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CONFERENCE PROCEEDINGS

**SEVILLE (SPAIN)
11-13 NOVEMBER 2019**



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CONFERENCE SESSIONS

ORAL SESSIONS, 11th November 2019

Interactive Learning Environments
Flipped Learning
Game-based Learning and Gamification (1)
University-Industry Cooperation (1)
21st Century Skills
Student Support and Motivation (1)
Special Education (1)
3D Design Learning
Problem Based Learning (1)
An International View on the Transformative Value of Prison Based Educational Programs

Robots for Learning
Flipped Learning in STEM
Game-based Learning and Gamification (2)
Blended Learning (1)
Technology Enhanced Learning
Teacher Training in STEM
Inclusive Education Challenges (1)
Architecture Educational Experiences
Problem Based Learning (2)
Primary and Secondary Education

Virtual and Augmented Reality (1)
Critical Thinking
Teacher is Present! – Guidance and Feedback in Online Language Learning
Problem and Challenge Based Learning
Assessment of Student Learning
Professional Development of Teachers (1)
Inclusive Education Challenges (2)
Engineering Education
ICT for Language Learning
Early and Primary Education

Virtual and Augmented Reality (2)
Pedagogical Innovations
Game-based Learning and Gamification (3)
Active Learning Experiences
Peer Assessment Experiences
Professional Development of Teachers (2)
Universal Design for Learning
Teaching Programming and Coding Skills
Foreign Language Learning (1)
Student Support and Motivation (2)

POSTER SESSIONS, 11th November 2019

New Trends and Experiences in Education

Technology in Education and Research

ORAL SESSIONS, 12th November 2019

Design Thinking and Creativity
Links between Education and Research
Education for Sustainability
Accreditation and Quality in Education
e-Learning Experiences (1)
Digital Literacy and ICT Skills (1)
ICT Skills among Teachers (1)
Game-based Learning in Primary and Secondary
Foreign Language Learning (2)
Health Sciences Education (1)

Learning Analytics
Internships and Workplace Learning
Service Learning
New Challenges for the Higher Education Area
Online Assessment
Challenges of Digitalization in Education
ICT Skills among Teachers (2)
Cultural Literacy and Intercultural Understanding
Foreign Languages for Special Purposes
Health Sciences Education (2)

Learning Management Systems
Bridges between Education and Employment
Tutoring and Mentoring
University-Industry Cooperation (2)
Digital Literacy and ICT Skills (2)
Adult Education
ICT Skills among Teachers (3)
Multicultural Education Challenges
Pre-service Teacher Experiences
Computer Science Education

Videos for Learning
Business Education
Student Support and Wellbeing (1)
Language Learning Challenges and Innovations (1)
Students and Teaching Staff Exchange Programmes
Lifelong Learning and Continuing Education
Teacher Training Experiences
Special Education (2)
Professional Development of Language Teachers
STEM Education (1)

m-Learning: Mobile Applications and Technologies
Blended Learning (2)
Student Support and Wellbeing (2)
Leadership and Educational Management
e-Learning Experiences (2)
Distance Education
Gender and Equality in Education
Educating At-Risk Students
Language Learning Challenges and Innovations (2)
STEM Education (2)

