

CITEd is pleased to announce a new set of Research in Brief articles on the use of multimedia materials for instruction, particularly for students with special needs. Please visit www.cited.org to read the full articles.

Multimedia Materials: Their Instructional Potential for Students with Special Needs (http://www.cited.org/index.aspx?page_id=141)

This suite of *Research in Brief* articles takes a look at the research on multimedia materials and offers practical lessons along with guidance on choosing and implementing the materials in classroom instruction. Each article also includes an extensive list of linked resources.

Universal Design for Learning in a Digital Multimedia Environment (http://www.cited.org/index.aspx?page_id=147)

This overview article posits that Universal Design for Learning (UDL) can provide a helpful framework for summarizing the research on the use of multimedia materials and demonstrating how a digital multimedia environment can increase the accessibility of materials, scaffold students' exploration of content, and facilitate their engagement.

Learning with Agents (http://www.cited.org/index.aspx?page_id=142)

Agents are the lifelike characters in multimedia software and online applications that pop up on the screen to explain rules, provide hints, or prompt the user to use the program's features. They can be human or nonhuman, animated or static. What is their role in learning? This article presents the research behind the use of pedagogical agents and strategies to make the most of their learning potential.

Learning History with Multimedia Materials

(http://www.cited.org/index.aspx?page_id=145)

Inquiry-based instruction emphasizes learning how to be a historian, learning to evaluate, corroborate, and synthesize multiple conflicting sources. Digital multimedia materials make the exploration of multiple sources more accessible to students with special needs. In this article, find practical resources and strategies for incorporating digital materials into inquiry-based history instruction.

Learning Mathematics with Virtual Manipulatives

(http://www.cited.org/index.aspx?page_id=151)

Abstract concepts are essential to understanding and performing mathematics. Manipulatives represent concretely the abstract concepts and link these concepts to prior knowledge. Virtual manipulatives are basically digital "objects" that can be manipulated, usually with a computer mouse, much like the more familiar physical manipulatives. In this article, discover the research support and practical suggestions for incorporating these powerful learning tools into mathematics instruction and find an extensive list of resources.

Learning with Computer Games and Simulations

(http://www.cited.org/index.aspx?page_id=143)

Games and simulations are highly interactive and engaging, with many user-controlled features. But how do educators harness their power to support learning? This article presents an overview of the research as well as guidance on choosing an educational game and helpful resources.

Learning to Read with Multimedia Materials

[\(http://www.cited.org/index.aspx?page_id=144\)](http://www.cited.org/index.aspx?page_id=144)

There is a steadily growing body of research showing that digital text and multimedia environments can play a significant supporting role in reading instruction. This article explores the literature base and cutting-edge innovations while identifying implementation strategies, guidance on choosing programs, and resources to power up reading instruction.

Learning a Second Language with Multimedia Materials

[\(http://www.cited.org/index.aspx?page_id=146\)](http://www.cited.org/index.aspx?page_id=146)

Multimedia materials and experiences can boost students' language learning, whether it is English or a foreign language. Consider how multimedia can support students' access to comprehensible input, output and interaction. This article presents resources and guidance on choosing an appropriate program or experience.

Using Multimedia Tools to Help Students Learn Science

[\(http://www.cited.org/index.aspx?page_id=148\)](http://www.cited.org/index.aspx?page_id=148)

Scientists routinely use a number of technology tools in their daily practice. Students can use similar technologies and multimedia tools to work like scientists and build their reasoning and scientific inquiry skills. This article provides an overview of the research on and strategies to implement these powerful technology tools in the science classroom as well as an extensive list of resources.

Modeling Tools and Multiple Representations

[\(http://www.cited.org/index.aspx?page_id=148#model\)](http://www.cited.org/index.aspx?page_id=148#model)

Tools that Facilitate Collaboration and Discourse

[\(http://www.cited.org/index.aspx?page_id=148#tools\)](http://www.cited.org/index.aspx?page_id=148#tools)

Simulations and Virtual Labs

[\(http://www.cited.org/index.aspx?page_id=148#sim\)](http://www.cited.org/index.aspx?page_id=148#sim)

Supporting Deaf Students with Multimedia Materials

[\(http://www.cited.org/index.aspx?page_id=153\)](http://www.cited.org/index.aspx?page_id=153)

A wide range of emerging multimedia materials and tools can support the learning and communication needs of students who are deaf or hard of hearing. This article includes implementation strategies and resources that support deaf students and their teachers in regular classrooms.

Learning Geography with Multimedia Materials

[\(http://www.cited.org/index.aspx?page_id=158\)](http://www.cited.org/index.aspx?page_id=158)

This article covers the many uses of multimedia materials to address the five themes of geography learning as endorsed by the National Geographic Society: location, place, human-environment interactions, movement, and regions. This article includes implementation strategies and resources to make learning geography more accessible to all students.

Supporting Social Skills for Students with Special Needs through

Multimedia Experiences [\(http://www.cited.org/index.aspx?page_id=154\)](http://www.cited.org/index.aspx?page_id=154)

Many students with disabilities struggle with interpersonal and functional social skills. Multimedia environments offer students and their teachers an opportunity to practice new behaviors and reflect on interactions. This article includes implementation strategies and resources.

Role Playing and Identity Games – What are Students Learning?

http://www.cited.org/index.aspx?page_id=159

Researchers and developers are bringing cognitive science to bear on developing online multi-user virtual environments and computer software games for educational purposes. This article includes research directions, implementation strategies, and resources to inform teachers and caregivers about the new generation of educational games.