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| **Chapter 1**            | **Seeing Beyond the Screen: A Multidimensional Framework for Understanding Digital-Age Literacies** | **Earl Aguilera, California State University, Fresno, USA**  
**Olivia G. Stewart, St. John’s University, USA**  
**Areej Mawasi, Arizona State University, USA**  
**Luis E. Pérez Cortés, Arizona State University, USA** |
|                          |                                                                      | This chapter outlines a multidimensional framework for theorizing digital-age literacies—one which considers the content, procedural, and contextual dimensions of literacy practices enacted through and around digital technologies. The authors then provide an overview of three empirical studies that illustrate the application of this framework to understand the integration of digital technologies and literacy pedagogies. The authors offer their experiences as classroom teachers, teacher-educators, learning scientists, and literacy specialists working to understand and support the literacy and language practices of learners in the 21st century. The goal of the chapter is to illustrate the value of shifting conversations about digital technologies away from notions of moral panic and techno-idealism, and instead toward a renewed focus on technology-mediated social practices that shape what it means to be and become literate in contemporary society. |
| **Chapter 2**            | **Talking Through the Design: Supporting Students’ Digital Video Composing Processes Through Dialogic Engagement** | **Nichole M. Barrett, University at Buffalo (SUNY), USA** |

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1. Foreword
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Section 1
Theoretical Frameworks
In this chapter the author details the experiences of one high school English language arts teacher, Mr. Jeremiah Johnson, and the literacy pedagogy he enacted in order to support students as they composed with digital video. The author will highlight the ways that a dialogic, design-based pedagogy gave students in an after-school film club the opportunity to explore digital design and navigate compositional challenges, all while retaining autonomy over their projects. The chapter adds to the scholarship by drawing attention to social literacy practices and process as transformational meaning-making opportunities for students that foreground individual identities and literacies.

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Tracey S. Hodges, University of Alabama, USA
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In considering the intersection of digital texts and reading comprehension, teachers now need strategies and instructional tools that promote deep, critical thinking of multimedia text. One area of literacy instruction that can increase students’ reading comprehension of multimedia texts comes with understanding, analyzing, and evaluating text structures. As a first step to understanding what research says about integrating text structures with digital literacies, the researchers conducted a systematic literature review of articles published between January 1, 2000 and December 31, 2017. While new literacies, visual literacies, and other digital media show increased prominence in education, the researchers identified only eight studies focusing on how text structures are unique to digital content. In the present chapter, the researchers analyze benefits and new language demands presented by these studies. Additionally, the researchers discuss implications for teacher practice and pedagogy when intersecting text structure instruction with digital literacies.

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Lourdes H Smith, College of Community Innovation and Education, University of Central Florida, USA
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The role of literacy and learning is easily incorporated into many areas of using technology in the classroom. The purpose of this book chapter is to share results from a research study that provides a framework for teachers to develop their knowledge about open educational resources (OERs) as digital texts for developing students’ disciplinary and literacy knowledge. Specifically addressed is how participants expressed their knowledge and understanding about using OERs to support their students’ online reading comprehension skills (i.e., questioning, locating, evaluating, synthesizing, and communicating), along with recommendations for preparing students to become 21st century literate.
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Marlee Givens, Georgia Institute of Technology, USA
Liz Holdsworth, Georgia Institute of Technology, USA
Ximin Mi, Georgia Institute of Technology, USA
Fred Rascoe, Georgia Institute of Technology, USA
Alison Valk, Georgia Institute of Technology, USA
Karen E. Viars, Georgia Institute of Technology, USA

This chapter addresses technology in education, multimodal texts, and information literacy in a STEM research-focused university setting. Students produce multimodal content in first year composition classes, but composition instructors lack the skills required to teach students multimedia technology. Librarians respond to the needs of the faculty and students they support. Library instruction takes place within the composition class (course-integrated or “one-shot” instruction) or in a multimedia classroom at the library. The librarians bring technical skills as well as a grounding in information literacy, and their instruction increases students’ written, sonic, visual and data literacy. As a result, students become more savvy content consumers as well as creators.

