

International Journal Of Child Computer Interaction

Cognitive Development in Digital Contexts investigates the impact of screen media on key aspects of children and adolescents' cognitive development. Highlighting how screen media impact cognitive development, the book addresses a topic often neglected amid societal concerns about pathological media use and vulnerability to media effects, such as aggression, cyber-bullying and Internet addiction. It addresses children and adolescents' cognitive development involving their interactions with parents, early language development, imaginary play, attention, memory, and executive control, literacy and academic performance. Covers the impact of digital from both theoretical and practical perspectives Investigates effects of digital media on attention, memory, language and executive functioning Examines video games, texting, and virtual reality as contexts for learning Explores parent-child interactions around media Considers the development of effective educational media Addresses media literacy and critical thinking about media Considers social policy for increasing access to high quality education media and the Internet Provides guidance for parents on navigating children's technology usage

Cyber security is a key focus in the modern world as more private information is stored and saved online. In order to ensure vital information is protected from various cyber threats, it is essential to develop a thorough understanding of technologies that can address cyber security challenges. Artificial intelligence has been recognized as an important technology that can be employed successfully in the cyber security sector. Due to this, further study on the potential uses of artificial intelligence is required. *Methods, Implementation, and Application of Cyber Security Intelligence and Analytics* discusses critical artificial intelligence technologies that are utilized in cyber security and considers various cyber security issues and their optimal solutions supported by artificial intelligence. Covering a range of topics such as malware, smart grid, data breaches, and machine learning, this major reference work is ideal for security analysts, cyber security specialists, data analysts, security professionals, computer scientists, government officials, researchers, scholars, academicians, practitioners, instructors, and students.

Mobile technologies combined with an interdisciplinary approach to knowledge and organization of learning experiences that are meaningful to children could create a creative and interactive learning environment different from that of traditional teaching. Making good use of mobile learning with appropriate devices will increase the learning motivations of the students and help them bring about positive performance. *Mobile Learning Applications in Early Childhood Education* is a collection of innovative research on the methods and applications of mobile learning techniques and strategies within diversified teaching settings. While highlighting topics including computational thinking, ubiquitous learning, and social development, this book is ideally designed for researchers, teachers, parents, curriculum developers, instructional designers, academicians, students, and practitioners seeking current research on the application of mobile technology within child education.

How and Why to Read and Create Children's Digital Books outlines effective ways of using digital books in early years and primary classrooms, and specifies the educational potential of using digital books and apps in physical spaces and virtual communities. With a particular focus on apps and personalised reading, Natalia Kucirkova combines theory and practice to argue that personalised reading is only truly personalised when it is created or co-created by reading communities. Divided into two parts, Part I suggests criteria to evaluate the educational quality of digital books and practical strategies for their use in the classroom. Specific attention is paid to the ways in which digital books can support individual children's strengths and difficulties, digital literacies, language and communication skills. Part II explores digital books created by children, their caregivers, teachers and librarians, and Kucirkova also offers insights into how smart toys, tangibles and augmented/virtual reality tools can enrich children's reading for pleasure. *How and Why to Read and Create Children's Digital Books* is of interest to an international readership ranging from trainee or established teachers to MA level students and researchers, as well as designers, librarians and publishers. All are inspired to approach children's reading on and with screens with an agentic perspective of creating and sharing. Praise for *How and Why to Read and Create Children's Digital Books* 'This is an exciting and innovative book – not least because it is freely available to read online but because its origins are in primary practice. The

author is an accomplished storyteller, and whether you know, as yet, little about the value of digital literacy in the storymaking process, or you are an accomplished digital player, this book is full of evidence-informed ideas, explanations and inspiration.' Liz Chamberlain, Open University 'At a time when children's reading is increasingly on-screen, many teachers, parents and carers are seeking practical, straightforward guidance on how to support children's engagement with digital books. This volume, written by the leading expert on personalised e-books, is packed with app reviews, suggestions and insights from recent international research, all underpinned by careful analysis of digital book features and recognition of reading as a social and cultural practice. Providing accessible guidance on finding, choosing, sharing and creating digital books, it will be welcomed by those excited by the possibilities of enthusing children about reading in the digital age.' Cathy Burnett, Professor of Literacy and Education, Sheffield Hallam University

The Routledge International Handbook of Learning with Technology in Early Childhood
Handbook of Research on Tools for Teaching Computational Thinking in P-12 Education
Digital Technology and Organizational Change
A Guide for Primary Practitioners
Reshaping Technology, People, and Organizations Towards a Global Society
Museum Experience Design

Doing research with young children can be challenging for many reasons, but this book provides clear guidance on how to engage in appropriate methods. Focusing on researching through play, careful consideration is given to:

- the founding principles of playful research
- understanding young children's perspectives
- prioritising the rights of the child and the voice of the child
- examples of innovative research methods

Real life examples and research projects are presented, to enable common challenges to be anticipated and to showcase successful creative approaches, and to inspire new paths in research.

