

Handbook of Research on Maximizing Cognitive Learning through Knowledge Visualization

Part of the Advances in Knowledge Acquisition, Transfer, and Management (AKATM) Book Series

Anna Ursyn (University of Northern Colorado, USA)

Description:

The representation of abstract data and ideas can be a difficult and tedious task to handle when learning new concepts; however, the advances of emerging technology have allowed for new methods of representing such conceptual data.

The **Handbook of Research on Maximizing Cognitive Learning through Knowledge Visualization** focuses on the use of visualization technologies to assist in the process of better comprehending scientific concepts, data, and applications. This book highlights the utilization of visual power and the roles of sensory perceptions, computer graphics, animation, and digital storytelling.

Readers:

This book is an essential reference source for instructors, engineers, programmers, and software developers interested in the exchange of information through the visual depiction of data.

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Topics Covered:

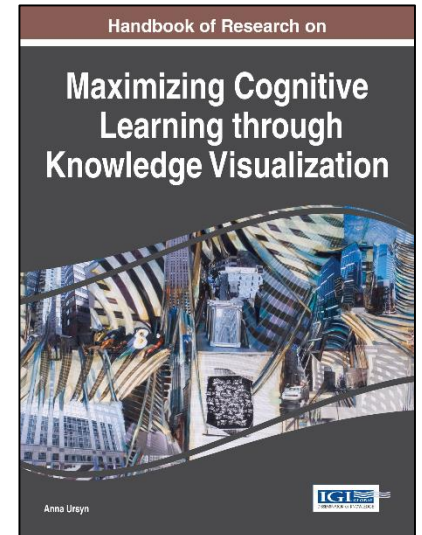
- Electronic Media
- Mathematical Thinking
- Multisensory Applications
- Sensory Extension
- Social Networking
- Stochastic Art
- Visual Plan Construct Language

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Part I. Perception and Cognition

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Cognitive Learning with Electronic Media and Social Networking
Anna Ursyn (University of Northern Colorado, USA)

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Sensory Extension as a Tool for Cognitive Learning
Michael Eisenberg (University of Colorado at Boulder, USA)
Ann Eisenberg (University of Colorado at Boulder, USA)

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Simultaneous Perception of Parallel Streams of Visual Data
Marcin Brzezicki (Wroclaw University of Technology, Poland)

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Visualisation and Mathematical Thinking
Hervé Lehning (AC-HL, France)

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Jean Constant (Hermay.org, USA)

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Science of the Archives: Visual Learning about Plants
Maura Flannery (St. John's University, USA)

Part III. Cognitive Computing and Programming

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Anna Ursyn (University of Northern Colorado, USA)
Mehrgan Mostowfi (University of Northern Colorado, USA)

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Building a Computer
Andrew Liccardo (University of Northern Colorado, USA)
Cameron Grimes (University of Northern Colorado, USA, student)

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Visual Plan Construct Language (VPCL): Visual System and Method for Teaching and Learning Programming and Problem Solving
Alireza Ebrahimi (State University of New York, USA)

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Anna Beata Kwiatkowska (Inst. of Mathematics and Computer Science, Nicolaus Copernicus University, Poland)

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Michelle Jones-Lillie (Lillie Pad Studios, LLC, USA)

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Pamela G. Taylor (Virginia Commonwealth University, USA)

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Lihua Xu (University of Central Florida, USA)
Read Diket (William Carey University, USA)
Thomas Brewer (University of Central Florida, USA)

Anna Ursyn, PhD, is a Professor and Computer Graphics Area Head at the School of Art and Design, University of Northern Colorado. She combines programming with software and printmaking media, to unify computer generated and painted images, and mixed-media sculptures. Ursyn had over 30 single juried and invitational art shows, participated in over 100 fine art exhibitions, and published articles and artwork in books and journals. Research and pedagogy interests include integrated instruction in art, science, and computer art graphics. Since 1987 she serves as a Liaison, Organizing and Program Committee member of International IEEE Conferences on Information Visualization (iV) London, UK, and Computer Graphics, Imaging and Visualization Conferences (CGIV). She serves as Chair of the Symposium and Digital Art Gallery D-ART iV, 1997-2011.