International Women Online Journal of Distance Education

January, 2017 Volume: 6 Issue: 1 Reviews: 01 ISSN: 2147-0367

THE WILEY HANDBOOK OF LEARNING TECHNOLOGY

Edited by
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Published in 2016 by John Wiley & Sons, Inc.
595 pages. ISBN 9781118736432

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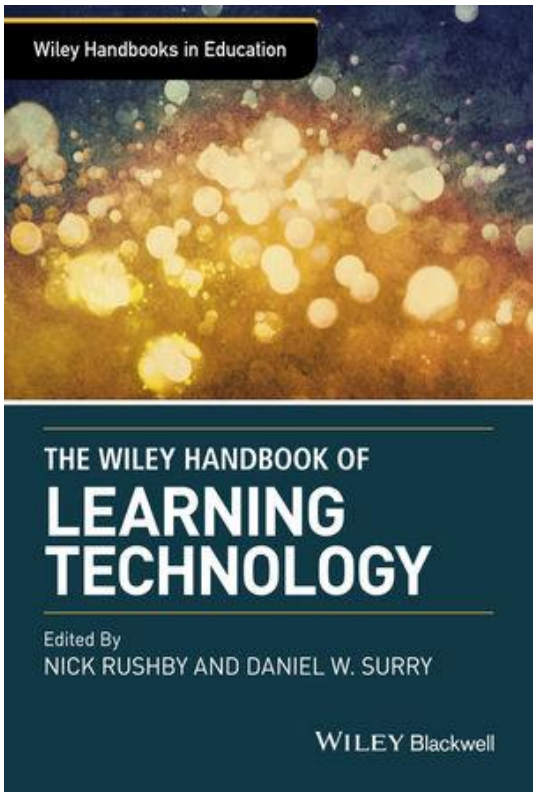
INTRODUCTION



Edited by a star-studded lineup of scholars and experts from around the world in the field of Learning Technologies (LTs), this authoritative reference book specifically focuses on the uses of LTs in diverse countries and contexts at various levels of application, pulling together the dimensions of inclusive curriculum design, instructional LT implementation, pedagogical frameworks, innovative learning methods, learning environments, limited resources and dystopian/utopian futures. As such, covering both theoretical and practical aspects, the book provides an accessible, solid, up-to-date and comprehensive overview of the LTs, with concrete applied experiences from the field, allowing readers to have a firm grasp of it.

Various LTs are deeply analyzed from multiple perspectives in 29 chapters. The book synthesizes a diverse range of findings and views of researchers, scholars, practitioners, curriculum designers and innovators from different nations in the light of their discussion around the key issues involving the current and future status, possibilities, advantages, drawbacks, concerns, and limitations of LTs. These key issues are elaborated in the following chapters:

Chapter 1: Mapping the Field and Terminology

Framing the specific focus and scope of the whole book, Chapter 1 lays out the fundamental concepts of learning technologies by providing an overview of what is meant by "learning technology," how people learn, and the historical development of the field. Citing Moore's (1999) analogy of a chasm as a break point in the innovation curve, the authors discuss some strategies to effectively cross this chasm. They also present and discuss most popular LTs, and the dizzying rate of new technology development. Pointing out to the difficulty of coping with the development of new technologies, they define two essential types of learning technologists: those concerned with the technologies that can be used for learning, and those who are concerned with applying those that they have mastered.

Chapter 2: How People Learn?

This chapter discusses the human cognitive architecture and learning processes as they relate to LTs, the interrelationships among types of learning, related instructional components, key instructional principles, and media. He goes on to discuss self-regulated and self-directed learning, in the light of metacognitive prompts for monitoring and control, underscoring the crucial role of regulative processes as they govern learning. He asserts that the importance of multidisciplinary teamwork is increasing and therefore should be reflected in educational programs.

Chapter 3: What is Technology?

Instead of simply providing lists or taxonomies of theories, this chapter relates the field of LT to traditions of research where technology theories are more refined. The author takes a higher level view of technology to set specific technologies into a more helpful context.