While the growth of computational thinking has brought new awareness to the importance of computing education, it has also created new challenges. Many educational initiatives focus solely on the programming aspects, such as variables, loops, conditionals, parallelism, operators, and data handling, divorcing computing from real-world contexts and applications. This decontextualization threatens to make learners believe that they do not need to learn computing, as they cannot envision a future in which they will need to use it, just as many see math and physics education as unnecessary. The Handbook of Research on Tools for Teaching Computational Thinking in P-12 Education is a cutting-edge research publication that examines the implementation of computational thinking into school curriculum in order to develop creative problem-solving skills and to build a computational identity which will allow for future STEM growth. Moreover, the book advocates for a new approach to computing education that argues that while learning about computing, young people should also have opportunities to create with computing, which will have a direct impact on their lives and their communities. Featuring a wide range of topics such as assessment, digital teaching, and educational robotics, this book is ideal for academicians, instructional designers, teachers, education professionals, administrators, researchers, and students.

Interaction Design and ChildrenNow Publishers Inc

What does it mean to become a reader? What are the challenges and opportunities of engaging children in reading for pleasure in the 21st century? This book explores the ways in which reading for pleasure is changing in the era of globalisation, multiculturalism and datafication. Raising the next generation of engaged readers requires knowledge of the enduring characteristics of engagement and markers of quality in books and e-books. In addition, in order to develop new insights into children's experience of reading on and off screen, nuanced understandings of psychological and socio-cultural research are offered. The cross-disciplinary examination integrates key research from educational psychology, new literacies, multimodality and socio-cultural perspectives and explores consequences for practice. An authoritative guide - it invites graduates, researchers and teachers to participate in the authors' interdisciplinary dialogue about reading for pleasure.

Introduction to Play

Cognitive Development in Digital Contexts

Assistive Technology

Technology to Support Children's Collaborative Interactions

Building Bridges

Games User Research

Digital Learning and Collaborative Practices offers a comprehensive overview of design-based, technology-enhanced approaches to teaching and learning in virtual settings. Today's digital communications foster new opportunities for sharing culture and knowledge while also prompting concerns over division, disinformation and surveillance. This book uniquely emphasises playful, collaborative experiences and democratic values in a variety of environments—adaptive, augmented, dialogic, game-based and beyond. Graduate students and researchers of educational technology, the learning sciences and interaction design will discover rich theories, interventions, models and approaches for concretising emerging practices and competencies in digital learning spaces.

Assistive Technology (AT) is the term used to describe products or technology-based services which support those with disabilities or other limitations to their daily activities, enabling them to enjoy a better quality of life. This book presents the proceedings of the 13th European Conference on the Advancement of Assistive Technology (AAATE 2015), held in Budapest, Hungary in September 2015. This biennial conference has established itself as a leading forum in the transdisciplinary area of Assistive Technology, providing a unique platform for the gathering of experts from around the world to review progress and challenges in the interdisciplinary fields which contribute to AT, such as research, development, manufacturing, supply, provision and policy. The theme of the 2015 conference is 'Attracting new areas and building bridges', and this book contains 138 reviewed papers and 28 poster presentations delivered at the conference, covering AT themes as diverse as aging, blindness, mobility, assisted living and accessibility for people with dementia and cognitive impairment. Offering a current overview of many aspects of AT, this book will be of interest to all those – from researchers and manufacturers to healthcare professionals and end-users – whose work or daily life involves the relationship between technology and disability.

An essential guide for any professionals working with autistic children and young adults, this book provides expert insights which need to be considered by professionals, parents and autistic people alike. It covers key themes such as anxiety and wellbeing, transition into adulthood, sexuality, intersectionality, and many more. A unique blend of first-hand experience, parental guidance and professional advice is provided from prominent figures in the autism field to offer you an overview of the important issues of today, to help you understand and better support autistic young people.

