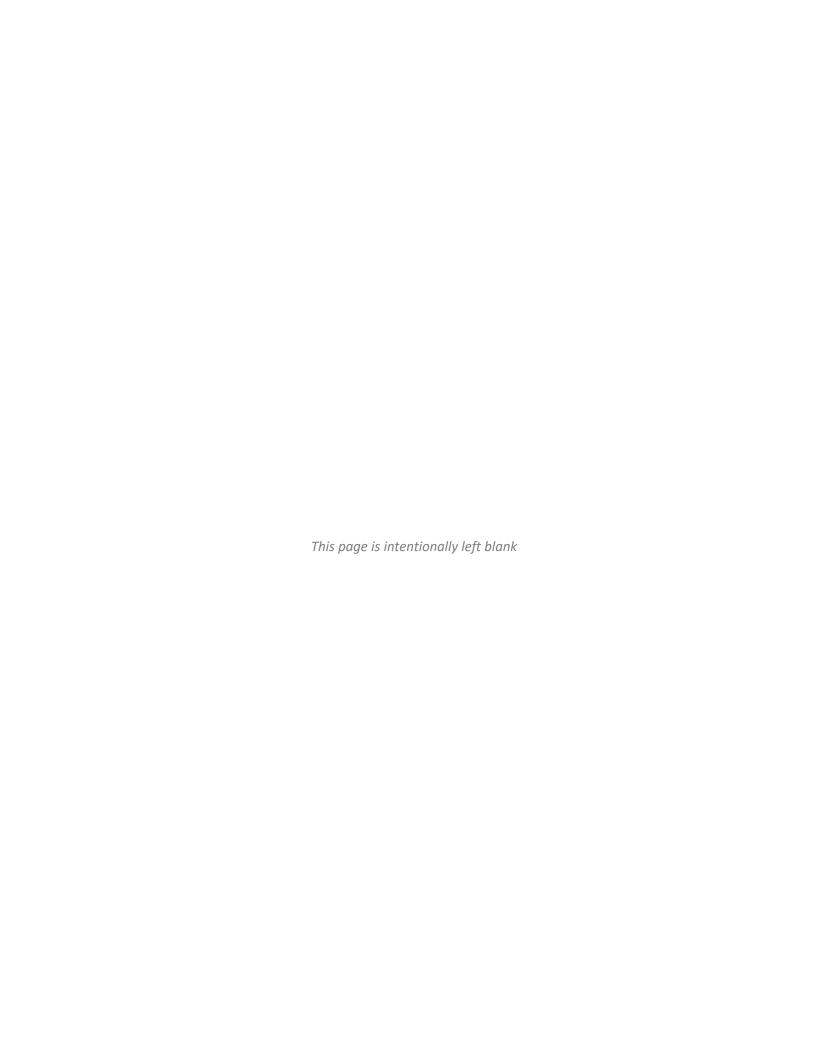
CONTEMPORARY EDUCATIONAL TECHNOLOGY

A Quarterly International Journal





CONTEMPORARY EDUCATIONAL TECHNOLOGY

Contemporary Educational Technology is a scholarly international journal focusing on theory, research, and development in the field of educational technology.

The journal assigns highest priority to rigorous studies of quantitative, qualitative, and mixed paradigms on topics related to theories and applications of educational technology as well as instructional design in various educational settings including both formal and non-formal contexts.

The journal also publishes articles on empirically-based evaluation studies and theoretically-based development papers. When appropriate and possible, development papers should highlight links between theory and practice of educational technology.

Moreover, each issue of the journal publishes comprehensive book reviews, interviews, comments, and research abstracts on current issues in the field of educational technology and instructional design.