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Colliding Pedagogies: A Call for Diffractive Digital Literacy Teacher Education ..................... 121

Julie Rust, Millsaps College, USA

This chapter uses an equity lens to examine learning in makerspaces with a focus on the role that literacies and technologies play in these spaces. The authors examine ways that makerspaces bridge formal and informal learning and serve as important contexts for community building and mentorship. This piece includes a review of the literature aimed at building a deeper understanding of the principles that underlie literacies practices, collaboration, and learning engagement. Critical perspectives address the need to center equity and inclusion at the core of these learning environments. The authors offer principles and recommendations for designing, organizing, expanding, and sustaining learning-through-making opportunities for all learners.

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Wen Wen, University of Arizona, USA
Jill Castek, University of Arizona, USA

This chapter uses an equity lens to examine learning in makerspaces with a focus on the role that literacies and technologies play in these spaces. The authors examine ways that makerspaces bridge formal and informal learning and serve as important contexts for community building and mentorship. This stance on makerspaces centers equity and inclusion as driving forces that must become central to the design of these innovative learning spaces. The piece includes a review of the literature aimed at building a deeper understanding of the principles that underlie literacy practices, collaboration, and learning engagement. The authors offer principles and recommendations for designing, organizing, expanding, and sustaining learning-through-making opportunities for all learners.
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Steamsational Writing: An Investigation Into Using Robots to Inspire Children’s Narrative Skills.. 175
Marybeth Green, Texas A&M University, Kingsville, USA
C. Lisa McNair, Texas A&M University, Kingsville, USA

Providing young children with rich environments for writing has been a continuing quest for teachers in the early grades. This chapter investigates the use of Bee-bot robots as a means of creating a stimulating environment that engages second graders in the writing process and learning story grammar elements. Researchers met with the students weekly for an hour over six weeks. In the first week, students wrote an initial story and learned the basics of programming a Bee-bot robot. In subsequent weeks, students listened to a story set in the context of the Bee-bot mat, reviewed vocabulary words, planned a path for their robot, wrote a short story, and executed their robot program. There was a significant difference overall between the baseline story and the final story, and between the initial rating of each of the story grammar elements and the final rating of the elements, with the exception of Character.

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Jill Tussey, Buena Vista University, USA
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Brittany Garling, Buena Vista University, USA

Due to instructional limitations embedded within basal reading programs, the use of text sets offers teachers alternative instructional resources. Text sets can be utilized in all subject areas to increase exposure to a variety of digital and print literacy resources. Multimodal literacy as a form of blended learning, incorporates traditional texts with digital opportunities, allowing learners to connect, experience, and understand literacy through a plethora of engaging channels. Digital tools and digital literacy allow students to connect with current information in an engaging manner while increasing literacy skills. The end goal of incorporating digital components into text sets is to meet the academic needs of all students.

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Jessica Lynn Lantz, James Madison University, USA
Joy Myers, James Madison University, USA
Reece Wilson, James Madison University, USA

Using Puentedura’s framework for transformative use of technology for learning, and the guidelines for developmentally appropriate practice, practitioner vignettes, and practical strategies highlight the possibilities for integrating digital storytelling activities in the PK-3 classroom in support of literacy learning. The chapter explores ways in which digital storytelling can be a transformational way for
young children to develop an array of literacy skills. The vignettes share examples of teachers integrating digital storytelling activities in transformative ways to enhance children’s learning. The chapter provides suggestions for lesson ideas and digital tools for engaging young children in a variety of storytelling projects.

Chapter 11

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Laurie A. Friedrich, University of Nebraska, Lincoln, USA
Lauri Nichols, Renton Preparatory Christian School, USA
Guy Trainin, University of Nebraska, Lincoln, USA

Through an exploration of three vignettes, the authors share innovative ways young learners and their teachers are responding to children’s literature using digital tools in the context of new literacies. In the first example, primary grade students use digital tools to gain agency in their literacy practices as part of project-based learning within a STEAM curriculum. In the second, struggling readers in an after-school program integrate traditional and out-of-school literacies to produce authentic literacy products outside the constraints of standards and established curricula. Finally, an example from a teacher education program shows how the next generation of teachers can become leaders in the use of new literacies through their own experiential learning. Despite the differences in context and content of each vignette, all three demonstrate strong use of literacies pedagogy to guide selection of digital tools for the creation and consumption of text.