This handbook reviews efforts to increase the use of empirical methods in studies of the aesthetic and social effects of literary reading. The reviewed research is expansive, including extension of familiar theoretical models to novel domains (e.g., educational settings); enlarging empirical efforts within under-represented research areas (e.g., child development); and broadening the range of applicable quantitative and qualitative methods (e.g., computational stylistics; phenomenological methods). Especially challenging is articulation of the subtle aesthetic and social effects of literary artefacts (e.g., poetry, film). Increasingly, the complexity of these effects is addressed in multi-variate studies, including confirmatory factor analysis and structural equation modeling. While each chapter touches upon the historical background of a specific research topic, two chapters address the area's historical background and guiding philosophical assumptions. Taken together, the material in this volume provides a systematic introduction to the area for early career professionals, while challenging active researchers to develop theoretical frameworks and empirical procedures that match the complexity of their research objectives.

The Routledge Companion to Digital Media and Children

How and Why to Read and Create Children's Digital Books

Mobile Learning Applications in Early Childhood Education

Crowds, Ecosystems and Novel Technologies

Reading in the Digital Age: Young Children's Experiences with E-books

Software Engineering Perspectives in Computer Game Development

Millions of children have been diagnosed with autism or fall somewhere within the autism spectrum. Early intervention, education, and training programs have been found to support these students immensely, leading to a higher level of independent social life than has previously been seen. Anxiety, bullying, communication, and learning abstract concepts can be a great challenge for autistic children and can also provide an obstacle for social interaction with other children. It is important to continue offering these students access to a broad, enriched, and balanced curriculum while also devising new approaches and alternative systems of communication that will help to facilitate their access to the educational process and foster adaptive behaviors. Interventions for Improving Adaptive Behaviors in Children With Autism Spectrum Disorders offers a current overview of modern practices regarding the teaching of autistic children. This book seeks to update the current practices for professionals working with autistic children, offer practical information regarding interventions, and provide tools for managing autistic children in critical situations. Covering topics such as autism diagnostic observation schedule, inclusivity in schools, and vocational training for autistic people, this text is essential for teachers, special education teachers, administrators, speech therapists, academicians, researchers, students, and professionals and practitioners involved in the upbringing, education, social, and vocational inclusion of people with ASD.

Teaching models that focus on blended and virtual learning have become important during the past year and have become integral for the continuance of learning. The i²Flex classroom model, a variation of blended learning, allows non-interactive teaching activities to take place without teachers' direct involvement, freeing up time for more meaningful teacher-student and student-student interactions. There is evidence that i²Flex leads to increased student engagement and motivation as well as better exploitation of teachers' and classroom time leading to the development of higher order cognitive skills as well as study skills for students' future needs related to citizenship, college, and careers. The Handbook of Research on K-12 Blended and Virtual Learning Through the i²Flex Classroom Model focuses not only on how to design, deliver, and evaluate courses, but also on how to assess teacher performance in a blended i²Flex way at the K12 level. The book will discuss the implementation of the i²Flex (isquareFlex), a non-traditional learning methodology, which integrates internet-based delivery of content and instruction with faculty-guided, student-independent learning in combination with face-to-face classroom instruction aiming at developing higher order cognitive skills within a flexible learning design framework. While highlighting new methods for improving the classroom and learning experience in addition to preparing students for higher education and careers, this publication is an essential reference source for pre-service and in-service teachers, researchers,

administrators, educational technology developers, and students interested in how the i2Flex model was implemented in classrooms and the effects of this learning model. People currently live in a digital age in which technology is now a ubiquitous part of society. It has become imperative to develop and maintain a comprehensive understanding of emerging innovations and technologies. *Information and Technology Literacy: Concepts, Methodologies, Tools, and Applications* is an authoritative reference source for the latest scholarly research on techniques, trends, and opportunities within the areas of digital literacy. Highlighting a wide range of topics and concepts such as social media, professional development, and educational applications, this multi-volume book is ideally designed for academics, technology developers, researchers, students, practitioners, and professionals interested in the importance of understanding technological innovations.

This is the first comprehensive book on child-computer interaction, covering basic concepts as well as the latest research. The book is ideal for graduate students entering the field, as well as for practitioners and researchers coming from other fields who want to quickly catch up with child-computer interaction research. It can also be a useful book for teaching courses on child-computer interaction.