POSTER SESSIONS, 12th November 2019

Pedagogical Innovations

Challenges in Education

VIRTUAL SESSIONS

21st Century Skills
Academic Research Projects
Accreditation and Quality in Education
Active and Experiential Learning
Adult Education
Advanced Classroom Applications and Technologies
Assessment of Student Learning
Barriers to Learning
Blended Learning and Flipped Classroom
Collaborative and Problem-based Learning
Community Engagement and Youth participation
Creativity and Design Thinking
Critical Thinking and Problem Solving
Curriculum Design
E-content Management and Development
e-Learning Experiences
Early Childhood Education
Educating Individuals with Intellectual Disabilities
Educating Individuals with Sensory and Motor Disabilities
Educating the Educators
Education for Sustainability
Education Practice Trends and Issues
Education, Research and Globalization
Educational/Serious Games and Software
Employability Issues and Trends
Erasmus+ Programme Experiences
Flipped Learning
Game-based Learning and Gamification
Gender and Equality in Education
ICT and Digital Skills
ICT Skills Development
In-service Teacher Training
Inclusive Learning, Cultural Diversity and Special Education
Informal Learning
International Projects
Language Learning Innovations
Leadership and Educational Management
Learning and Teaching Innovations
Learning Management Systems (LMS)
Life-long learning
Links between Education and Research
m-Learning: Mobile Applications and Technologies
Massive Open Online Courses (MOOC)
Multicultural Inclusion and Indigenous Perspectives
New challenges for the Higher Education Area
Open Universities and Distance Education
Pedagogical Innovations
Post-graduate Education
Pre-service Teacher Experiences
Primary and Secondary Education
Professional Development of Teachers
Refugees, Migrants and Minorities Inclusion
Research Methodologies
Research on Technology in Education
STEM Education Experiences
Student Support and Motivation
Students and Teaching Staff Exchange Programmes
Technology in Teaching and Learning
Tutoring and Mentoring
Undergraduate Education
Universal Design for Learning
University-Industry Cooperation
Videos for Learning and Educational Multimedia
Virtual and Augmented Reality
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THE DIGITAL CHILD BETWEEN DISNEYIZATION, TECHNOLOGY AND THE QUEST FOR A CRITICAL PEDAGOGY OF CHILDHOOD

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Abstract

Sociologists and educationists have used the term Disneyization to describe a society in which the individual's life is massively influenced by mass media, digital visual technologies, merchandising, and entertainment culture. In 1977, Italian psychologist Ezio Ponzo wrote a book entitled "The simplified or non-existent child" in which he stressed how adults tend to understand and interpret the child by using simplified schemes based on stereotypes and prejudices coming from mass media culture. Also, he demonstrated through ethnographic research how, in perceiving the body shape of their children, mothers were prejudiced by a certain idea of infancy influenced by Walt Disney's characters and movies. There is no doubt that, actually, advertising culture and digital visual technologies influence the perception of infancy and the child in contemporary society. Contemporary children and early children use to spend much of their daily time immersed in a digital world, in which advertising aimed to hybrid consumption is mixed with the use of new digital and visual technologies. By using a neutral approach and interpretation about the current influence of the digital visual technologies and consumption culture on the individual, our paper aims to reflect upon positive and negative characteristics of the world contemporary early children are immersed in. In so doing, we will use some data from two questionnaires administered to a group of mothers and young students aimed to detect their opinion about the influence of digital visual technologies and consumption culture on their children (in the case of the first sample), and on the positive or negative effect about the use of these technologies when they were children (in the case of young students). In conclusion, we are going to sketch the principles of a critical pedagogy aimed to analyze and find a balance between both positive and negative effects of digital visual technologies and consumption culture on early childhood education by using its benefits for a better and neither stereotyped nor prejudiced perception of infancy in contemporary society.

Keywords: Critical Pedagogy, Early Childhood, Technology, Learning, Education.

1 INTRODUCTION

By term "Disneyization", contemporary sociologists have described a society in which people's lives are influenced by mass media, technologies, merchandising, and entertainment culture. The term was made popular by British sociologist Alan Bryman, and it is meant to parallel American sociologist George Ritzer's notion of McDonaldization [1]. Ritzer has taken from McDonald's restaurant management model based on control, efficiency, calculability, and predictability a metaphor to understand and interpret contemporary capitalistic society. Those who have made popular Disneyization have found in Disney theme parks and business and human resources philosophy of American entrepreneur Walt Disney (1901-1966) the same concepts. Disneyization is a metaphor and complementary notion to McDonaldization, and it is used by contemporary sociologists, philosophers, and educationists to identify extensive changes discernible in a capitalistic economy. Disneyization is a process which can be found in some trends of the capitalistic society. These main trends are as follows. *Theming*, to make the customer feel comfortable with environments and services and secure their loyalty after homogenizing people's consumption on a large and globalized scale. *Dedifferentiation* of consumption, that is to say, the impossibility to make a clear distinction between forms of consumption and different institutional spheres because both become interlocked with each other and hard to distinguish. *Merchandising*: this concept refers to making a profit from the promotion of goods and products under license, copyright logos, and images. *Emotional labor*: that is to say, the control exercised by Disney Company over their employees' behavior by scripted interactions and encouraging emotional labor. This labor should convey the impression that Disney employees are always having fun, are happy, and therefore they are not engaging in real work.

