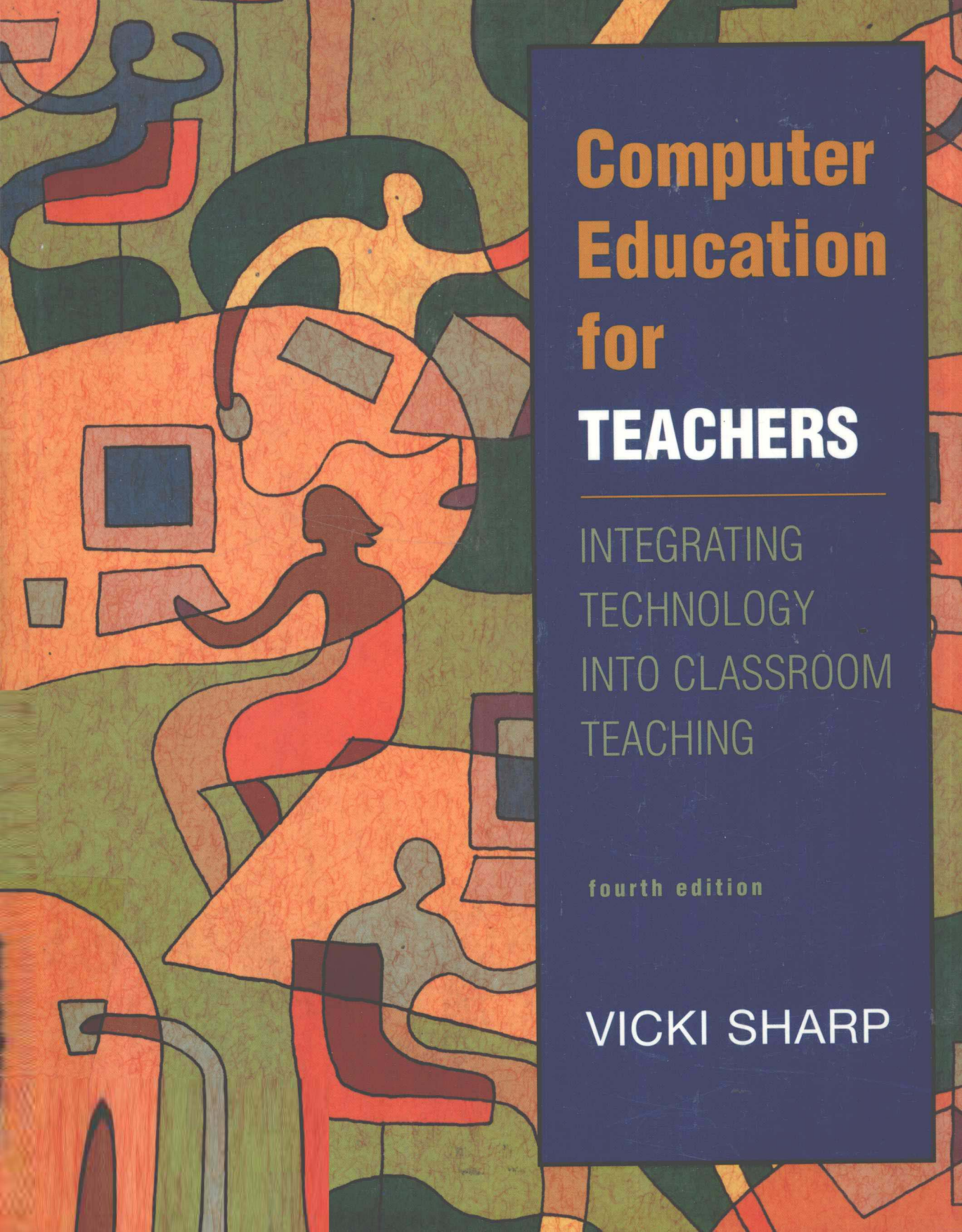

Computer Education for TEACHERS

INTEGRATING TECHNOLOGY INTO CLASSROOM TEACHING

fourth edition

VICKI SHARP

Computer Education for Teachers

Integrating Technology into Classroom Teaching

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Preface

We have come a long way from the 1940s and 1950s when computers consisted of vacuum tubes, data were recorded on magnetic tapes and magnetic drums, and the machines were used primarily by scientists and engineers. In 1969, when I was working on my Ph.D., I typed cards on a keypunch machine, and the cards were then read by a computer that filled a large room. Then, in 1977, Steve Jobs and Steve Wozniak introduced a fully assembled version of their Apple computer, called the Apple II. I thought this compact desktop computer with its 4K of memory, priced at $1,298, was a marvel. In the early 1980s I wanted to bring computers to teachers, so I bought pocket computers and taught programming off campus. Using the Apple IIe as a demonstration machine, I showed software like *Lemonade Stand* and used a word processor program called *Bank Street Writer.* At that time, educational software was limited and inadequate, and the focus was teaching the programming language BASIC, followed shortly thereafter by Logo.

