Book Review: The Sage Handbook of E-learning Research (2nd ed.)

Editors: Caroline Haythornthwaite, Richard Andrews, Jude Fransman, and Eric M. Meyers (Eds.). (Los Angeles, CA: Sage, 2016, 606 pages)

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Anyone interested in gaining insight regarding recent theories, trends, and applications of e-learning, as well as methods for investigating impacts of e-learning pedagogies would appreciate the wealth of ideas presented in *The Sage Handbook of E-Learning Research,* edited by Caroline Haythornthwaite, Richard Andrews, Jude Fransman, and Eric M. Meyers. The authors challenge historical notions regarding how people learn, definitions of literacy, and research methods. They encourage readers to reflect upon and dialog about e-learning issues. Countless examples of studies are summarized and referenced. The book will prove useful to educators in many arenas. Digital practice administrators, instructors, and researchers will gain insight, and doctoral students will benefit from the authors' perspectives that may be fresh and beyond the scope of their studies within their institutions. In addition, I argue here that, given the ubiquity of online tools and information, the book is a must-read for any administrator, instructor, or student of education who wants to more deeply understand current learning ecology.

Reading the book in its entirety reveals consistency among authors regarding theory to frame research as well as methods that apply. Broadly speaking, each places e-learning in the realm of socio-technical practice and connectivity among people, networks, ideas, cultures, learning contexts, and resources. Authors encourage explorations of the role that communicative artifacts and contexts play in formal and informal educational settings, framing such explorations in materiality. Throughout the book, authors encourage use of analytics to facilitate broad adoption of action research methods and explorations of data driven program evaluation and formative and summative learner assessments. Most authors touch on ethical concerns in the digital age. The book is divided into seven parts: *Introduction*, *Theory*, *Literacy and Learning*, *Methods and Perspectives*, *Pedagogy and Practice*, *Beyond the Classroom*, and *Futures*. Each part focuses on creating for the reader a "coherent view of what constitutes research in the field" (p. 3).

Chapter 1 provides a comprehensive introduction to topics covered in subsequent chapters. In chapters 2 to 5, authors reference theories including socio-technical, socio-political, socio-material, social literacy,

actor-network, communities of practice, cultural historical activity, connectivism, critical, and sociocultural practice variation. These theories share the perspective that "learning occurs when knowledge is actuated through the process of a learner connecting to, and providing information in, a networked learning community" (p. 45). Technologies play important roles in expanding learning communities by creating and shaping complex patterns of mobility, connection, interaction, and collaboration, and providing for powerful ubiquitous learning in a broad learning ecology. In chapter 4, authors present three criteria for a theory of mobile learning. These criteria may be applied by researchers to better understand the impacts of any technology: "distinguish what is special about mobile learning compared to other types of learning activity" (p. 64), "embrace the considerable learning that occurs outside offices, classrooms, and lecture halls" (p. 65), and "take account of the ubiquitous use of personal and shared technology" (p. 66). Current technologies open the door for research that explores

> how learning can be transformed for the mobile age through a dialogue between two worlds of education: one in which knowledge is given authority through the curriculum, the other in which it emerges through negotiation and process of coming to mutual agreement (p. 78).

Digital tools for writing and reading are changing definitions of literacy. Definitions of literacy discussed in chapters 6 to 10 extend the old-fashioned definition of literacy as the ability to read and write to include multi-language reading, writing, and teaching with games, screens, online environments, visuals, media, information, and digital tools. Each author in part III focuses on the value of social interaction and learning involvement in active meaning-making. A proficiency described in an operational definition of literacy is ability to establish cognitive, social, and teaching presence in asynchronous discussions. And authors of chapter 7 make the case for curricular incorporation of games rather than gamification. They propose studying games as cultural forms in their own right, just as literature, film, and other art forms might be studied. Authors suggest that media literacy, including game literacy, has three aspects: cultural, critical, and creative. The motivational benefits of games can lead to high levels of engagement; virtual learning environments afford new opportunities for immersing learners in student-centered, collaborative problem-solving, and can be designed to incorporate substantial guidance and require scaffolded self-regulation on the part of learners.