2 THE CONTEMPORARY CHILD BETWEEN DISNEYIZATION AND TECHNOLOGY

Actually, the ever-smiling Disney theme parks depict and have become the stereotype of contemporary culture and society obsessed with profit, consumption, superficiality, and hedonism at all costs. Disney theme park's model is influencing the shape and content of everyday life in capitalistic societies. All Disney's world and characters are made for the purpose of sales and manufacturing. As it happens in television shows, children are seen as the main customers of this market. All this is designed to secure children's loyalty as consumers and increase their market demand. Happiness, light-heartedness, cheerful friendliness, colors, the cuteness of Disney's characters help distract children as costumers from realizing that they are being captivated in a very artificial world whose main aim is to sell them goods and products homogenization.

Therefore, it is no coincidence that Henry Giroux, pedagogue and a founder of contemporary critical pedagogy, has analysed the trends concerning disneyization and explored the diverse ways today's children and their parents are influenced by Disney corporation, which behind a mix of entertainment and innocence is hiding the intent to dominate global media through digital technologies and shape the needs and desires of contemporary children by making them addicted to its products, goods, and services [2]. By his social critique, Henry Giroux shows the ways corporation culture is invading and affecting children's minds and behavior.

By new communication and digital technologies, corporations like Disney act as influence agencies capable of operating a subtle form of brainwashing on children. From Giroux interpretation of contemporary society, it emerges the image of a disneyified and simplified child living in a world in which democracy is being replaced with the triumph of the market and consumptions. Children's desires are shaped by corporation and are based on possession of goods, consumption of products, and use of services from which corporations can generate and make profit [3]. Actually, children seem to be unaffected and uncontrolled by politics and power. However, their minds and behavior are controlled by a more subtle and affecting power: that of new media and communication and information technologies used by corporations to make children permanent customers of their product through advertising.

What it emerges from this scenario is a nihilistic child provided with no power and voice, totally controlled by media and corporations, slave of adults and new technologies, as well as incapable of living and enjoying a realistic and real childhood [4]. In this scenario, the child does not exist, or better, they do exist only in relation to the market and as consumers (through their parents).

Italian psychologist Ezio Ponzo has expressed the same concept in a book published in 1976 [5]. Ponzo argued that the adult tends always to understand and interpret the child from an excessively simplified reference pattern based on simplified schemes grounded on stereotypes and prejudices coming from mass media culture. Also, to demonstrate the impact of media, Ponzo has shown how even in perceiving the body shape of their children, mothers of the seventies were prejudiced by an idea of infancy massively influenced by Disney's characters and movies.

3 THE QUEST FOR QUALITY CHILDHOOD EDUCATION IN A DIGITAL SOCIETY

Actually, advertising culture and digital visual technologies are influencing the perception of childhood in contemporary society. Contemporary children use to spend much of their daily time immersed in a digital world, in which advertising aimed at hybrid consumption is mixed with the use of new digital and visual technologies [6]. The extensive and worldwide distribution of smartphones in developed and developing countries has given children the opportunity and ability to communicate and socialize through virtual relations, to play and learn via different digital media and tools. At the same time, this total immersion of children in an era of quickly changing technologies raises ethical and pedagogical questions concerning the debate on the protection of children's rights, their prevention from addictions to digital technologies, the real effects of the latter ones on their minds and behaviour [6].

Digital media and new information and communication technologies Web-based are complex, and their benefits and consequences on children lives are not fully known and need for being explored better and grasped. Digital exposure for most of the children is inevitable [7]. Their interactions with digital technologies are multilateral, are permanent, and may have life-long consequences. Some

consequences are positive, but others can be life-altering or even life-ending (as in the case of cyber-bullying or child pornography).

There is no doubt that, nowadays, children experience a "digitalized childhood." However, in the case of young boys, young girls, and babies, it arises the question of whether this immersion is appropriate or not. For sure, the involvement in a digitalized world in which interactions and socialization are more and more digital and virtual ends up affecting their brain, minds, and social behaviours [8] [9].

