

1. Record Nr.	UNISA996550550403316
Titolo	Towards a Collaborative Society Through Creative Learning : IFIP World Conference on Computers in Education, WCCE 2022, Hiroshima, Japan, August 20-24, 2022, Revised Selected Papers // Therese Keane [and three others], editors
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2023] ©2023
ISBN	3-031-43393-9
Edizione	[First edition.]
Descrizione fisica	1 online resource (xix, 699 pages) : illustrations (some color)
Collana	IFIP Advances in Information and Communication Technology Series ; ; Volume 685
Disciplina	371.334
Soggetti	Computer-assisted instruction Education Data processing Educational technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Digital Education -- National Policies and Plans for Digital Competence -- Organization -- Contents -- Digital Education in Schools -- Digital Education in the Post-Covid Era: Challenges and Opportunities to Explore -- 1 Introduction -- 2 Digital (Mobile) Learning from a Pedagogical Perspective -- 3 Challenges and Opportunities to Explore in the Post-Covid Era -- 3.1 Digital Education Integrated in the Educational System -- 3.2 Opportunities to Engage in More Flexible and Mobile Forms of Teaching and Learning -- 3.3 National Policies Reconsideration - Digital Mobile Technology Utilization -- 3.4 Improvement of Institutional/School Infrastructure - Creation of Educational Resources -- 3.5 Enhancement of Students' and Teachers' Digital Technology Skills -- 4 Recommendations - Suggestions -- 4.1 Digital Learning should be Integral to Good Teaching: Pedagogy is Essential -- 4.2 Support for Teachers and Students -- 4.3 Sufficient Cooperation among Stakeholders and Teachers -- 4.4 Ensure Funding and Digitalization - Transformation of Education -- 4.5 Hybrid/Blended Education in the Post-Covid Era -- 5 Future Research -- References -- A Study

of Measurement of Mentoring Activities Using Text Mining Technology -- 1 Introduction -- 2 Conventional Method -- 3 Proposed Method -- 3.1 Text Mining -- 3.2 IBM Watson Discovery -- 4 Tokyo P-TECH -- 5 Analysis and Result -- 5.1 Data -- 5.2 Analysis Result -- 6 Conclusion -- References -- Development Plan and Trial of Japanese Language e-Learning System Focusing on Content and Language Integrated Learning (CLIL) Suitable for Digital Education -- 1 Introduction -- 1.1 Current Status of Japanese Language Education -- 1.2 Literature Review -- 2 Methods -- 2.1 Teaching Materials on Moodle -- 2.2 Text-to-Speech and Speech-to-Text -- 2.3 Content and Language Integrated Learning.

3 Trial for Japanese Learners -- 3.1 The Target Learner -- 3.2 Implementation Details -- 3.3 Intonation Adjustment -- 3.4 The Results -- 4 Discussion and Conclusions -- References -- STEM Programs at Primary School: Teachers Views and Concerns About Teaching "Digital Technologies" -- 1 Introduction -- 1.1 Teachers' Attitudes Towards Integrating Digital Technologies Learning Areas into STEM Subjects -- 1.2 Research Context and Research Question -- 2 Methodology -- 2.1 Establishing Validity and Reliability of the Questionnaire -- 3 Findings From the Pilot Study -- 4 Conclusion -- References -- Fostering Students' Resilience. Analyses Towards Factors of Individual Resilience in the Computer and Information Literacy Domain -- 1 Introduction and Theoretical Framework -- 1.1 Introduction -- 1.2 Theoretical Framework -- 1.3 Research Findings towards the Phenomenon of Resilience in the CIL Domain -- 1.4 Research Questions -- 2 Data Sources, Methods, and Statistical Techniques -- 2.1 Data Source: Representative Samples from the ICILS 2018 Database -- 2.2 Identifying Resilient Students -- 2.3 Statistical Techniques Explaining the Probability of being Resilient in the CIL Domain: Logistic Regression -- 2.4 Instruments and Materials -- 3 Results, Summary, and Conclusion -- 3.1 Results Towards the Proportion of Resilient Students in the CIL Domain (Research Question 1) -- 3.2 Results Towards Determinants of Students' Resilience in the CIL Domain (Research Question 2) -- 4 Summary and Conclusion -- References -- A Workshop of a Digital Kamishibai System for Children and Analysis of Children's Works -- 1 Introduction -- 2 A Digital Kamishibai Workshop for Children -- 2.1 Overview of the Workshop -- 2.2 Questionnaire for Children -- 2.3 Participants at the Workshop -- 2.4 Questionnaire for Parents -- 3 Review of Kamishibai Works -- 4 Discussion.

5 Conclusion and Future Works -- References -- ELSI (Ethical, Legal, and Social Issues) Education on Digital Technologies: In the Field of Elementary and Secondary Education -- 1 Introduction -- 1.1 Research Background -- 1.2 Purpose and Significance of This Study -- 2 What is ELSI? -- 2.1 Origin and Overview of ELSI -- 2.2 Relationship Between Ethics, Law, and Society -- 2.3 RRI: Responsible Research and Innovation -- 2.4 Recent Trends in ELSI: Examples from the Field of Artificial Intelligence -- 2.5 Necessity of Public Participation in ELSI -- 3 ELSI Education in Elementary and Secondary Education -- 3.1 Definition of ELSI Education -- 3.2 Introduction of ELSI Education -- 3.3 Why ELSI Education Is Needed? -- 3.4 Ethics, Morality, and Digital Citizenship -- 4 Perspectives on Promoting ELSI Education -- 4.1 Directions for ELSI Education on Digital Technologies -- 4.2 Preparation for Teachers to Implement ELSI Education -- 4.3 Example of ELSI Education in Practice -- 5 Conclusion -- References -- EdTech as an Empowering Tool: Designing Digital Learning Environments to Extend the Action Space for Learning and Foster Digital Agency -- 1 Introduction -- 2 Methodology -- 3 Towards an Action Space for Learning -- 3.1 What is