Methods, Implementation, and Application of Cyber Security Intelligence and Analytics

Interaction Design and Children

Participatory Design for Learning

Mapping Reader Engagement

Information and Technology Literacy: Concepts, Methodologies, Tools, and Applications

Participatory Design is a field of research and design that actively engages stakeholders in the processes of design in order to better conceptualize and create tools, environments, and systems that serve those stakeholders. In *Participatory Design for Learning: Perspectives from Practice and Research*, contributors from across the fields of the learning sciences and design articulate an inclusive practice and begin the process of shaping guidelines for such collaborative involvement. Drawing from a wide range of examples and perspectives, this book explores how participatory design can contribute to the development, implementation, and sustainability of learning innovations. Written for scholars and students, *Participatory Design for Learning: Perspectives from Practice and Research* develops and draws attention to practices that are relevant to the facilitation of effective educational environments and learning technologies.

An Integrated Play-Based Curriculum for Young Children, Second Edition explores how to integrate play across the curriculum, helping teachers develop their early childhood curriculum using developmentally and culturally appropriate practice. Distinguished author Olivia N. Saracho offers a theoretical framework for understanding the origins of an early childhood play-based curriculum and illuminates how young children learn and understand concepts in a social and physical environment. This second edition has been fully updated throughout and its comprehensive coverage has been expanded with entirely new sections on technology and social media, cultural differences in play, and teaching ELLs and students with disabilities. Packed with vignettes, activities, and practical examples, this text is essential reading for pre-service teachers seeking appropriate theoretical practices for designing and implementing a play-based curriculum. Special Features Include: Suggestions and guidelines for activities and choosing classroom materials. Discussion of a full range of curriculum areas and topics including literacy, language, science, social studies, mathematics, art, music, blocks, and movement. Vignettes of children's conversations and examples of how children learn through play. End-of-chapter summaries to enhance and extend an understanding of young children.

This book includes a selection of the best research papers presented at the annual conference of the Italian chapter of the Association for Information Systems (AIS), which took place in Verona, Italy in October 2016. Tracing various aspects of the ongoing phenomenon of evolution towards a global society, and consequently the ever-innovating digital world, it first discusses emerging technologies and the new practices in the information-systems world. It then examines the new businesses and ongoing business transformations. Lastly, it considers the economic and societal changes brought about by access to and exploitation of socio-technical networks. The plurality of views offered makes the book particularly relevant for users, companies, scientists and governments.

Over the last few years, increasing attention has been focused on the development of children's acquisition of 21st-century skills and digital competences. Consequently, many education scholars have argued that teaching technology to young children is vital in keeping up with 21st-century employment patterns. Technologies, such as those that involve robotics or coding apps, come at a time when the demand for computing jobs around the globe is at an all-time high while its supply is at an all-time low. There is no doubt that coding with robotics is a wonderful tool for learners of all ages as it provides a catalyst to introduce them to computational thinking, algorithmic thinking, and project management. Additionally, recent studies argue that the use of a developmentally appropriate robotics curriculum can help to change negative stereotypes and ideas children may initially have about technology and engineering. The *Handbook of Research on Using Educational Robotics to Facilitate Student Learning* is an edited book that advocates for a new approach to computational thinking and computing education with the use of educational robotics and coding apps. The book argues that while learning about computing, young people should also have opportunities to create with computing, which have a direct impact on their lives and their communities. It develops two key dimensions for understanding and developing educational experiences that support students in engaging in computational action: (1) computational identity, which shows the importance of young people's development of scientific identity for future STEM growth; and (2) digital empowerment to instill the belief that they can put their computational identity into action in authentic and meaningful ways. Covering subthemes including student competency and assessment, programming education, and teacher and mentor development, this book is ideal for teachers, instructional designers, educational technology developers, school administrators, academicians, researchers, and students.

Educational Psychology Perspectives on Supporting Young Autistic People

Research Anthology on Computational Thinking, Programming, and Robotics in the Classroom

Handbook of Research on the Education of Young Children

Cognitive Computing in Technology-Enhanced Learning

Teaching, Learning, and Leading With Computer Simulations

Handbook of Empirical Literary Studies

Modern society gives great importance to scientific and technological literacy, development of "21st century skills," and creating individuals who are not passive users of ICT tools but active thinkers and even tinkerers. The learning process is thus constantly evolving to facilitate the acquisition of such skills, such as setting goals and making evidence-based decisions, thinking critically, and solving problems while efficiently managing time as well as using technology, cooperating ethically, and communicating effectively.