Chapter 12
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Kristine E. McGee, Frostburg State University, USA
Jodi G. Welsch, Frostburg State University, USA

Becoming an educator today, specifically one who teaches literacy, requires more than a strong understanding of pedagogy and best practices. Today’s educators must be equipped to survive, as well as thrive, in a 21st-century literacy classroom. New programs, websites, apps, etc. are being introduced daily, therefore, our pre-service teachers need support in order to utilize tools effectively. By providing experiences with a variety of tools, novice teachers can employ existing pedagogical frameworks for technology integration with literacy instructional tools. This study identifies how pre-service teachers perceive their skills and pedagogical decision-making for the integration of technology tools within their literacy instruction.

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Damiana Gibbons Pyles, Appalachian State University, USA
Beth Buchholz, Appalachian State University, USA
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Peaches Hash, Appalachian State University, USA

Grounded in digital literacy and literacies research, the authors explore how a kindergarten teacher facilitated digital literacy in a science lesson using YouTube playlists and the YouTube Kids app. By
curating videos and modeling how to “read” the video texts, the teacher prepared her students for their own guided searches using streaming video texts in the YouTube Kids app on iPads. The authors show how teacher curatorship can foster real, authentic learning experiences, even for young children, as a way for students to begin developing the complex new literacy practice(s) of curating videos across in and out of school spaces.

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Ann H. Wallace, James Madison University, USA
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This chapter focuses on three web-based applications and describes how each may be used to promote mathematical literacy in developmentally appropriate ways. The web-based applications described in this chapter are a selection of those provided at no cost by The Math Learning Center. The Number Rack Application is a calculating frame composed of 2 rows of 10 beads each. The rows of movable, colored beads encourage learners to think in groups of fives and tens, helping them to explore and discover a variety of addition and subtraction strategies. The Number Line Application helps students visualize number sequences and illustrate strategies for counting, comparing, adding, subtracting, multiplying, and dividing. The Money Pieces Application helps students visualize and understand money values and relationships. The strategy of Number Talks is used to promote mathematical literacy using these applications. A Number Talk is a short, ongoing daily routine with a focus on mental math strategies that provides students with meaningful practice with computation.

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Richard W. Beach, University of Minnesota, USA
Blaine E. Smith, University of Arizona, USA

Grounded in research-based examples, this chapter provides a resource for students, teachers, and researchers to critically engage with issues of climate change through leveraging the affordances of digital tools. In particular, the authors discuss the affordances and challenges of students using digital tools to address climate change. They also review research in this field, including studies on visualizations, analyzing information, social media, digital videos, digital role-play, video games, and virtual and augmented reality. The chapter describes how digital tools offer meaning-making possibilities for students to propose solutions to climate change through engaging multimodal narratives, as well as share their voices through digital activism. Considering that global climate change is perhaps the most serious problem human beings have ever faced, this chapter offers implications for curriculum and instruction to aid educators
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Fawn Canady, Sonoma State University, USA
Ed Nagelhout, University of Nevada, Las Vegas, USA

This chapter explores pedagogical goals and classroom practices for literacy instruction with/in a digital learning environment that extends beyond the classroom. To do this, the authors developed a process for literate practices illustrated through game design. Game design is one example of a disciplinary activity that masks the complexity of writing yet provides teachers with opportunities to make visible the writing practices and genres inherent in all disciplines. Game developers are writers and game development is a ‘literacy-first’ activity, a process that underscores the complex and considered choices authors or designers make in specific rhetorical contexts. Pedagogical goals and classroom practices at all levels of literacy education must encourage greater collaboration, privilege informal and situated learning, and promote decision-making, student self-monitoring, and lifelong learning. The chapter concludes by describing a project framework that can be adapted at all educational levels using game design as a model.

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Meredith J. C. Swallow, University of Maine, Farmington, USA
Kathryn Will-Dubyak, University of Maine, Farmington, USA

Two professors in a teacher preparation program purposefully examined their courses for ways in which the learning opportunities in each separate course could be connected to facilitate development of preservice teachers’ understandings of purposeful integration of technology within literacy instruction for elementary student learners. Preservice teachers in the courses used their knowledge of children’s literature and best practices to create rich learning opportunities before examining them through the lens of the TPACK framework and SAMR model. This process enhanced and transformed preservice teachers’ instructional decisions to illuminate educational technology as part of literacy instruction.