Chapter 4: Learning Theory and Technology: A Reciprocal Relationship

This chapter explores a synergistic relationship between technology and learning, and describes how theories, instructional practices, and technology tools have evolved in a reciprocal way. Table 4.1 in this chapter sums up well the key instructional differences among behaviorism, cognitive information processing, and constructivism, which are explained in detail in seven pages.

The final focus of the chapter is the changes in theory prompting changes in tools and changes in tools prompting changes in theory, which provides a very useful conceptualization to think along regarding LTs.

In an effort to bridge the gap between theory and practice, the authors strongly recommend considering "how to create new types of learning experiences that take advantage of the affordances of the tools currently available."

Chapter 5: Evolution of Learning Technologies

McPherson skillfully walks us through the ongoing evolution of LTs. She tracks the development of LTs over the years, breaking the periods of development into specific decades and years: the 80s were the time for programmed learning and multimedia, early 90s saw the development of hypertext and simulations; 1993 was the year for the next major leap, the Internet; in 1995 learning systems became popular; 1998 was a critical turn for m-Learning; 2000 for gaming technologies, 2001 for OERs, 2004 for social and participatory media, 2005 for virtual tools, 2007 for e-books and smart devices, and 2008 for MOOCs. Finally between 2012 and 2014, Big Data and Learning Analytics gained huge popularity and interest as tools to identify learning patterns to improve pedagogy.

Chapter 6: Learning Technology at Home and Preschool

Plowman discusses the particular requirements and perceived weaknesses of preschool children followed by a consideration of the close relationship between learning and play, and what this means for the use of digital media.

Some of the differences between practices in preschool and home settings are outlined, concluding with reflections on the design of digital media and possible future developments.

She urges educators to link the digital media used by children at home and school, and use it as the basis for synthesize technologies used for learning and those used for play.

Chapter 7: Problem Spaces: A Framework and Questions for Critical Engagement with Learning Technologies in Formal Educational Contexts

In this chapter the authors set out the genealogy of a conceptual framework for the critical analysis of learning technologies in formal education contexts with a particular emphasis on schools, drawing on significant research and theory in this field.

Taking an antithetical stance to instrumental or deterministic views of LTs, instead of a narrow focus on measures of outcomes, the chapter provides a generic framework of critical questions that practitioners, researchers, and policy makers can use to enlighten the complex and nuanced domain of the use of LTs in formal education. They further caution that, if the micro, meso, and macro complexities they outline are not critically addressed, the educational opportunities offered by LTs will remain limited.

Chapter 8: Learning Technology in Higher Education

Chapter 8 predicates its LT analysis on six dimensions: students, instructors, learning design, support, technology, and institution. It focuses on the diverse needs of students, why some educators embrace technology while others do not, what the design implications of technology are for learning, what support students and instructors need, what LTs are available and how they can be best used, and what kind of institutional and policy frameworks are needed for successful implementation of LTs. Cronje concludes that accommodating both rhizomatic learning and high levels of choice for students through innovative LTs is a must if we want them to develop their unique skill sets for better job readiness. Both learners and teachers need support to handle the rapidly changing educational and socio-economic environment, and technology is both the cause and the potential solution for that.

Chapter 9: Learning Technology in Business and Industry

Focusing on the bigger picture of learning in the workplace at the organizational level, Chapter 9 discusses how technology is currently being used, and then moves on to address emergent directions and missed opportunities in uses of LTs to support organizations. Ultimately, the goal is to achieve a "performance ecosystem," in which individuals are supported with full suite of resources both in the moment of performance and in the long term.

Chapter 10: Educational Technologies in Distance Education: Off-campus and Online, but on Course?

In Chapter 10, Ryan and Latchem explore the 1400-year-long history of distance education. Drawing on their combined 60 years of international experience of DE in higher education, the authors chart its origins and progression from correspondence study to online learning. They consider the issues of "hype and hope" in adopting new technologies, quality assurance, professional development, leadership, management, and research. They recommend further studies on the efficacy, scalability, and transferability of new methods and LTs, and encourage publicizing the weaknesses and strengths emerging from practice.