STEAM is the approach to learning that uses concepts from natural sciences, technology, engineering, arts, and mathematics to foster critical thinking, computational and design

thinking, as well working effectively together, mimicking the process followed by scientists. The end goal is engaged and motivated students who participate in experiential and inquiry-based learning in fun, immersive environments that facilitate learning through a creative process. The Handbook of Research on Integrating ICTs in STEAM Education includes current research focusing on the development of STEAM and ICT educational practices, tools, workflows, and frames of operation that encourage science skills, but also skills related to the arts and humanities such as creativity, imagination, and reflection on ethical implications. Covering topics such as early childhood education, machine learning education, educational robotics, and web-based simulations, this major reference work is an essential resource for engineers, educators of both K-12 and higher education, education administration, libraries, pre-service teachers, computer scientists, researchers, and academics.

The education system is constantly growing and developing as more ways to teach and learn are implemented into the classroom. Recently, there has been a growing interest in teaching computational thinking with schools all over the world introducing it to the curriculum due to its ability to allow students to become proficient at problem solving using logic, an essential life skill. In order to provide the best education possible, it is imperative that computational thinking strategies, along with programming skills and the use of robotics in the classroom, be implemented in order for students to achieve maximum thought processing skills and computer competencies. The Research Anthology on Computational Thinking, Programming, and Robotics in the Classroom is an all-encompassing reference book that discusses how computational thinking, programming, and robotics can be used in education as well as the benefits and difficulties of implementing these elements into the classroom. The book includes strategies for preparing educators to teach computational thinking in the classroom as well as design techniques for incorporating these practices into various levels of school curriculum and within a variety of subjects. Covering topics ranging from decomposition to robot learning, this book is ideal for educators, computer scientists, administrators, academicians, students, and anyone interested in learning more about how computational thinking, programming, and robotics can change the current education system.

Epistemological Approaches to Digital Learning in Educational Contexts is dedicated to topical issues in school education and pedagogical science related to the learning process in a technology and media enriched environment. It opens up discussions on the development of the educational science sector and strategies for smart pedagogy to promote synergy between technology and pedagogy to support students in the learning process. The book presents different perspectives on how to evaluate the enhancement of technology use, which can help improve Computational Thinking skills. It also helps in identifying the changes in pupils' algorithmic thinking through programming in Scratch 2.0. The book further explores the way digitally-mediated materiality may support teaching practice and proposes tools that are available for the educational curator in a digital learning environment. This book will be of great interest to academics, researchers, and post-graduate students in the fields of higher education, vocational education, and digital learning.

This companion presents the newest research in this important area, showcasing the huge diversity in children's relationships with digital media around the globe, and exploring the benefits, challenges, history, and emerging developments in the field. Children are finding novel ways to express their passions and priorities through innovative uses of digital communication tools. This collection investigates and critiques the dynamism of children's lives online with contributions fielding both global and hyper-local issues, and bridging the wide spectrum of connected media created for and by children. From education to children's rights to cyberbullying and youth in challenging circumstances, the interdisciplinary approach ensures a careful, nuanced, multi-dimensional exploration of children's relationships with digital media. Featuring a highly international range of case studies, perspectives, and socio-cultural contexts, The Routledge Companion to Digital Media and Children is the perfect reference tool for students and researchers of media and communication, family and technology studies, psychology, education, anthropology, and sociology, as well as interested teachers, policy makers, and parents.

Insights from Experience, Practice and Research

ECEL 2019 18th European Conference on e-Learning

International Studies with E-books in Diverse Contexts

Lessons from Inclusive and Empowering Participation with Emerging Technologies

Handbook of Research on Using Educational Robotics to Facilitate Student Learning

Children Reading for Pleasure in the Digital Age

Featuring contributions from leading experts in software engineering, this edited book provides a comprehensive introduction to computer game software development. It is a complex, interdisciplinary field that relies on contributions from a wide variety of disciplines including arts and humanities, behavioural sciences, business, engineering, physical sciences, mathematics, etc. The book focuses on the emerging research at the intersection of game and software engineering communities. A brief history of game development is presented, which considers the shift from the development of rare games in isolated research environments in the 1950s to their ubiquitous presence in popular culture today. A summary is provided of the latest peer-reviewed research results in computer game development that have been reported at multiple levels of maturity (workshops, conferences, and journals). The core chapters of the book are devoted to sharing emerging research at the intersection of game development and software engineering. In addition, future research opportunities on new software engineering methods for games and serious educational games for software engineering education are highlighted. As an ideal reference for software engineers, developers, educators, and researchers, this book explores game development topics from software engineering and education perspectives.

