

# Teacher Pioneers: Adventures with Media, Pedagogy, and Play in K-16 Learning

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**Abstract:** This symposium brings together a myriad of K-16 teachers and authors who have designed, built, and implemented digital media or game-based learning in their classrooms. Speaker experiences range from elementary school to teacher professional development, from science to game design to English, from behavioral management to e-textiles, and many things in between! This session will focus on supporting small group sessions with these pioneers, and discussions of the practical aspects of using such technologies in the messy, surprising, and delightful context of classrooms, schools, and other learning environments.

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. (Armstrong & Bezuk, 1995, p. 187)

Teachers and professors across the world are being inspired by new digital tools to create unique and immersive classroom learning experiences, ranging from *Minecraft* to *Portal* to *Civilization*-inspired low-tech games and physical, hands-on learning experiences. While each experimenting teacher designs for his or her own classroom, it is important to better define and understand this design process in context of real teaching so that we can more effectively build training, support, and cultivate innovative practices. Each creation requires a certain amount of technological or game-design know-how, and the support systems for each vary widely. While online communities for some tools have emerged organically, each teacher beginning to build such a space starts at square one: researching the building processes in the tool, brainstorming and designing an environment that fits his or her educational objectives, building the environment or tool, implementing it in a classroom, then re-evaluating the design and *often* rebuilding. This evaluation process is the key to future design efforts: teachers watch their students very carefully for engagement, motivation, and learning, beyond the traditional classroom experience, and strive to use each technology to its fullest potential.

This symposium session presents multiple themed panels by the minds behind a forthcoming curated book, *Teacher Pioneers: Visions from the Edge of the Map* (Williams, Ed., forthcoming). Each presenter has designed, built, and implemented some form of digital media or game-based experience across diverse learning environments ranging from elementary school to teacher professional development, from science to game design to English, and engaging with a wide range of tools and goals, such as behavioral management, e-textiles, or augmented reality.

## Symposium Structure

This symposium will be focused primarily on small group presentations and discussions, à la a roundtable format, with each roundtable organized by theme (discussed below). Presenters will briefly share their classroom experiences with digital media, and then facilitate questions and discussions, with an emphasis on practical and pragmatic advice for designing, building, and implementing in their elementary through higher education contexts. Each attendee will have the opportunity to visit two of the three themed roundtables in their session, and the dis-

cussant will tie together the three themes, highlight some common challenges in doing such work in the classroom, and end with an exhortation to keep pioneering with digital media in the classroom. See Table 1 for the detailed breakdown.

<b>Activity</b>	<b>Participants</b>	<b>Time Allotted</b>
Introduction to symposium, presenters, themes, and structure	Chair	5 minutes
Roundtable Session 1	Presenters organized by theme	20 minutes
Transition from Session 1 to Session 2		2 minutes
Roundtable Session 2	Presenters organized by theme	20 minutes
Discussant comments	Discussant	10 minutes
Closing comments	Chair	3 minutes

**Table 1: The symposium structure.**

The two themes for roundtable sessions emerged from the authors’ stories of their own classroom work, and are *Designing, Building, & Iterating*, and *Broadening the View*.

*Designing, Building, & Iterating* focuses on the successes and failures of designing, building, implementing, evaluating, and/or iterating for specific classroom goals and learning objectives. Presenters’ backgrounds range in grade, technology, content area, and approach, so each presenter will briefly share their particular experience in classrooms, and solicit specific questions from the attendees. If attendees do not have immediate questions, presenters will provide starter topics and work to facilitate a full-table discussion.

*Broadening the View* focuses on the provocative use of digital media in unusual ways, such as redesigning the entire special education program in a school, or “hacking” teacher professional development by reconsidering the traditional structure in light of game structures. Presenters will briefly share their experience and how they have specifically broadened the view, and solicit specific questions from the attendees. If attendees do not have immediate questions, presenters will provide starter topics and work to facilitate a full-table discussion.

## **Participants**

Organizing and presiding over the structure as chair will be Caro Williams-Pierce, a doctoral candidate at the University of Wisconsin-Madison who studies games and learning in mathematics contexts, and is editing the forthcoming book. Serving as the discussant will be Jeremiah Holden, a teacher educator and learning scientist who is author of the *Teacher Pioneers* concluding chapter. Other presenters are described below, organized by themed roundtable.

The roundtable *Designing, Building, & Iterating* will include: Alainya Kavaloski, a doctoral candidate who studies emerging media representations of border conflict and teaches place-based game design at the undergraduate level; Kip Glazer, a high school teacher who uses game creation as a pedagogical strategy in the classroom; Steve Isaacs, a teacher of game design and development who will share how the iterative design process is a common thread and important pedagogical principle visited in all class projects; and Trent Hergenrader, an English professor who uses role-playing games as models for critical thinking and creative writing with undergraduates.

The roundtable *Broadening the View* will include: David Ng, a director of a science literacy lab, with an interest in science translation and communication practices that involve collaborations between scientists and artists; Deborah Fields, an assistant professor of learning sciences who engages kids and teachers in using computational media to make their own personalized creations that bring together learning and interest development; Lucas Cook, a doctoral student who studies learning sciences, who previously designed and implemented a behavioral game in middle school; Sean Duncan, a learning scientist and professor who studies games and learning; and Seann Dikkers, an assistant professor of educational studies who previously served as an administrator and middle school classroom teacher for fourteen years using games and portfolio-based learning pedagogies in his classroom (i.e., Dikkers, in press).

## Significance to the Field

*Teacher Pioneers: Visions from the Edge of the Map* has a provocative premise: Educators can creatively design and usefully research game-based learning, and such approaches to teaching and learning can and should transform schooling. The teachers, designers, and researchers featured in this symposium demonstrate that educators can adopt new tools, like games and other digital media, and methods, like game-based learning and playful pedagogy, to support their students' learning. As the field of games and learning matures, evidence routinely suggests that teachers can adopt games to meet the needs of learners in their classrooms. Researchers, however, know less about how a range of educators—both those in formal school classrooms and those in other designed learning environments—creatively adapt (rather than adopt) various forms of games and playful experiences to amplify the interest-driven needs of diverse learners and also opportunities for disciplinary inquiry. Perhaps most importantly, little research describes educators as creators of novel game designs, as professionals committed to practitioner inquiry, and also as iterative play-testers at the intersection of media authoring, game design, and pedagogical innovation. The participants of this symposium have begun to advance a critical and necessary narrative as games and learning pioneers.

## References

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