Chapter 11: Learning Technology and Lifelong Informal, Self-directed, and Non-formal Learning

This chapter illustrates how formal and non-formal education can be expanded and improved through educational technology, by accounting for and integrating its design, development, utilization, management, and evaluation dimensions. Particular emphasis is placed upon the need to synthesize research and practice, and to provide evidence of the needs, successes and failures of using LTs for lifelong learning purposes.

Chapter 12: Learning with Technologies in Resource-constrained Environments

Chapter 12 centers on LTs in resource-poor environments. Though most common in developing countries, such limited environments are not restricted to these countries, and they are heterogeneously dispersed within national borders as well. The authors first provide an overview of learning in resource-constrained environments, ensued by an explanation of what LTs involve, then a discussion of the theoretical perspective. Next, they tackle the educational challenges in such environments and how LTs have been used in them for learning, stressing the importance of tapping into local and prior knowledge. The authors then demonstrate how their pedagogical model can be used to integrate social/cultural capital and pedagogical goals in a contextually sensitive way by utilizing ubiquitous technology.

Chapter 13: Competencies for Designers, Instructors, and Online Learners

Chapter 13 discusses the competencies required by learning technologists. The authors use the competencies from the International Board of Standards for Training Performance and Instruction (IBSTPI) as a framework for mapping professional competence with specific tactics currently enabled by the technological revolution with regard to evolving pedagogy, emerging digital technology, and changing learner characteristics. The chapter presents the standards and current issues affecting learning technology, and blends them together to inform competent practice as a designer and instructor. The chapter also deals with the competencies required by the learner, stating that learners should be active participants in the learning process.

Chapter 14: Digital Learning Environments

Focusing on digital learning environments, Veletsianos explores four key concepts and issues surrounding digital learning environments: various organizational structures for learning environments (e.g., groups, networks, and communities), the design of meaningful and effective learning experiences, the approaches of guided versus minimally guided instruction within digital learning environments, and, finally technology's lack of neutrality within the context of appropriated and repurposed learning environments.

Chapter 15: How to Succeed with Online Learning

In Chapter 15, Green exemplifies a specific environment of online learning and providers a series of very practical strategies and tactics to make learning succeed, underscoring the constant need to maintain a supportive learning environment for learners.

Chapter 16: Diversity and Inclusion in the Learning Enterprise: Implications for Learning Technologies

This chapter explores how digital technologies can support learning within diverse population of learners, and contribute to the creation of equitable learning experiences, and inclusive teaching practices and learning spaces.

Chapter 17: Sins of Omission: The Search for Missing Signs by Abandoned e-Learners

Gannon-Cook presents questions related to the lack of access through "sins of omission," the absence of culturally-relevant graphics and metaphors in online course design. These questions are rarely asked and there is scarce research on cross-cultural theories and semantic tools, such as semiotics in education. For students with diverse ethnical backgrounds (who represent the highest rates of attrition from online courses) such research could unlock the door to their learning, particularly by reintroducing cultural keys that open their minds to be receptive to new learning, and ultimately, could help their retention in online courses.

Chapter 18: Equity, Access, and the Digital Divide in Learning Technologies: Historical Antecedents, Current Issues, and Future Trends

Jones and Bridges analyze equity and access in detail, refuting the assumption that access to the essential technologies is available to all. In some cases, the new technologies are more available than the older ones. In regions like West Africa, the fixed-wire telephone system is frail or nonexistent while mobile phone coverage is more widespread and can be used for distance learning. Reliable high-capacity broadband access may not be available for everybody either, which creates a digital inequity. Even in developed countries like the UK there are large rural areas where internet access is problematic.

Chapter 19: University Learning Technology Control and Security: Requires Teamwork to Succeed

Drawing attention to the potential pitfalls in the control and security of technology-based learning systems, Tharp and Chamberlain caution against the risks that sensitive personal information can be compromised through inaccuracies or fall into wrong hands unless proper measures are taken.

Chapter 20: The Design of Learning

Spikol analyzes the struggle to balance the new generation of theories while providing innovations for everyday use in various learning situations.

He argues that learning technologies need to have a broader approach to design as a means to overcome the limitations of these challenges.

Designing for learning is a different effort than the design of other products and services because learners have diverse needs that go beyond the needs of other types of users.

