Preface

Every book involves a boggling amount of focus and hard work. Because a finalized book is never a sure thing, I always wait until the manuscript as fully materialized—the work peer reviewed and revised, the images properly rendered, and the contracts signed—before writing any preface. After all, anything done earlier is premature if there is nothing to actually introduce. This introduction will include a description of the topic, where it fits in the world today, describe the target audience, and suggest how this book may impact the field. Finally, this preface will introduce the backstory of this work along with an overview of its contents.

Today, it’s all multimedia. Design Strategies and Innovations in Multimedia Presentations takes readers behind the thoughts, designs, and innovations behind the multimedia that people consume today on social media platforms, in online courses, in various presentations (mediated and F2F), in e-books, and elsewhere. Broadly speaking, “multimedia” refers to the uses of multiple mediums of expression or communications. The rarity today is not multimedia but single media: think about the last time you engaged with anything that was just pure and plain text or just imagery. Today, slideshows feature embedded videos, interactive questions, and light games. HTML videos include interactive questions and simulations. E-books contain data visualizations, hyperlinks, interactive simulations, embedded videotaped interviews, and rich media. Online maps are zoomable and pannable; they are viewable in different overlays; there are street views; there are rich layers of data that may be accessed.

Everywhere I turn, there is multimedia richness. Last year, I went to several local conferences and presentations related to the “digital humanities,” a catch-all term referring to the uses of computation and WWW-based affordances to enhance work in humanities fields. Rich data corpuses are being trans-coded, curated, richly annotated, and shared broadly online. Crowd-sourced research is being used to complement traditional channels of knowing. Social media platforms are being scraped for structural data to analyze human interrelationships and content networks. Many of these tools are free or of nominal expense. In the age of the Social Web, there is a lot of hosting capability for users. There are a variety of web browser and software add-ins that contribute to data extraction capabilities from the WWW and Internet as well as from social media platforms. This data may be extracted and used to draw relational networks for structure mining. Multimedia-based richness is being used to enhance research, teaching, learning, and any number of other endeavors.

In online training systems I’ve evaluated, there are avatars (voiced-over by professional trainers) engaging from within virtual environments. There are rich agent-based models that use a wide range of dynamic visuals to evoke simplified worlds. In the multiple massive open online courses (MOOCs) that I’ve taken this past year and into this one, I’ve benefitted from interactive videos, videos annotated with overlays of information, annotated lecturing with online whiteboards (and document cameras),
and media-rich assessments. For various on-campus projects, there are agent-based models that are highly interactive (with wide ranges of possible parameters) and visual. There have been advancements in virtual and game worlds to simulate natural environments, which are being pursued through grant funding. Games for learning are easy to create with authoring tools that have become as easy as inputting contents (and maybe a little basic art). On multiple projects, digital slideshows are easily output for clever interactivity, with visitors able to page through digital slideshows and photo albums.

While there are elements of “wow” in multimedia used for higher education and mainstream learning, more often, the struggles are just to create mere coherence and polish while wielding multimedia authoring tools. Those who work in data visualization have been striving to communicate complex “big data” to researchers and others using multimedia methods because lower-dimensional means are insufficient to convey the ingrained complexity of the data. Proper designs are necessary to help humans intuit meanings from the masses of data in the world, a challenge that Robert Sapolsky has so famously addressed in “People Who Can Intuit in Six Dimensions” (2010).

There is very little an instructional designer does that does not involve some form of multimedia, whether it is in training, instructional design itself, data extractions from social media platforms, data analysis from online survey systems, presenting at conferences F2F or from a distance, or publishing.

The multimedia design aspects. While contents may be born digital on-the-fly, quite a bit of multimedia contents are designed and structured for particular purposes. Even as related authoring technologies have advanced and become much easier to wield (often without much needed in the way of direct coding), designing meaningful and effective multimedia requires plenty of skills: in design, drafting, pre-testing, and effort.

New technologies are created to enable easier capture and sharing of information with others. Some recent examples are screen capture tools (both static and full motion) that harness the computer and built-in webcams and microphones (or mobile devices); and image- and video-editing tools. There are new technologies that enable digital authoring—whether agent-based modeling tools, 3D modeling, gameplay design, diagramming / drawing tools, animations, and others. On a daily basis, I am dazzled by the various multimedia elements while aware of the technologies and design efforts to create these multi-media-rich experiences. The sophistication of authoring tools for the creation of multimedia-based digital learning objects has enabled subject matter experts (SMEs) themselves to create what they want to their exact specifications. For an instructional designer, he or she is in a constant race to maintain relevance.

