

CONTENTS

Editorial

PARENTS' VIEWS ON THE USE OF AI-BASED CHATBOTS SUCH AS CHATGPT IN HIGH SCHOOL (STEM) EDUCATION

Markus Sebastian Feser 4

Articles

LIVE-STREAMING PERFORMANCE IN INQUIRY-BASED SCIENCE LEARNING WITH ACTION: TEACHERS' PERSPECTIVES

Jon-Chao Hong, Huei-Ying Ho, Ming-Chou Liu, Kai-Hsin Tai 9

EFFECTS OF DIGITAL GAME-BASED LEARNING IN STEM EDUCATION ON STUDENTS' MOTIVATION: A SYSTEMATIC LITERATURE REVIEW

Jelena Ilić, Mirjana Ivanović, Aleksandra Klačnja-Miličević 20

A META-ANALYTIC EXAMINATION OF THE EFFECT OF INDIVIDUAL AND SCHOOL-AVERAGE ACHIEVEMENT ON STUDENTS' SELF-CONCEPT IN SCIENCE

Nurcan Kahraman 37

DIFFERENCES IN THE WISHES OF STUDENTS, TEACHERS, AND PARENTS ON INTEGRATION OF SMARTPHONES AND TABLETS IN BIOLOGY LESSONS

Vida Lang, Andrej Šorgo 45

DEVELOPING A KNOWLEDGE MAP FOR THE EARLY CHILDHOOD STEAM EDUCATION: A VISUAL ANALYSIS USING CITESPACE AND HISTCITE

Yumeng Li, Corrienna Abdul Talib 56

KNOWLEDGE AND ATTITUDES TOWARD BIOTECHNOLOGY IN STEM EDUCATION AS AN INDICATOR OF SCIENTIFIC LITERACY

Ruo-Yang Li, Yu-Yang Ma 76

THE IMPACT OF THE OK4R MOBILE PLATFORM ON VOCATIONAL STUDENTS' IMPROVEMENT OF SCIENCE READING COMPREHENSION AND LOGICAL THINKING

Pao-Yin Lin, Pei-yu Chen, Yuan-Chen Liu, Hsiao-Ching Yang 90

THE EFFECTS OF STUDENTS' STANDPOINTS IN ARGUMENTATION REGARDING SOCIO-SCIENTIFIC ISSUES

Yu-Ren Lin, Tzu-Ting Wei 104

STUDENTS' REFLECTIONS ON THEIR SCIENTIST- OR ENGINEER-LIKE PRACTICES IN STEM PROJECT-BASED LEARNING

Tian Luo, Jiayue Zhao, Winnie Wing Mui So, Wencong Zhan 119

ENVIRONMENTAL ISSUES ON TIKTOK: TOPICS AND CLAIMS OF MISLEADING INFORMATION

Brenda Braga Pereira, Sangwoo Ha 131

THE FEASIBILITY AND EFFECTIVENESS OF LIFE SCIENCE IN STEM PRACTICAL LEARNING ENVIRONMENT

King-Dow Su 151

STUDENTS' CONCEPTUAL STRUCTURES REGARDING REDOX REACTION: COMBINING MULTIDIMENSIONAL SCALING AND HIERARCHICAL CLUSTER ANALYSIS APPROACHES

Wenxiu Tang, Yangyi Qian, Hong Wang, Jinju Wen, Jiayi Huang, Xintong Zhu, Yangqian Wang 164

Information

INFORMATION FOR CONTRIBUTORS 175