



Introduction

EDUCATION AND TECHNOLOGY: CHALLENGES AND POSSIBILITIES

Dear reader, the thematic issue “Education and Technology: challenges and possibilities”, which is now being presented, brings together studies of researchers from several Brazilian and foreign universities, and deals with a candent topic in studies and researches on current corporate organizations.

The studies that comprise this thematic issue seek to broaden the discussion about the incorporation of digital information and communication technologies (DICT) in current social practices, in particular those carried out in the field of education.

The set of texts reveals, in the multiple voices of the authors, reflections on the role of DICT in contemporary life, trying to uncover the limits and possibilities of these interfaces in the constitution of social subjects, refuting fetishistic positions that demonize or enthrone them as a panacea of the challenges to be faced.

The articles deal with researches that focus on a myriad of topics related to the integration of DICT in the formation of contemporary social subjects and are organized around four themes: a) digital information and communication technologies and basic education, b) digital information and communication technologies and teacher training, c) digital information and communication technologies and higher education, d) digital information and communication technologies and contemporary social practices in education.

In the four articles that comprise the first thematic group - digital information and communication technologies and basic education - Valdinei Cezar Cardoso, Leidiane de Mello Esprisigo and Lilian Akemi Kato sign the article entitled “Different semiotic representations produced by elementary school children from digital games”. The authors comment on a research that aimed to identify, through records obtained from activities mediated by digital games, possible mental representations made by children in the first grade of Elementary School.

The article “Youth and adults in the schooling process and the digital technologies”, written by Bianca Maria Santana de Brito, investigates the presence of DICT in Youth and Adult Education, from the way students claim to use the mentioned technologies and the possible relations of these uses with the educational process and the learning they experience.

In the article “Building virtual trees of possibilities: what can students learn by discussing combinatorial relations?”, Juliana Azevedo and Rute Elizabete de Souza Rosa Borba analyze the influence of building trees of possibilities in solving combinatorial problems with the use of an educational software.

Closing the first thematic group, in an article entitled “Children literacy using technological resources”, Valéria de Alvarenga Pimenta Vilas Boas and Celso Vallin report a case study, aiming to identify whether the use of computers, with activities developed for the initial teaching of reading and writing, specifically the correspondences between phonemes and graphemes, might help a specific group of students who had not yet reached the level of alphabetic writing.

Regarding the eight articles that comprise the second thematic group - digital information and communication technologies and teacher training - Rosa Maria Rigo and Maria Inês Corte Vitória, in the paper “Daily classroom: from presential to virtual, educational resources in constant review”, present the results of the records described in the reflective journals of public school teachers who participated of TelEduc.

Eduardo S. Junqueira, Adriana Paula Amorim and Carla Sousa Braga sign the article “Theoretical reflections and practices related to new literacies and digital technologies: a teacher training report”, which brings as *corpus* the training experience performed under the *Mais Educação* (More Education) Program from the Brazilian Ministry of Education. The discussion articulates three instances: the sociocultural perspective of cyberculture, the institutional dimension of the school and the professional and personal spheres of the teacher.

In the article “The role of teacher trainer in training action: an experience in constructionist approach”, Ádamo Duarte de Oliveira and Suely Scherer present part of a research that analyzed the role of the teacher trainer in an action of continuing education, experienced by a group of ten elementary school mathematics teachers (working from 6th to 9th grade), and organized to discuss the use of educational laptops that were distributed in schools covered by the project *Um Computador por Aluno/UCA* (One Computer per Student), in the city of Terenos, in the state of Mato Grosso do Sul.

Débora Cristina Massetto, Marcia Rozenfeld Gomes de Oliveira and Maria Iolanda Monteiro, in the paper “Online support processes in teacher training and their progress”, propose a



discussion on the support offered to teachers in its different forms: programs, courses and other resources that use online support in order to minimize the difficulties and different demands found in the profession.

Adriana Rocha Bruno and Luciano Nery Ferreira Filho, in the article "Appropriations of digital and network technologies by teachers: experiences in the public schools of Ceará, Brazil", state that, in a social setting mediated by digital culture, or cyberculture, which requires teachers to have new perspectives on their pedagogical practice and knowledge related to the use of digital and network resources, Brazil still has a significant number of professionals on the sidelines of this process.

In the paper "Multireferential practices of online education: expressions of a research", Rosemary dos Santos and Edméa Oliveira dos Santos, through the experiences in inter-institutional research "Cyberculture in the age of social networking and mobility: new possibilities for teacher training", developed in the Graduate Program in Education, State University of Rio de Janeiro, Brazil, discuss how the practices of online education improve the interconnection of knowledge, learning and narratives in these formative spaces.

Renata Portela Rinaldi and Aline Maria de Medeiros Rodrigues Reali, in the article "Online teacher education and teacher professional learning: reflections and notes" deal with the professional development of teacher educators (basic and higher education), through online education, situating this modality as a way to design new opportunities for professional development that considers the school as the center of learning processes.