Since the mid-1990s, there have been many technological changes, and the computer has emerged as an important tool in society and in education in particular. With the production of quality software, the computer's role has changed from a device used for computer programming to an instrument that can be efficiently integrated into the curriculum. Teachers utilize computers for word processing, database management, graphics generation, desktop publishing, Internet access, and multimedia. Our machines are now smaller, contain gigabyte hard drives, and have gigabyte processing speeds. We use the Internet as a huge library resource, and electronic mail has proliferated. (In fact, we communicate by e-mail to such an extent that I am relieved when our server breaks down.) Today, computers are being used to help students with special needs realize their potential. In the next 10 years, the computer and the Internet will become an even more pervasive influences on how we teach and what happens in the classroom. It will be an exciting time for teachers and students, and who knows what the future will bring.

Book Audience

Computer Education for Teachers: Integrating Technology into Classroom Teaching, fourth edition, assumes no prior experience with computers and is designed to meet the needs of the computer novice. It is written for undergraduate and graduate students who want an up-to-date, readable, practical, concise

introduction to computers. Covering a large range of topics, this book should help students acquire the knowledge and skills necessary to effectively integrate computers into the classroom.

Contents of the Text

The content of the text is arranged in a logical teaching order. However, the chapters are not dependent on each other and can be taught in the order the instructor requires.

This edition offers the following salient features:

- **Internet chapters.** In this edition, I have devoted two chapters to the Internet, covering topics such as search engines, integrating the Internet into the classroom, and website evaluation. Each chapter presents a multitude of websites with varying curriculum, classroom activities, and projects.
- **A new chapter on special education.** Chapter 12 covers hardware, software, laws, lesson plans, issues, and ways to integrate the computer into the classroom to teach students with special needs using the latest technology.
- **A chapter on desktop publishing.** Desktop publishing is one of the primary applications for the computer. Chapter 5 teaches the student to create such products as newspapers, bulletins, and signs that can enrich the curriculum and enhance the classroom atmosphere.
- **A chapter on multimedia.** This chapter introduces the student to ways of using the computer to combine text, graphics, and sound into effective multimedia presentations.
- **Brand-new OLC.** The brand-new Online Learning Center for *Computer Education for Teachers* contains resources for professors and students including self-quizzes, links and lesson plans, study tools, Internet exercises, an online instructor's manual with *PowerPoint* slides, and much more.
- **New student CD-ROM.** The *Computer Education for Teachers Student CD-ROM* includes quizzes and Internet links, covers the evaluation of Web resources, offers ideas for integrating technology into the classroom with links to lesson plans, and more!
- **Lots of clear illustrations.** This edition features more than 300 illustrations to highlight pertinent points, facilitate understanding, and explain software.
- **Chapter objectives.** The objectives at the beginning of each chapter serve as a map of the chapter's contents, thus guiding the reader through the book.
- **Evaluation instruments.** Numerous evaluation instruments appear throughout chapters.
- **Internet sites.** At the end of each chapter, I have included a list of Internet sites that offer additional lesson plans, resources, tutorials, historical information, and utilities to use in the classroom.

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- **Chapter mastery tests.** Questions selected according to sound learning principles appear at the end of each chapter to help readers ascertain how well they understand the material.
- **Recommended annotated software listing.** A complete, up-to-date annotated listing of software helps the reader make more informed purchasing decisions. This can be found in Appendix A.
- **A discussion of standards.** The book addresses the technology standards that are expected for K–12 students, preservice teachers, and education professionals.
- **Summaries of current computer research.** These summaries provide readers with an understanding of past and current research, effective and ineffective uses of the computer, and promising new directions for further research.
- **Exposure to state-of-the-art technology developments.** Explorations of advances in computer technology keep the student on the cutting edge of computer knowledge.
- **Extensive bibliographies.** The reader can use the selected bibliographies at the end of each chapter to investigate a wide spectrum of topics related to educational technology.
- **A revised teacher's manual.** This manual supplies the teacher with chapter summaries, lecture outlines, answers to mastery test questions, suggested activities and projects, transparency masters, additional test items, and sample software evaluations.

New to the Fourth Edition

Computer Education for Teachers has been updated in a wide variety of ways to reflect the changes that are occurring in educational technology. Chapters have been reorganized, combined, and revised and new chapters have been written. The new edition offers the following features:

- Brand new Chapter 12, "Computers in Special Education."
- More than 150 new illustrations.
- Hundreds of tips for integrating the computer into the classroom.
- Brand-new student CD-ROM.
- Brand-new OLC.
- Basic terms defined.
- New annotated list of software (Appendix A), updated directory of software publishers and mail-order and online software sources (Appendixes B and C).
- Expanded and updated Internet chapters with lesson plans and other curriculum resources, including WebQuests.
- An expanded and updated multimedia chapter.
- Additional chapter questions and projects.
- Updated bibliographies and glossary.
- New instructor's manual.

A Message to Readers

If you would like to see some topic in a future edition or have any comments or questions, please send your thoughts to me at one of the following addresses:

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