The goal of this book is to capture some of the methods of designing multimedia to present information, learning, sensations, and experiences. While most people consume multimedia often on a daily basis through the Web and Internet, many may have no idea of the amount of resources, effort, savvy, and design that goes into this creating multimedia. There are usually also gaps in understanding the rules that guide the work—law-based rules of privacy (for the people featured in multimedia), copyright and intellectual property protections, accessibility, and others; further, there are informative guidelines of designing for human perception, cognition, memory, and learning.

De facto media is “multi” by nature, and the term “multimedia” is redundant and likely dated. This topic may be better represented as something about “digital” contents. Multimedia design and delivery methods evolve quickly. The technologies themselves are constantly evolving. Vint Cerf has recently warned of the risks of the loss of digital contributions and proposed a sort of “digital vellum” to ensure that multimedia created today is accessible to people in the future. The dependencies required to access digital contents—the digital file types, basic computer languages, the computer operating systems, the
computer hardware—are in constant motion, and at any one time, there are contents lost to large groups of people through the digital “slow fires.”

The romance of an Idea. The initial impetus for this work involves the romance of an idea, simply, explaining multimedia design. The romance is almost always a necessity because a rational cost-benefit consideration would likely result in not pursuing the project. A book project takes on about a year in development time, and sometimes, longer; in this case, Design Strategies and Innovations in Multimedia Presentations is coming in about a half-year later than initially planned. Actual royalties for the lifespan of a book will not even cover the first weekend of invested work in creating a book. Suffice it to say that the thrill of a book’s publication and its going out into the world overbalances the other way and makes up for the huge investments in effort.

The Chapters

Nancy Hays provides a historical sense of multimedia in learning leading up to the present in her excellent foreword, “Ancient Practices Reborn in Digital Multimedia.”

The book itself consists of six parts, as follows:

Part 1: Exploring Online Multimedia
Part 3: Enhanced Technological Tools for Multimedia Designs
Part 4: Considering Human Needs in Multimedia Presentations
Part 5: Digital Visualizations for Learning and Knowing
Part 6: Real-World Cases in Innovative Multimedia Applications

The first section describes the informative uses of some online multimedia. There are three chapters in Part 1, “Exploring Online Multimedia.” The opening chapter is part of a multi-year study of the Hidden (Deep) Web and its contents. Manuel Alvarez Diaz, Victor Manuel Prieto Alvarez, and Fidel Cacheda Seijo’s “The Evolution of the (Hidden) Web and its Hidden Data” describes rich techniques used to understand the contents of the hidden Web, including the identification of multimedia based on identified file types. Chapter 2, “Creating Extended-Form EventGraphs from Social Media using Publicly Available Software Tools,” describes strategies to map an in-world event based on the signals available from social media using various extractive software tools and methods. In this work, Shalin Hai-Jew builds on prior works that used tools to map participants chatting about events and their messaging from microblogging sites; the “extended form” perspective strives for a fuller view. Hai-Jew’s “Eavesdropping on Narrowcast Self-talk and Microchats on Twitter,” Chapter 3, describes the phenomena of individual self-looped self-talk on Twitter as well as small-group conversations. This chapter shows some of the more common uses of microchatting sites not just for popular and trending communications phenomena but quieter forms of communications to meet human needs.

In the next section, the focus is on practical design approaches to multimedia. Part 2, “Theories, Models, and Practices for Multimedia Design and Deployment,” consists of three chapters. Lijia Lin, Amy Leh, Jackie Hee Young Kim, and Danilo M. Baylen’s “Leveraging the Design and Development of Multimedia Presentations for All Learners” (Chapter 4) engages some solid strategies for the effective design of multimedia for learning. Hattie Wiley’s “Audio for Multimedia Presentations in E-Learning”
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(Chapter 5) provides a highly readable approach to considering audio in instructional design based on years of design experience. This work refreshingly and expertly addresses a perceptual channel that is not often addressed in the research literature. Brent A. Anders’ “Use of Video to Enhance Education” (Chapter 6) provides a practical look at practical considerations in designing video for learning.

The third section focuses on technological tools. Part 3, “Enhanced Technological Tools for Multimedia Designs,” is comprised of two chapters. Hai-Jew’s “Static Text-Based Data Visualizations: An Overview and a Sampler” (Chapter 7) summarizes a range of text-based data visualizations created from a suite of complementary tools used to represent research. Chapter 8, “Using Microsites as Live Presentation Platforms (with Three Embedded Real-World Cases),” describes the application of online microsites to deliver multimedia contents for use in live presentations. Microsites are those that go beyond an online presentation but include interactivity and often residual resources that may be left online as learning resources.