Lucila Pesce closes the second thematic group with the article "The didactical fruitfulness of open educational resources for teaching nowadays", in which the researcher discusses the didactic fecundity of open educational resources for contemporary teachers, bringing a reflection from the political and cultural context, in line with the necessary critical reading of information and communication technologies.

The third thematic group - digital information and communication technologies and higher education - begins with the paper "Evaluation of learning in higher education: challenges and opportunities in distance learning", written by Betina Magalhães Bitencourt, Marília Bortoluzzi Severo and Shalimar Gallon. The article discusses the traditional forms of assessment, as well as current trends, through an analysis of its applicability in the contemporary reality of higher education. Such discussion is supported a scenario in which, with the spread of distance education, new forms of assessment are needed, so that the evaluation process would constitute a genuine educational tool.

Aristóteles da Silva Oliveira, Fernando Silvio Cavalcante Pimentel, Luís Paulo Leopoldo Mercado and Tatiane Campos present, in the paper "Virtual worlds and education: challenges and possibilities", an analysis of virtual worlds, focusing on the study of new methodologies for higher education, based on a webgraphic and analytical approach.

Débora Santos de Andrade Dutra and Marger da Conceição Ventura Viana show, in the article "Problem solving in virtual learning environments: possibilities in distance education", a study on the use of Problem Solving methodology in virtual learning environments, in order to investigate what contributions it might bring to the undergraduate students of Mathematics from the Federal University of Ouro Preto.

In "Potential of open educational resources for technology integration and convergence between the modalities at UFSM", Elena Maria Mallmann, Juliana Sales Jacques, Anna Helena Silveira Sonego, Tatiana Gloor Teixeira, Iris Cristina Datsch Toebe and Fabiane da Rosa Domingues focus on the implementation and promoting of school practices, to enhance the integration of technology and the convergence between the modalities at the Federal University of Santa Maria through Open Educational Resources.

Closing the third thematic group, Juliane dos Santos Medeiros and Mercedes Carvalho present the paper "Pedagogy in distance education: analysis of proposed activities in mathematics classes". The authors report an investigation about the teaching of mathematics in a distance Pedagogy course in the state of Alagoas, with the aim of analyzing the activities proposed for the discipline "Knowledge and Methodologies for Teaching Mathematics", available in a virtual learning environment.

The fourth thematic group - digital information and communication technologies and contemporary social practices in education - introduces three articles. Antonio Ramón Bartolomé Pina, Francislê Neri de Souza and Marcelo Carneiro Leão sign the article "Educational research from Internet latent data". The authors analyze the use of latent information from Internet about the fields of Social Sciences and Education. They discuss the consultation of research articles done from this latent *corpus*, focusing on four questions: what can be investigated, in which context this data was found, how to select samples, what ethics aspects should be considered?

Maria Niedja Pereira Martins, Carlos Eduardo Ferreira Monteiro and Tamires Nogueira Queiroz are the authors of the paper "Understandings about sampling from manipulation of data in



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TinkerPlots software: a case of a polyvalent teacher". They analyze the results of a case study that investigated a versatile teacher's understanding of sampling when using TinkerPlots software, in order to identify the ways the teacher understood three basic aspects of the concept of sampling: size, type and representativeness .

The fourth thematic group is closed by the article "Distance education as a teaching method in federal prisons", by Rafael Pitwak Machado Silva, Suemy Yukizaki and Benjamin Carvalho Teixeira Pinto. It points out that distance education allows the democratization of access to education, in locations that are distant from large urban centers. Therefore, the authors emphasize that one can extend this strategy to maximum security prisons, promoting educational assistance to people that are deprived of liberty, as stated by the law.

This edition also features three experience reports. Raquel Rosan Christino Gitahy and Jaqueline de Souza José sign the text "The use of information and communication technologies in teaching practice" in which they investigate the understanding that public school teachers have of the use of information and communication technology in teaching practice. Marta Ofélia Chaile and Verónica Mercedes Javi, in the text "In-service teacher training: recurring to multimedia material for renewable energy teaching", reported a research conducted by professionals of Physics - Renewable Energy (RE) and Pedagogy, with the objective of disseminating and teaching concepts related to the field of renewable energy. The last report, "Videos and mathematics in *Coletivo (RE)Ação*: an experience that is becoming history", written by Douglas Carvalho de Menezes, Mário Lucio Alexandre and Arlindo José de Souza Junior, presents the history of a subproject of *Coletivo (RE)Ação*: a group that aims to contribute to the formation process of young inhabitants of the east side of Uberlândia, Minas Gerais, Brazil, in partnership with the NGO *Ação Moradia*, Research Group on Education and Popular Culture (GPECPOP), and the Center for Research on Education and Media (NUPEME)

Given the effervescence of social practices mediated by digital technologies of information and communication, this issue of the journal stands in the midst of a multitude of research objects and theoretical and methodological approaches. It is amid this multiplicity that we invite the reader to deepen his views on this exciting topic in the current historical moment

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(English version by Maria Claudia Bontempi Pizzi)