Editorial Contact

editor@cedtech.net

ABSTRACTING / INDEXING

Contemporary Educational Technology is listed by the following indexes:
Cabell's Directory
<u>Crossref</u>
Current Index to Journals in Education (CIJE)
Education Research Complete (EBSCO)
<u>ERIC</u>
Google Scholar
<u>OpenAIRE</u>
<u>Scilit</u>
<u>SCOPUS</u>
Ulrich's Periodicals Directory

EDITORIAL BOARD

Editor-in-Chief

Ali Simsek, Anadolu University, Turkey

Associate Editor

Fahme Dabaj, Eastern Mediterranean University, North Cyprus

Editorial Team

Yavuz Akbulut, Anadolu University, Turkey

Abdulrahman Al Lily, King Faisal University, Saudi Arabia

Arif Altun, Hacettepe University, Turkey

Hanafi Atan, University of Sains Malaysia, Malaysia

Tony Bates, Tony Bates Associates Ltd, Canada

Barbara A. Bichelmeyer, Indiana University, USA

Hasan Caliskan, Anadolu University, Turkey

Brian Garner, Deakin University, Australia

Dursun Gokdag, Anadolu University, Turkey

Roger Hartley, University of Leeds, United Kingdom

Gregory A. Kearsley, Independent Consultant, USA

John M. Keller, Florida State University, USA

Stephen Kerr, University of Washington, USA

Paul A. Kirschner, Open University of the Netherlands, The Netherlands

Siu Cheung Kong, The Hong Kong Institute of Education, Hong Kong

Rob Koper, Open University of the Netherlands, The Netherlands

Ulku Koymen, Lefke European University, North Cyprus

Gulsun Kurubacak, Anadolu University, Turkey

EDITORIAL BOARD

M. David Merrill, Brigham Young University at Hawaii, USA

Marcelo Milrad, Linnaeus University, Sweden

Gary R. Morrison, Old Dominion University, USA

Balakrishnan Muniandy, Universiti Sains Malaysia, Malaysia

Kiyoshi Nakabayashi, Chiba Institute of Technology, Japan

Charles M. Reigeluth, Indiana University, USA

Steven M. Ross, Johns Hopkins University, USA

Alison Rossett, San Diego State University, USA

Gregory C. Sales, University of Minnesota, Twin Cities, USA

Gilly Salmon, University of Leicester, United Kingdom

Demetrios G. Sampson, University of Piraeus, Greece

Keith Sawyer, Washington University, USA

Richard A. Schwier, University of Saskatchewan, Canada

Norbert M. Seel, University of Freiburg, Germany

David W. Shaffer, University of Wisconsin, USA

George Siemens, Athabasca University, Canada

Michael Simonson, Nova Southeastern University, USA

J. Michael Spector, University of North Texas, USA

Robert D. Tennyson, University of Minnesota, USA

Timothy Teo, University of Macau, China

Chin-Chung Tsai, National Taiwan University of Science and Technology, Taiwan

David Wiley, Brigham Young University, USA

Brent G. Wilson, University of Colorado at Denver, USA

Su Luan Wong, University Putra Malaysia, Malaysia

Rauf Yildiz, Canakkale Onsekiz Mart University, Turkey

CONTENTS

Volume 10 – Issue 2 – April 2019 A Comparative Study on Social Media Addiction of High School and University Students 106-119 Ali Simsek, Kemal Elciyar, Taner Kizilhan The Role of Serious Games, Gamification and Industry 4.0 Tools in the Education 4.0 120-136 **Paradigm** Fernando Almeida, Jorge Simoes Pre-service Information Technology Teachers' Self-Efficacy, Self-Esteem and Attitudes 137-155 towards Teaching: A Four-Year Longitudinal Study Ozcan Ozgur Dursun Exploring the Loneliness and Internet Addiction Level of College Students Based on 156-172 **Demographic Variables** Osman Erol, Nese Sevim Cirak Computational Thinking, Programming Self-Efficacy, Problem Solving and Experiences 173-197 in the Programming Process Conducted with Robotic Activities Hatice Yildiz Durak, Fatma Gizem Karaoglan Yilmaz, Ramazan Yilmaz Effects of Augmented Reality in Teaching Old Turkish Language Mementoes on Student 198-213 **Achievement and Motivation** Nurullah Sahin, Mehmet Fatih Ozcan