Chapters 11 to 15 provide descriptions of different research methods and examples of studies in which researchers apply those methods. The authors emphasize non-experimental methods given the significant variation in characteristics of learners and quality, genre, and complexity of e-learning materials. For instance, ethnographic approaches focus on "the particular, the emergent, the material, and the situated – elements of the complexity of this phenomenon [of packaged, endlessly transferable, instructional objects] that closed instrumental methods struggle to capture" (p. 294). Similarly, anthropological methods and phenomenography focus on social systems rather than skills frameworks providing for deep understanding. In social network analysis (SNA) researchers focus on connectivity between people and take a relational approach to explore nodes, relations, ties, and networks. Diagrams representing whole networks indicate density of interactions, path lengths, cliques, and structural holes. Connectors among people, ideas, and resources are interpreted. Such studies are used to design interventions, find activity antecedents, predict learning outcomes, and understand the nature and meaning of learning ties. Longitudinal multimodal journaling and discourse analysis are provided as example approaches to robust data analysis. All of chapter

12 is devoted to learning analytics and other chapters describe research that benefitted from existing data sets to explore correlations, association rules, and sequential patterns in big data.

Inquiry about e-learning literacy and designs, social media, games, virtual worlds, and lifelong learning beyond the classroom in open educational resources, libraries, and museums are addressed in chapters 16 to 25. Authors emphasize that beyond brick-and-mortar or virtual classrooms, methodologies that capture the dynamic and collaborative aspect of interactions between and among learners are required for researchers to identify and analyze learning processes in such environments: "As our world becomes increasingly interconnected and information-rich, people are using online environments and tools to reach out and connect in new and powerful ways" (p. 354). Cultures of participation, sharing, openness, and collaboration are at the forefront of learning environments that bridge social relationships and communities with resources, knowledge, and information. Authors in these chapters call for new theories to underpin participatory pedagogy, defined as "forms of learning and teaching that harness the use of digital media and participatory cultures and action" (p. 416). New pedagogies would acknowledge the importance of preparing learners to be media managers and producers "in the development of voice, agency, personalization and an ethical stance to their own practices" (p. 416).

In the final book chapter, "The Future of E-learning," the authors define e-learning as "a combination of methods, structures and networked electronic tools orchestrated into systems that bring about, or are intended to bring about, learning" (p. 537). The authors emphasize that research on e-learning explores human systems of activity rather than electronically driven activity. We are in the era of connectivist pedagogies with distributed and networked learning and knowledge. On page 544, the authors make a surprising and insightful statement regarding the fundamental difference between online and face-to-face education that must be considered as the context for e-learning research. They proclaim that a shift in control from instructors to learners is the fundamental difference. Given the age-old suggestion that learners control their own learning, this statement should excite educators regarding the potential for e-learning: "On the Internet, almost everyone is a teacher and everyone is a learner, whether intentionally, effectively, accurately, reliably, or not" (p. 538). Taking advantage of increased learner control and flexibility will be facilitated by the eight e-learning pedagogies enumerated in this final chapter. In addition, the authors predict six elements and characteristics of future pedagogy: It will be focused heavily on the individual learner; distributed, technically, socially, and organizationally; crowd-driven and emergent; and integrated, just-in-time, and authentic. Courses will have a less significant role, and learning will be divorced from accreditation.

Authors of chapters in *The Sage Handbook of E-learning Research* celebrate the changes that e-learning has brought to formal and informal education. What the book lacks is exposition on theories and research on the effects of new technologies on human development, learning, and the brain. In the next edition, and I do hope there will be another edition, I would like to see discussion about potential societal dangers and limitations of social media and how to mitigate them in formal and informal learning environments. Inclusion of authors who explore the impacts of new media and the critical role that education plays in preparing users to be able to evaluate what may be controlling our thoughts would be appropriate. Explorations of human interactions with technology's impacts on social change and how to design experiences that empower learners to be critical users of technologies would be of value. E-learning

educators and researchers would be well advised to facilitate critical thinking concerning the various media bombarding all of our nervous systems. Authors such as Susan Greenfield, Sue Halpern, Nicholas Carr, Richard Andrews (an editor of this book), and David Staley have explored how "the body, in collaboration with its tools, can act on the environment and engender new ways of thinking" (p. 11). Both positive and negative impacts might be explored in another edition of a handbook of e-learning.

The Handbook provides for widening understanding of learning technology as socio-cultural practice anywhere and anytime. In the interest of understanding the complexity of the learning landscape, emerging theories explored in the book continue to replace behavioral, cognitive, and constructivist theories and challenge the usefulness of positivist research and teaching methods. I highly recommend this resource for educators and researchers. Each chapter provides something new and interesting, and as a whole the book provides a foundation of theories that frame research and methods for exploring e-learning. Academic Affairs level administrators who read this book would better understand the influence of new technologies that are driving learning experience beyond the realm of their educational institutions and their shared-governance structures. New technologies empower learners to take control of their own learning. How educational institutions respond to this shift in control is a significant, tacit question raised throughout *E-learning Research*.