Key Features: Includes contributions from leading academic experts in the community Presents a current collection of emerging research at the intersection of games and software engineering Considers the interdisciplinary field from two broad perspectives: software engineering methods for game development and serious games for software engineering education Provides a snapshot of the recent

literature (i.e., 2015-2020) on game development from software engineering perspectives

Understanding Tablets from Early Childhood to Adulthood offers an alternative to dominant and populist narratives that young people are intuitively able to successfully use tablet devices. Adopting a research-driven approach, the book contests the ideology that touch-technologies are easier to understand, and identifies the factors that contribute to communicative encounters between users and tablets. Communication theory and cognitive psychology concepts and methods are employed to offer an epistemological exploration of user-tablet interaction with a focus on the use of these technologies in educational settings.

This edited book focuses on affordances and limitations of e-books for early language and literacy, features and design of e-books for early language and literacy, print versus e-books in early language and literacy development, and uses of and guidelines for how to use e-books in school and home literacy practices. Uniquely, this book includes critical reviews of diverse aspects of e-books (e.g., features) and e-book uses (e.g., independent reading) for early literacy as well as multiple examinations of e-books in home and school contexts using a variety of research methods and/or theoretical frames. The studies of children's engagement with diverse types of e-books in different social contexts provide readers with a contemporary and comprehensive understanding of this topic. Research has demonstrated that ever-increasing numbers of children use digital devices as part of their daily routine. Yet, despite children's frequent use of e-books from an early age, there is a limited understanding regarding how those e-books are actually being used at home and school. As more e-books become available, it is important to examine the educational benefits and limitations of different types of e-books for children. So far, studies on the topic have presented inconsistent findings regarding potential benefits and limitations of e-books for early literacy activities (e.g., independent reading, shared reading). The studies in this book aim to fill such gaps in the literature.

The go-to textbook for everything you need to know about play! Covering ages 0-8, this book explores what play is, why it matters and where and how play happens. Taking you from start to finish on your course, it helps you: Think critically about play and play provision Understand what good practice looks like See how theory translates into real-world settings Explore the issues, debates, and challenges within play and early learning

A Case Study Approach

Digital Learning and Collaborative Practices

Design, Applications, and Maintenance of Cyber-Physical Systems

Non-Formal and Informal Science Learning in the ICT Era

Handbook of Research on Integrating ICTs in STEAM Education

Concepts, Methodologies, Tools, and Applications

"Fundamentally, making games is designing with others, everyone contributing from different angles towards the best possible product. Conclusively, Garcia-Ruiz has chosen a collection of chapters that demonstrates several different aspects of working in gaming and working with others that stands to raise the level of expertise in the field." —Veronica Zammito, Senior Lead Games User Research, Electronic Arts, Inc., from the Foreword Usability is about making a product easy to use while meeting the requirements of target users. Applied to video games, this means making the game accessible and enjoyable to the player. Video games with high usability are generally played efficiently and frequently while enjoying higher sales volumes. The case studies in this book present the latest interdisciplinary research and applications of games user research in determining and developing usability to improve the video game user experience at the human-computer interface level. Some of the areas examined include practical and ethical concerns in conducting usability testing with children, audio experiences in games, tangible and graphical game interfaces, controller testing, and business models in mobile gaming. Games User Research: A Case Study Approach provides a highly useful resource for researchers, practitioners, lecturers, and students in developing and applying methods for testing player usability as well as for conducting games user research. It gives the necessary theoretical and practical background for designing and conducting a test for usability with an eye toward modifying software interfaces to improve human-computer interaction between the player and the game.

This book explores how technology can foster interaction between children and their peers, teachers and other adults. It presents the Co-EnACT framework to explain how technology can support children to collaborate, so helping them to learn and engage enjoyably with the world, in both work and play. The focus is on children, rather than young people, but the principles of supporting interaction apply throughout all life stages. Chapters on classrooms and on autism explain principles behind using technology in ways that support, rather than obstruct, social interaction in diverse populations. Collaborative interaction involves both verbal and non-verbal behaviour and this book presents evidence from closely analysing children's behaviour in natural settings. Examples from cutting-edge technology illustrate principles applicable to more widely-available technology. The book will be of interest to psychologists, educators, researchers in Human-Computer Interaction (HCI), particularly those designing with children in mind, and practitioners working with children who want to deepen their understanding of using technology for collaboration.

