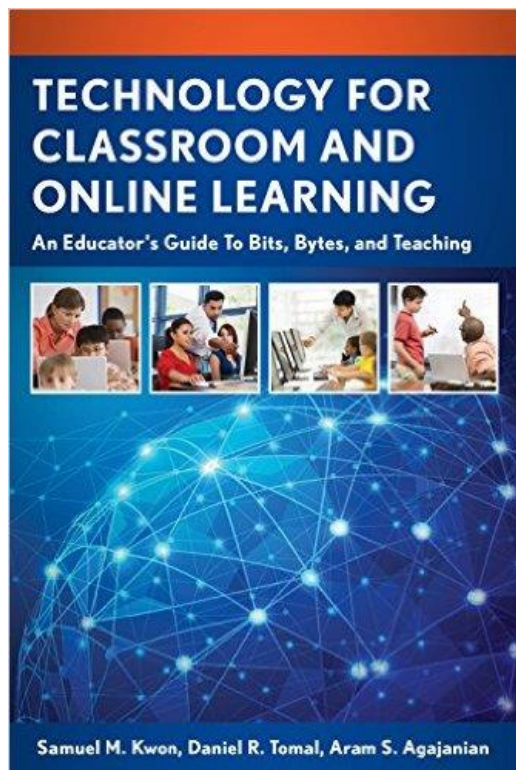# Book Review

An Educator's Guide to Bits, Bytes, and Teaching

"Technology for Classroom and Online Learning" by Samuel M. Kwon, Daniel R. Tomal, and Aram S. Agajanian

By Amitabh Vikram Dwivedi

Technology for Classroom and Online Learning provides a comprehensive overview of technology integration in the classroom. Three authors—Samuel M. Kwon, Daniel R. Tomal, and Aram S. Agajanian—collaborated on and designed this book for students, educators, technology coaches, and school administrators working in K-12 and higher educational settings. The authors claim that this book will assist teachers and students improve their "understandings of core technology concepts" and enable them to "use and troubleshoot

hardware, software and computer networks" (p. xv). To accomplish this, the authors employ a focused approach by addressing specific questions educators may have. Some examples are: What are the key security issues for computer at K-12 level? What are the best approaches for teaching and learning? How do computers and networks work?

Eight chapters, excluding the introduction, are supported with figures, tables, bullet points, and diagrams. Each chapter begins with well-defined objectives and concludes with a summary and case study, appended with exercises, discussion questions, and important references. The text also provides four appendices along with a useful index. The table of contents, however, does not explicitly identify which author(s) are responsible for each chapter; one is therefore left to assume that each chapter was written by all three authors.

Chapter one provides a diachronic account of electricity, computer technology, and electric devices. Basic information about software and hardware is given in the later part of this chapter, providing encyclopedia-like details about casing, central processing units, cooling devices, disks, RAM, device driver software, firmware, server software, etc.

Chapter two, "Electronics and Technology," provides answers to questions such as: How do computer monitors work? Why is a power strip necessary? What happens when you apply power to a Smart Board? (p. 17). This

chapter essentially seeks to provide clear instructions for new technology users and highlights the fundamental, theoretical knowledge about electronics and technology, while suggesting safety considerations.

In the following chapter, the authors deal with computer peripherals, providing an overview of software drivers, interface technologies, and "the basic troubleshooting of peripheral devices" (p. 38). A step-by-step guide to learning about computer peripherals is supported with many illustrations, figures, and diagrams. For a computer and lab teacher, the information covered in this chapter will be particularly useful.

Chapter four, "Computer Networking," explains how to implement wired and Wi-Fi networks at schools, provides an understanding of network devices and their associated software, and describes different types of network topologies. Under network typologies, the authors skillfully explain bus network topology, mesh network topology, ring network topology, star network topology, tree network topology, and hybrid network topology. The simple language the authors use help make this technical knowledge lucid.

Chapter five, "Computing Platforms for Schools," covers the topic of computing platforms, explaining them and describing how to identify them. This chapter provides answers to many practical issues, such as if a long service is desired from a computing platform in a stationary computer lab area, which platform would be most suitable, and what are the main "strengths and weaknesses of laptop computers" (p. 84).

The subsequent chapter deals with security and maintenance issues. Quite significantly, the concepts of risk assessments, assets, threats, vulnerabilities, and annual loss expectancy are discussed at length. The authors also provide useful suggestions and

recommendations for maintaining computer hardware and software.

Chapter seven focuses on the use of technology in teaching and learning activities. The authors provide the main philosophical perspectives on the use of technology for teaching and learning. They highlight the specific categories of computer technologies, such as analysis, visualization, communication, and collaboration. The case study at the end of this chapter assists readers so that they may apply their "understanding of educational technology to a case situation" (p. 144).

The last chapter addresses online and blended learning. It describes the strengths and weaknesses of the online learning environment, types of learning activities, technology tools required for online courses, and various approaches that can be used to promote productive peer interactions in an online setting. However, the authors believe that "online learning is still in its early stages of development" (p. 162).

Overall, this book is useful for all educators and students who use computers and related technology. The technical information, supported with clear explanations and descriptions, makes this text easy to understand. It is a must read for lab teachers, computer coaches, and K-12 computer learners. Further, any novice in computers can read it and enhance his/her understanding of computer technology.

"Technology for Classroom and Online Learning: An Educator's Guide to Bits, Bytes, and Teaching." By Samuel M. Kwon, Daniel R. Tomal, and Aram S. Agajanian. Lanham, MD: Rowman and Littlefield, 2016. ISBN 978-1-4758-1544-3

About the Authors
Samuel M. Kwon, Ph.D., is a Concordia University, Chicago faculty member and teaches courses in the Educational Technology program. His primary areas of

research include technology-supported teaching and learning, online learning, and the design of learning environments. He has published many articles on teaching, learning, and the use of technology.

Daniel R. Tomal, Ph.D., is a Distinguished Professor of Leadership at Concordia University, Chicago. He is a consultant and an author of eighteen books and has made guest appearance on many national radio and television shows.

Aram S. Agajanian, Ph.D., is a professor and has served as a chair of electronics and computer engineering technology programs in several institutions. His expertise is in the fields of electrical, computer, biomedical engineering technology, and network communications. He has published numerous articles on educational leadership.

About the Reviewer
Amitabh Vikram Dwivedi is an assistant professor in the department of languages and literature at Shri Mata Vaishno Devi University in India.