Action Space for Learning? -- 4 Empirical Context -- 4.1 The DOER Microworld - Lego Modelled Distributed Decentralised Open Educational Resources -- 4.2 EdTech as an Empowering Tool - Extending the Action Space for Learning and Fostering Digital Agency -- 5 Research Findings -- 6 Conclusion -- References -- Educational Support to Develop Socially Disadvantaged Young People's Digital Skills and Competencies: The Contribution of Collaborative Relationships Toward Young People's Empowerment -- 1 Introduction -- 2 Relevant Literature -- 3 Methodologies -- 4 Findings.

4.1 Role Identity Adding Meaning to Programming as Social Participation -- 4.2 Active Group Contributions and Resulting Learning as Drivers of Digital Literacy and Competency Acquisition -- 4.3 Programming as a Proactive Learning Experience Through Trial-and-Error Attempts Without Sufficient Information or Knowledge -- 4.4 Active Involvement with Programming as the People's Cultural Identity -- 5 Discussion -- 6 Conclusion and Limitations -- References -- Development and Evaluation of a Field Environment Digest System for Agricultural Education -- 1 Introduction -- 2 Related Work -- 3 Field Environment Digest System -- 3.1 Chart-Based Visualization of Field Sensing Information -- 3.2 Table Digest -- 3.3 List Digest -- 3.4 Collecting Operation Logs -- 4 Experiment -- 4.1 Experimental Setting -- 4.2 Experimental Results -- 5 Conclusion -- References -- Predictive Evaluation of Artificial Intelligence Functionalities of Software: A Study of Apps for Children's Learning of English Pronunciation -- 1 Introduction -- 2 Literature Review -- 2.1 What Is Predictive Evaluation? -- 2.2 A Social Constructivist Approach to Predictive Evaluation of Software -- 3 Predictive Evaluation of the AI Functionalities of English Learning Apps for ESL Pronunciation -- 3.1 Selection of AI-Powered English Learning Apps for Pronunciation -- 3.2 AI Functionalities for English Pronunciation -- 4 Conclusion -- References -- Computing in Schools -- Curriculum Development and Practice of Application Creation Incorporating AI Functions -- Learning During After-School Hours -- 1 Introduction -- 1.1 Background -- 1.2 Current Status and Issues of Education on AI -- 1.3 Purpose and Significance of this Study -- 2 Method -- 2.1 Overview of Research Methods: Development of Teaching Materials, Practice, Pedagogical Methods and Evaluation -- 2.2 Overview of the Developed Curriculum.

3 Educational Practices and Student Responses -- 3.1 Practice: Overview, Production, Examples of Work -- 3.2 Results of the Survey -- 4 Conclusion -- References -- Assessing Engagement of Students with Intellectual Disabilities in Educational Robotics Activities -- 1 Introduction -- 2 Engagement and Its Measurement -- 3 Tools Developed to Measure Engagement -- 3.1 Observation Grid -- 3.2 Verbal Expressions -- 3.3 The Questionnaire -- 4 Case Study -- 4.1 The Educational Activity with Creative Robotics -- 4.2 The Participants -- 4.3 The Method -- 5 Results -- 5.1 Questionnaire and Interview -- 5.2 Observation Grid -- 5.3 Verbal Expressions -- 6 Discussion -- 7 Limits and Conclusions -- References -- Arguing for a Quantum Computing Curriculum: Lessons from Australian Schools -- 1 Introduction -- 1.1 Technological Innovations -- 1.2 Educational Transformations -- 2 Australian Case Study -- 2.1 Background -- 2.2 Australian Computer Society Survey of Schools -- 3 Time from Innovation to Educational Implementation -- 4 Future Innovations and Transformations -- 4.1 Arguing for a Quantum Computing Curriculum -- 4.2 Other Teaching Approaches -- 4.3 The Role of Informatics Frameworks -- 5 Future Moves -- 6 Conclusion -- References -- Characterization of Knowledge Transactions in Design-

Based Research Workshops -- 1 Introduction -- 2 Theoretical Framework: Knowledge Sharing Process in Design-Based Research -- 2.1 Boundary Objects to Share Knowledge -- 2.2 Knowledge Transactions -- 3 Case Study of the PLAY Project -- 4 Analyses -- 4.1 The Learning Game Geome as a Boundary Object -- 4.2 Verbatim Analyses -- 4.3 Towards Multilateral and Explicit Translation Processes -- 5 Conclusion -- References -- Developing Gender-Neutral Programming Materials: A Case Study of Children in Lower Grades of Primary School -- 1 Introduction; 1.1 Programming and Gender in Primary Schools.

Sommario/riassunto

This book contains the revised selected, refereed papers from the IFIP World Conference on Computers in Education on Towards a Collaborative Society through Creative Learning, WCCE 2022, Hiroshima, Japan, August 20-24, 2022. A total of 61 papers (54 full papers and 7 short papers) were carefully reviewed and selected from 131 submissions. They were organized in topical sections as follows: Digital Education and Computing in Schools, Digital Education and Computing in Higher Education, National Policies and Plans for Digital Competence.