Chapter 21: Mobile Learning and Social Networking

Traxler's chapter on mobile learning demonstrates that there are real possibilities for making transformative changes to education and training even if most of the innovation so far has been limited to finding new ways of providing the same experiences.

Chapter 22: The Utility of Games for Society, Business, and Politics: A Frame-reflective Discourse Analysis

Chapter 22 explores the utility of frame-reflective discourse analysis in society, business and politics to provide a basis for gaining insights into how serious games can be used effectively.

Chapter 23: The Investment in Learning Technologies: Evidencing Value for Money?

Focusing on the financial issues of LTs, a detailed, convincing case is made by Massy, showing the potential cost saving qualities of learning technologies, presenting evidence for their value for the money invested.

Chapter 24: Technology Planning in Schools

Chapter 24 discusses the planning needed for the implementation and integration of technology into K-12 schools.

Chapter 25: Surviving the Next Generation of Organizations – as Leaders

Chapter 25 bridges boundaries between educational technology and educational leadership fields, and thus presents a conceptual synthesis for future education leaders.

Chapter 26: Futureproofing

Chapter 26 analyzes the factors shaping education and society, beginning with a broad overview on changes in learning and education in the future, and then looking at specific strategies for preparing for these changes.

Chapter 27: Towards a Research Agenda for Educational Technology Research

With suggestions for LT research, chapter 27 stresses that a key part of the learning technologist's work is to be aware of what has gone before in research and technologies, to recognize the strengths and weaknesses of earlier work, and to be able to build on that work for current and future projects.

Chapter 28: The Dystopian Futures

Selwyn portrays a dystopian future by providing us with food for thought about the deprofessionalism of teachers, the disengagement of learners, the dumbing down of younger generations, the devaluation of knowledge, and increased surveillance and accountability. He concludes that learning technologists make good use of dystopian visions of LTs by engaging actively with them and exploring how best to cope with them, which involves reorienting the LT mindset to accept the social world as is, recognizing its inability to provide definite technological answers to indefinite problems.

Chapter 29: Utopian Futures for Learning Technologies

Childress projects a utopian future by overviewing technological utopianism and presenting a model for a utopian future in LTs, then talks about the key factors for change, the seven shifts in learning environments, and the ten principles of applying emerging LTs in organizations. Finally, he reviews the IFTF six emerging themes (open digital resources, experiences, smart machines, new foundations, socialstructed work platforms, and global learning arbitrage) and lists emerging technologies before presenting his vision for future LTs.

CONCLUDING THOUGHTS

Covering both the technology of learning and the use of technology in learning, this book tackles timely and controversial subjects, such as gaming and simulation, security, lifelong learning, distance education, learning across educational settings, and the research agenda. It is designed to serve as an introductory resource for LT novices, a comprehensive reference for scholars and researchers, and as a practical guide for education practitioners. With astounding advances in learning technologies, the world is moving towards increasing interconnectedness, networking, and ongoing participation in all types of online platforms.

There is an increasing pressure on learning technologists and educators to use LT tools in a more diversified and larger scope for increased authentic learner participation. LTs provide innumerable learning opportunities for learners. This book pulls together important research on LTs from the perspectives of inclusivity and accessibility, course design/redesign, from diverse geographical contexts and instructional levels. Furthermore, presenting novel applications of LTs, this book makes a remarkable contribution to the field by filling a niche. This book is also an excellent comprehensive guide for practitioners since it provides quite a few applied frameworks and models with clarifying graphs, tables, and figures. It also demonstrates the future potential of LTs to provide educational alternatives to improve distance learning. Thus, this book is a priceless reference for those aiming to gain a profound grasp of the current LT work and those who wish to catch a glimpse into the future uses of LTs.

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Currently the PA to the Rector of Anadolu University (AU), Harun SERPIL, earned his Ph.D. in the field of Curriculum & Instruction at the University of Wisconsin-Madison in 2016. He has twenty years of language teaching and assessment experience at collegiate level, and recently has focused more intensively on academic text translation. Among his research interests are mobile learning, multicultural education, learner diversity, critical race theory, critical discourse analysis, deep education, social reproduction, curriculum theory, and social justice.

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