The Routledge International Handbook of Learning with Technology in Early Childhood focuses specifically on the most cutting-edge, innovative and international approaches in the study of children's use of and learning with digital technologies. This edited volume is a comprehensive survey of methods in children's technologies and contains a rich repertoire of studies from diverse fields and research, including both educational and developmental psychology, post-humanist literacy, applied linguistics, language and phenomenology and narrative approaches. For ease of reference, the Handbook's 28 chapters are divided into four thematic sections: introduction and opening reflections; studies answering ontological questions, which theorize how children take on original identities in becoming literate with technologies; studies answering epistemological questions, which focus on how children's knowledge and learning are (co)constructed with a diverse range of technologies; studies answering practice-related questions, which explore the resources and conditions that create the most powerful learning opportunities for children. Expertly edited, this interdisciplinary and international compendium is an ideal introduction to such a diverse, multi-faceted field.

Cyber-physical systems (CPS) can be defined as systems in which physical objects are represented in the digital world and integrated with computation, storage, and communication capabilities and are connected to each other in a network. The goal in the use of the CPS is integrating the dynamics of the physical processes with those of the software and networking,

providing abstractions and modelling, design, and analysis techniques for the integrated whole. The notion of CPS is linked to concepts of robotics and sensor networks with intelligent systems proper of computational intelligence leading the pathway. Recent advances in science and engineering improve the link between computational and physical elements by means of intelligent systems, increasing the adaptability, autonomy, efficiency, functionality, reliability, safety, and usability of cyber-physical systems. The potential of cyber-physical systems will spread to several directions, including but not limited to intervention, precision manufacturing, operations in dangerous or inaccessible environments, coordination, efficiency, Maintenance 4.0, and augmentation of human capabilities. Design, Applications, and Maintenance of Cyber-Physical Systems gives insights about CPS as tools for integrating the dynamics of the physical processes with those of software and networking, providing abstractions and modelling, design, and analysis techniques for their smart manufacturing interoperation. The book will have an impact upon the research on robotics, mechatronics, integrated intelligent multibody systems, Industry 4.0, production systems management and maintenance, decision support systems, and Maintenance 4.0. The chapters discuss not only the technologies involved in CPS but also insights into how they are used in various industries. This book is ideal for engineers, practitioners, researchers, academicians, and students who are interested in a deeper understanding of cyber-physical systems (CPS), their design, application, and maintenance, with a special focus on modern technologies in Industry 4.0 and Maintenance 4.0.

Understanding Tablets from Early Childhood to Adulthood

Perspectives from Practice and Research

Child-Computer Interaction

Handbook of Research on Empowering Early Childhood Educators With Technology

Close Encounters of the Shared Kind

Interventions for Improving Adaptive Behaviors in Children With Autism Spectrum Disorders

This book will serve as a resource for students, researchers, and practitioners in the area of early childhood education. The 18 chapters are divided and organized into the major areas relevant to early childhood education: early childhood development, play, science, mathematics, technology, literacy, and exceptional learners. Each chapter contains an overview of background information pertinent to the chapter and a synopsis of research or a new research study. The information contained in this book provides a foundation for past and/or present research and suggests future research studies.

This state-of-the-art book explores the implications of contemporary trends that are shaping the future of museum experiences. In four separate sections, it looks into how museums are developing dialogical relationships with their audiences, reaching out beyond their local communities to involve more diverse and broader audiences. It examines current practices in involving crowds, not as passive audiences but as active users, co-designers and co-creators; it looks critically and reflectively at the design implications raised by the application of novel technologies, and by museums becoming parts of connected museum systems and large institutional ecosystems. Overall, the book chapters deal with aspects such as sociality, creation and sharing as ways of enhancing dialogical engagement with museum collections. They address designing experiences – including participatory exhibits, crowd sourcing and crowd mining – that are meaningful and rewarding for all categories of audiences involved. Museum Experience Design reflects on different approaches to designing with novel technologies and discusses illustrative and diverse roles of technology, both in the design process as well as in the experiences designed through those processes. The trend of museums becoming embedded in ecosystems of organisations and people is dealt with in chapters that theoretically reflect on what it means to design for ecosystems, illustrated by design cases that exemplify practical and methodological issues in doing so. Written by an interdisciplinary group of design researchers, this book is an invaluable source of inspiration for researchers, students and professionals working in this dynamic field of designing experiences for and around museums.

This book introduces the reader to evidence-based non-formal and informal science learning considerations (including technological and pedagogical innovations) that have emerged in and empowered the information and communications technology (ICT) era. The contributions come from diverse countries and contexts (such as hackerspaces, museums, makerspaces, after-school activities) to support a wide range of educators, practitioners, and researchers (such as K-12 teachers, learning scientists, museum curators, librarians, parents, hobbyists). The documented considerations, lessons learned, and concepts have been extracted using diverse methods, ranging from experience reports and conceptual methods to quantitative studies and field observation using qualitative methods. This volume attempts to support the preparation, set-up, implementation, but also evaluation of informal learning activities to enhance science education.