Part 4, “Considering Human Needs in Multimedia Presentations,” contains two chapters that focus on the human element in the consumption of multimedia. Amy Gaimaro’s “Promoting Engagement with Online Presentations” (Chapter 9) addresses the very real need to capture learner attention and engagement. This work uses a generational model to understand learner needs and suggests some core preparatory and design approaches. In Chapter 10, Duygu Mutlu-Bayraktar and Servet Bayram use an eye-tracking-based research methodology to understand how particular multimedia layouts engage human attention. In “Evaluation of Situations Causing Split of Attention in Multimedia Learning Environments via Eye-tracking Method,” this authoring team empirically builds on the research of multimedia and human attention.

In Part 5, “Digital Visualizations for Learning and Knowing,” there are two chapters that focus on the uses of multiple perceptual channels for learning and knowing. Chapter 11, “Conducting Semantic-Based Network Analyses from Social Media Data: Extracted Insights about the Data Leakage Movement,” focuses on the application of network analysis to online multimedia data to extract public expressed sentiment. In this work, Hai-Jew uses the data leakage movement and the public discussions around this issue as a “seed” for the research. She focuses on the tight integration of text and visual information as a way of creating awareness and knowing. Chapter 12, “Grounding Cyber: Querying Media Platforms, the Web, and Internet for Geolocational Information,” describes how online information may be converted into geolocational data and related back to the physical world. Here, Hai-Jew shows cyberspace as not quite cyber but fully grounded.

The final section, Part 6, “Real-World Cases in Innovative Multimedia Applications,” contains one work. Hai-Jew’s “Rolling NVivo 10 out to a University’s Research Community: Live Trainings and a Semantic-Web Friendly E-Book” describes the use of the Scalar platform to support the rollout of a qualitative and mixed methods data analysis tool to a university. This chapter highlights the importance of harnessing technologies in an innovative way to achieve instrumental aims in a university context.

The text development cycle. Ironically, the editing of a print book is in some ways one of the lesser multimedia-rich endeavors, and there is something pleasantly old-fashioned about a print text (even if most copies of it go out electronically). In a sense, text alone may feel like a kind of sensory deprivation in the current age. Initially, it was thought that this text could address a range of approaches to multimedia presentation: interactive slideshows, multimedia-enriched surveys, games and simulations, narrations, data visualizations, web conferencing presentations, and augmented reality experiences. There were hopes for mobile design elements. It was hoped that there would be some multimedia FX or special effects. I wanted writing on various types of strategies to convey truth—through skilled multimedia-supported
artifice. There are so many ways to package information in digital formats. Ultimately, I wanted to capture a sense of where multimedia design is today and how multimedia may be deployed creatively and effectively in different contexts.

When the initial call for chapter proposals went out, I had high hopes that there would be rich angles and insights, given how pervasive multimedia is in the educational and training context and beyond. The tactic was to “cast a wide net” and to be open to the various angles that various writers originated. Some initial chapters that were submitted did not meet book standards for originality, relevance, focus, or overall fit, and the works did not have sufficient cores to build on for revision. The skill set needed to create a coherent chapter based on direct author insights and experiences is a rare one, which requires years to build and maintain. Indeed, much of what is researched and written does not actually make it into peer-reviewed and edited publications. (Ideally, the process should be a supportive and constructive one, and there should be lessons learned from the process—to ultimately enable the author to publish in a quality reviewed work one day.) Another challenge with this text involved a number of authors who proposed topics with workable ideas but whose lives became too busy, and nothing was ever submitted. Follow-through for promised work is also not a given, and there are always some number—even quite renowned and well published individuals—who have too many other commitments to finish the work. In the planning of any book, such “drops” are planned into the final. It can be very difficult to change up the incentives for authors, and I will be the first to admit that the inputs to a chapter are extraordinary.

All the prior challenges were to be expected. What was a surprise to me was how I had miscalculated the pool of potential writers. In fields where there is broad knowledge, such as this one, I assumed that there might be interest in pursuing creative designs and technological applications. There is lot of talented individuals and teams working in various fields that engage multimedia, but it may be that there is less interest in writing for publication. There is certainly tough competition for author talent, and authors are free agents who have every right to shop their work. Sometimes when there is a lot of something going on people do not seem to have the time yet to process what they are doing and therefore do not have something to share with others. Anyway, I really am not sure why this work did not attract as many authors as I would have liked. Ideally, there would have been a wider diversity of works.

I am very delighted that this work did ultimately “make.” There are costs to all enthusiasms, and as with all book topics pursued, the works are of interest to me. Design Strategies and Innovations in Multimedia Presentations is a culmination of knowledge gained from years in the instructional design trenches and enthusiasms that have been enduring.

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