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Jackie Marshall Arnold, University of Dayton, USA

This chapter examines one way in which students engage in learning literacy content in an online context utilizing cooperative learning pedagogy, a research-based, best-practice approach to learning. The online course was purposefully developed to integrate the elements of cooperative learning: positive interdependence, student interaction, individual accountability, use of interpersonal/ small group skills, and equal opportunity for success, as referenced papers show. Findings indicate that students had positive learning experiences when utilizing cooperative learning pedagogies in an online environment. Three significant themes emerged from the data analysis: students 1) clearly identified the importance of leadership in the course experience; 2) articulated their appreciation of learning from others; and 3) stated they had an enhanced learning experience through the cooperative learning structure. As more
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Chapter 19
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Chelsey M. Bahlmann Bollinger, James Madison University, USA
Sarah M. Lupo, James Madison University, USA
Brian A. Sullivan, James Madison University, USA

Although quizzes and written summaries are more traditional ways to hold students accountable for reading, more than two thirds of college students report not completing assigned readings, references show. In this mixed-methods study, the researchers explored whether various technology strategies motivated undergraduate literacy education students to not only read, but also learn from these assigned texts. Collecting survey data from our literacy preparation courses, the authors examined how the students perceived these strategies.

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Johnny B. Allred, University of Arkansas, USA

Digital tools and practices are becoming more integral to what happens in classrooms at all levels, so it is helpful to examine how teachers and students are utilizing technology during literacy practices. This chapter presents a review of research regarding instructional practices and classroom environments that cultivate purposeful use of technology for literacy development. Specifically, this chapter investigates aspects of online conversations that promote social construction of knowledge, reflective dialogue, and increased reading comprehension; it also provides insights for educators who seek to enhance or transform the structure of their students’ online conversations about assigned readings. This review of research is guided by the following research questions: (a) What are the general affordances of online discussions? (b) What types of comments are students making in such discussions? and (c) What are the observed effects of online discussions on reading comprehension?

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Juan Li, Clemson University, USA

This study overviews contemporary studies on the use of video games for second language acquisition within the past ten years spanning the development of computer-assisted language learning (CALL) and its connections to SLA, definitions of video games, empirical studies on the facilitative roles played by video games for second language (L2) learning and utilizing massively multiplayer online role-playing games (MMORPGs) for language learning. The purpose of this chapter is to help the readers obtain a systematic understanding of the development and application of video games in second language
education. Findings of this study suggests that players are able to acquire L2 knowledge while playing video games. It also suggests that future research should focus more on the actual integration of video games into language instruction.

Chapter 22
Humanizing Online Assessment: Screencasting as a Multimedia Feedback Tool for First Generation College Students

Katie Rybakova, Thomas College, USA

In this chapter, the author will investigate the use of screencasting as a multimedia feedback tool in two classes—a college level introduction to literature class, and a computers across the curriculum class geared towards K-12 preservice teachers. After situating the concepts of modeling and feedback strategies within seminal and contemporary scholarships, the author will provide a practical and anecdotal narrative of the uses of screencasting as an assessment tool within the frame of literacy pedagogies. In identifying the ways in which screencasting (video feedback) can be leveraged to enhance personalized instruction, the author will examine: 1) how technology can be used as a literacy practice; and 2) how a teacher preparation professor can model the practice of technology as a literacy for assessment purposes.

Chapter 23
Designing for Purpose-Driven Technology Use Among Preservice English Teachers

Jennifer M. Higgs, University of California, Davis, USA

This chapter reports on a case study of a 12-week technology course for preservice English language arts teachers in which the teacher educator attempted to shift away from tool-centric approaches by foregrounding purpose-driven tool use and project-based learning experiences. Findings from analyses of classroom, interview, and survey data suggested that specific design choices helped to promote purpose-driven technology use for literacy learning. These included the instructor’s articulation and modeling of a “pedagogy first” stance that centered pedagogical reasons for digital tool use and affordances of digital tools, and the organization of a project-based learning environment that engaged preservice teachers in hands-on exploration of digitally mediated ELA learning through continual cycles of making, sharing, and reflecting on digital artifacts.

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About the Contributors

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