TABLE OF CONTENTS

INTRODUCTION 11

CHAPTER I.
E-learning & Artificial Intelligence

Kornel Chromiński, Małgorzata Przybyła-Kasperek,
Eugenia Smyrnova-Trybulska, Ainur Bazarbayeva, & Nataliia Morze
COMPARATIVE INTERNATIONAL RESEARCH IN AREA OF EDUCATIONAL PLATFORM AND MOOCs IN OPINION OF IT STUDENTS USING DATA MINING ANALYSING 15

Jan Skalka, Martin Drlik, & Peter Kuna
EXPLORING VIRTUAL REALITY: A THEORETICAL REVIEW OF EDUCATIONAL GOALS, LEARNING DESIGN, AND EVALUATION 31

Todorka Glushkova & Anna Malinova
ADVANTAGES, PROBLEMS AND CHALLENGES IN THE APPLICATION OF AI TECHNOLOGIES IN SCHOOL EDUCATION 45

Isabel Alvarez & Nino Silva
AI IN HIGHER EDUCATION: UTOPIA OR REALITY! 57

Milena Janakova & Petr Suchanek
AI INFLUENCING E-LEARNING TO OPTIMIZE SKILLS FOR BUSINESS PROCESSES 69

Tetiana A. Vakaliuk, Dmytro S. Antoniuk, Oksana A. Chernysh,
Vlada V. Lukashevych, Anastasiia B. Cheverda, & Valerii V. Kontsedailo
EXPERIENCE OF INVOLVING FUTURE IT PROFESSIONALS IN THE DEVELOPMENT OF LEARNING TOOLS AS AN ELEMENT OF DIGITAL TRANSFORMATION OF EDUCATION 79

Liubov Lokhvytska, Nataliia Martovytska, & Anna Tkachenko
STUDENTS' SCIENTIFIC WORK IN CONDITIONS OF E-LEARNING: REFLECTION OF UNIVERSITY STUDENTS . 93

Tetiana Symonenko, Svitlana Skvortsova, Kira Hnezdilova, & Tetiana Britskan
DIGITAL TOOLS OF BUSINESS COMMUNICATION IN EDUCATIONAL ORGANIZATIONS OF EUROPE 107

Saima Mehboob
LEVERAGING ARTIFICIAL INTELLIGENCE FOR PLAYFUL AND INCLUSIVE EDUCATION: DEVELOPING SEMI-AUTOMATIC AND ADAPTIVE EDUCATIONAL PATHS . . . 123

CHAPTER II.
New Methods and Technologies in E-learning. Development of Key and Soft Competences by E-learning

Filipe Carrera
PREFACE. ENHANCING STUDENT FLEXIBILITY AND ENGAGEMENT IN ONLINE HIGHER EDUCATION: THE IMPACT OF INSTRUCTOR-CREATED VIDEO MATERIALS. 137

Yuliia Rudenko, Volodymyr Proshkin, Olha Naboka, Artem Yurchenko, & Olena Semenikhina
USING BLOOM'S TAXONOMY TO ASSESS INFORMATION HYGIENE SKILLS 141

Magdalena Zavodna, Tatiana Havlaskova, Tomas Javorcik, & Katerina Kostolanyova
TEACHER STUDENTS' PERCEPTIONS OF THE ADVANTAGES AND DISADVANTAGES OF ONLINE AND FACE-TO-FACE LEARNING AS A BASIS FOR DESIGNING HYBRID LEARNING. 153

Mariia Astafieva, Oksana Hlushak, Kateryna Hruzdova, & Volodymyr Proshkin
USING MOODLE FOR INQUIRY BASED LEARNING IN MATHEMATICS 165

Valeriia Necherda, Kateryna Bezruk, Zhanna Petrochko, & Valentyna Kyrychenko, Olena Denysiuk
GAMIFICATION AS A MEANS OF FORMATION SOCIALLY SUCCESSFUL PERSONALITY OF A TEENAGER 179

Iryna Machulina, Liudmila Sorokina, Oksana Shelomovska, Nataliia Sorokina, & Maryna Romaniukha
DEVELOPING INFORMATION CULTURE IN STUDENTS DURING E-LEARNING. 193

Ani Epitropova
EVALUATING THE TOOL FOR ENHANCING PRE-SERVICE TEACHERS' DIGITAL COMPETENCIES IN PROFESSIONAL COMMUNICATION AND COLLABORATION. 209

Svitlana Skvortsova, Tetiana Britskan, Tetiana Symonenko, & Kateryna Niedialkova
DEGREE OF READINESS OF TEACHERS OF UKRAINE FOR USE ICT IN THEIR PROFESSIONAL ACTIVITIES: 2019–2022 223

CHAPTER III.
E-learning in STEM and STEAM Education

Štefan Gubo, Ladislav Végh, Zoltán Fehér, & Ladislav Jaruska
EXAMINATION OF SOLUTION TIMES TO COMPUTER SCIENCE AND PHYSICS TASKS: A STUDY IN SLOVAK AND HUNGARIAN SECONDARY SCHOOL STUDENTS 239

Angelika Schmid, Lilla Korenova, Adi Nur Cahyono, Jozef Hvorecky, & Zsolt Lavicza
GEOGEBRA AS A CONSTRUCTIVISM TEACHING TOOL FOR VISUALIZATION GEOMETRY USING VR AND AR 253

Oksana A. Chernysh, Tetiana A. Vakaliuk, Y. O. Kanchura, N. P. Plakhotniuk, B. C. Başaran Uysal, & N. A. Panchenko
SURVEY ON THE USE OF ELECTRONIC MULTILINGUAL TERMINOLOGICAL DICTIONARY 265

Małgorzata Bartoszewicz, Grzegorz Krzyśko, Kamil Cieślak, & Julia Frąckowiak
DIGITAL SUPPORT IN THE IMPLEMENTATION OF CHEMISTRY LABORATORY CLASSES 279

Hennadii Karimov, Marina Romaniukha, Ivan Karimov, & Natalia Kuzmenko
TRENDS IN DEVELOPING DIGITAL SKILLS OF STUDENTS IN DUAL STUDY MODE 291