Various technologies and applications such as cognitive computing, artificial intelligence, and learning analytics have received increased attention in recent years. The growing demand behind their adoption and exploitation in different application contexts has captured the attention of learning technology specialists, computer engineers, and business researchers who are attempting to decipher the phenomenon of personalized e-learning, its relation to already conducted research, and its implications for new research opportunities that effect innovations in teaching. Cognitive Computing in Technology-Enhanced Learning is a critical resource publication that aims to demonstrate state-of-the-art approaches of advanced data mining systems in e-learning, such as MOOCs and other innovative technologies, to improve learning analytics, as well as to show how new and advanced user interaction designs, educational models, and adoptive strategies can expand sustainability in applied learning technologies. Highlighting a range of topics such as augmented reality, ethics, and online learning environments, this book is ideal for educators, instructional designers, higher education faculty, school administrators, academicians, researchers, and students.

An Integrated Play-based Curriculum for Young Children

Epistemological Approaches to Digital Learning in Educational Contexts

Research through Play

Handbook of Research on K-12 Blended and Virtual Learning Through the iFlex Classroom Model

Early Childhood Education

Participatory Methods in Early Childhood

Interaction Design and Children surveys the research on children's cognitive and motor development, safety issues related to technologies and design methodologies and principles. It also provides an overview of current research trends in the field of interaction design and children and identifies challenges for future research.

Computer simulation, a powerful technological tool and research-proven pedagogical technique, holds great potential to enhance and transform teaching and learning in education and is therefore a viable tool to engage students in deep learning and higher-order thinking. With the advancement of simulation technology (e.g., virtual reality, artificial intelligence, machine learning) and the expanded disciplines where computer simulation is being used (e.g., data science, cyber security), computer simulation is playing an increasingly significant role in leading the digital transformation in K-12 schools and higher education institutions, as well as training and professional development in corporations, government, and the military. Teaching, Learning, and Leading With Computer Simulations is an important compilation of research that examines the recent advancement of simulation technology and explores innovative ways to utilize advanced simulation programs for the enhancement of teaching and learning outcomes. Highlighting a range of topics such as pedagogy, immersive learning, and social sciences, this book is essential for educators, higher education institutions, deans, curriculum designers, school administrators, principals, IT specialists, academicians, researchers, policymakers, and students.

Computers and mobile technologies have become widely adopted as sought-after tools in the field of education. The prevalence of technology in early childhood education (ECE) is increasing, and teachers, both pre-service and in-service, are using best practices to integrate tools effectively to improve teaching and learning within the field. This includes settings such as childcare centers, family childcare, and community programs that have both educators and administrators adapting to the use of technology. Therefore, it has become critical to research and explore the best practices of technology integration and successful strategies to improve the use of technology in ECE. The Handbook of Research on Empowering Early Childhood Educators With Technology examines best practices that focus specifically on those that facilitate the development of competencies in teaching young children (birth to age 8) and technology integration. The chapters include information on the foundations of technology in early childhood education, content-specific technology applications, developmentally appropriate practices (DAP) for learners using technology, and how to meet diverse learner needs with technology. The target audience for this book is early childhood professionals, teacher educators, pre- and in-service teachers in early childhood settings, faculty and researchers in the field of education, instructional technologists, childcare and elementary school administrators, early education policy organizations, and advocacy groups that are interested in the best practices and successful strategies for implementing technology in ECE.

The Handbook of Research on the Education of Young Children is the essential reference on research on early childhood education throughout the world. This outstanding resource provides a comprehensive research overview of important contemporary issues as well as the information necessary to make knowledgeable judgments about these issues. Now in its fourth edition, this handbook features all new sections on social emotional learning, non-cognitive assessment, child development, early childhood education, content areas, teacher preparation, technology, multimedia, and English language learners. With thorough updates to chapters and references, this new edition remains the cutting-edge resource for making the field's extensive knowledge base readily available and accessible to researchers and educators. It is a valuable resource for all of those who work and study in the field of early childhood education including researchers, educators, policy makers, librarians, and school administrators. This volume addresses critical, up-to-date research on several disciplines such as child development, early childhood education, psychology, curriculum, teacher preparation, policy, evaluation strategies, technology, and multimedia exposure.

Encounters with Touch Technology