Foreword

Ancient Practices Reborn in Digital Multimedia

Ignore all the current hype about multimedia, and the possibilities for its contributions to education remain.

The *Merriam-Webster Dictionary* defines multimedia as “using, involving, or encompassing several media *<a multimedia approach to learning>*,” with the first known use of the term in 1962. In 1994, the IEEE Computer Society launched a bimonthly, peer-reviewed magazine on multimedia with Dr. William Grosky as editor in chief and me as the magazine’s IEEE staff editor. At the time—just 20 years ago—everything about multimedia seemed new. Today, “IEEE *MultiMedia* is a quarterly peer-reviewed scientific journal published by the IEEE Computer Society and covering multimedia technologies. Topics of interest include image processing, video processing, audio analysis, text retrieval and understanding, data mining and analysis, and data fusion.” These research-advancing topics represent quite a difference from the earliest implementations of multimedia covered by the first issues of the publication—methods and approaches also used by our recent and earliest ancestors.

We don’t know when language arose, although some scientists theorize it might have evolved with tool use. Teaching others how to do something is faster and easier when the instructor can tell as well as show students what to do and in what order. We do know that early peoples used plant and mineral dyes and stone tools to create images on cave walls and elsewhere to save their knowledge for their own future use as well as that of their descendants. Centuries later, Homer and other bards used lyres to create a musical framework for sung stories, helping themselves, apprentice bards, and listeners memorize the lengthy tales of their people’s history or mythology. This method continued through history, and we still use it today in teaching even our youngest children: think of the ABC or alphabet song.

With organized record keeping and “formal” education came the use of surfaces crafted specifically for text (letters and numbers), including clay, vellum, papyrus, knotted cords, sheets of slate, and paper. These materials were so precious in earlier times that they were frequently reused and sometimes kept in special collections. The first uses involved finance, from individual contracts to tallies of goods and government tax receipts. Later, a few rare libraries collected texts, from histories to myth, with the risk of destruction always present, whether by invaders, weather or geological disasters, or accidental fires. Only the most dedicated scholars could access these records, and then only if they had the time and money to travel to them. The wealthy, including church and government officials, collected their own libraries in a somewhat haphazard fashion, using the professional scribes available to them to make copies or even originals of oral traditions (as happened with Homer’s work and the early Danish/English saga of Beowulf).
“Modern” mass education with teachers and classrooms is fairly recent, largely but not entirely supplanting the types of church or tutorial education reserved for the elites and apprenticeship learning for those who became craftsmen. Mechanization disrupted that model, but most people still did not receive any kind of formal education until their governments decided it was valuable for their economies. And the right thing to do for individual human development, of course. The advent of computers and their rapidly growing importance in all facets of our lives, including education of even the youngest students with toy-like electronic devices, arises from an existing tradition of using multiple types of media to pass knowledge to the next generation, something we tend to forget in embracing “new” methods of teaching and learning.

Our effectiveness in using multimedia to support (not supplant) verbal and textual methods remains an open question. Some research shows improved engagement of students when multimedia enlivens the instruction, but not always improved retention. Students who enjoy the class but don’t learn the material not only fail to achieve the curricular goals but also fail to advance in their studies. Like any other instructional tools, multimedia tools require thoughtful application to achieve the desired results. Allowing students to use different media to learn in the ways that serve them best works only when they have committed to that learning, the tools are appropriate for the purpose, and the instructors and students have the support they need to use, modify, and create media. That includes demonstrating not just subject knowledge but also multimedia literacy, which might take the form of projects that can develop into an electronic portfolio for lifelong use.

This book, Design Strategies and Innovations in Multimedia Presentations, continues research into the effective use of multimedia. The authors share their experience, examples, and advice about pedagogy, methods, and tools to weave multimedia into instruction without losing sight of the ultimate goal: student learning. People have used different media from the earliest stages of human development to teach their children and others, and finding ways to apply various types of media in our increasingly digital world builds on an ancient pattern that has served humanity well.

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