these pioneers should be celebrated as central to subsequent volumes.

5. Williams-Pierce et al. (2015). Teacher pioneers: Adventures with media, pedagogy, and play in K-16 learning. Symposium conducted at the 11th annual Games+Learning+Society conference, Madison, WI.

I am considering developing a second volume, given the incredible interest shown in this book prepublication, and I hereby promise that I will do so only if I am able to more accurately recruit and represent voices from all teacher pioneers. If you are interested in contributing to the second volume, please contact me at caro.williams@gmail.com.

Sincerely, and with much love to our readers—

Caro Williams-Pierce (formerly Williams)
University at Albany, SUNY (formerly University of Wisconsin-Madison)
Assistant Professor of Learning & Technology
Department of Educational Theory and Practice