Technology is becoming increasingly deeply pervasive for children. As evidence of this statement, the several digital toys, and apps designed and marketed towards children one can find in stores and download from virtual stores. The baby techno-toy market is increasingly developing. This arises the question whether babies need techno-toys albeit as tools to exercise and develop their abilities for future use when adults; whether they learn from them or it would be better for them not to spend time using or being helped by parents use these devices but in other ways [10]. These other ways could be to explore their bodies, move and play with real objects or others, hear human voices and other languages, interact with real human beings in flesh and blood, be attached to a caregiver. Probably, there is no app or device capable of replacing these highly stimulating human interactions, especially in the early days of the kid's life. Frequent use of digital devices and apps could have harmful effects and cause Attention deficit hyperactivity disorder (ADHD) in children.

If and how young children learn with digital technologies and devices and from screen-based media, it is not sufficiently clear or demonstrated through scientific evidence. The research on children's toys shows that that the more technologically sophisticated a toy is, the less is capable of stimulating the child's brain.

When they are used wisely, technologies and media can support the development of learning and relationships. There is no doubt that an enjoyable and engaging environment rich in shared experiences capable of optimizing the potential for children's development and learning always supports children's relationships with adults and peers.

4 THE POTENTIAL OF TECHNOLOGY AND DIGITAL MEDIA TO ENHANCE CHILDHOOD LEARNING AND EDUCATION

However, it is not correct to assume and think that the use of digital devices and technologies is harmful in itself because it is allowing the child to experience a different childhood. Parents, teachers, and educators should not fear and ban digital technologies or techno-toys from the educational environment of children. Instead, they should commit themselves to build technology safe environments and help children create healthy digital habits for future healthy lifestyles [11]. Technology is always neutral: it can be good or bad. It depends upon the way it is utilized, the environment and the educational aims one wants to achieve by it. Parents, teachers, and educators need to find what digital practices are more effective and helpful to children's development and learning. The definition of technology tools encompasses a broad range of digital devices such as computers, tablets, multitouch screens, mobile devices, interactive whiteboards, cameras, DVD and music players, audio recorders, techno-toys, games, e-book readers, and older analogic devices, and so forth [12].

We can affirm that when technology and interactive media are integrated into childhood educational programs built upon solid educational critical foundations, and teachers and educators are aware of opportunities and challenges implied in digital practices, digital technologies and media have more chances to bring benefits to the development and learning of the child. The main aim of teachers and educators in the ever-changing digital age should be to provide children with a guide about the use of digital interactive technology and optimize their potential as a means to develop cognitive, social, emotional, physical, and linguistic dimensions of children.

Digital technology tools for communication, social networking, collaboration, and user-generated content have transformed how parents and families manage the education of their sons and daughters, they seek out entertainment, how educators and teachers use materials in the classroom with children and communicate with parents and families, and how teachers' education and professional development are delivered [13].

Childhood educators need to take awareness of all these concerns and understand the critical role they play as educators mediating technology and media. The challenge for childhood teachers and educators is to make informed choices capable of maximizing learning opportunities for their pupils

while managing screen time and mediating the potential for misuse and overuse of digital media. As we have said above, there exists conflicting evidence on the value and impact of digital technology on children's development and active socialization.

Passive use of digital media can cause child obesity. What is more, this use could cause unbalanced sleep patterns, behavioural issues, problems concerning focus and attention, decreased academic performance. Moreover, it could affect socialization and language development, and the increase in the number of time children tend to spend in using digital devices in front of the screen.

In the child, the use of technology or any digital media should not replace active play with other children and daily interactions with adults. Interactive media and digital technology must be integrated into educational programs in which the aims of a holistic education are achieved together with an active lifestyle and socialization activities [14].

The potential of digital technology and interactive media to positively influence healthy growth and development of children makes it relevant for educators, teachers and parents, who must carefully consider issues concerning selection, use, equity in the access, integration, and evaluation of technologies digital and media.

5 A CASE STUDY

Taking awareness of the potential of these technologies, we have developed, starting from a qualitative-quantitative methodological approach, a research based on interviews and questionnaires conducted on a sample of 35 mothers of young children from central Italy. Interesting results have emerged from the research. The research was aimed to collect data to detect mothers' opinion about the influence of digital visual technologies and consumption of culture on their children.

From the questionnaire, it has emerged that 87,6% of mothers interviewed, who were also administered the questionnaire, have expressed a positive opinion about the use of digital devices by their children. What is more, 95,2% of them let their daughters and sons use digital media for at least 45 minutes per day. The reasons given to allow their children to use digital devices are mainly two. Firstly, these devices are perceived of as entertainment tools (73% of mothers); secondly, they help their children develop digital competencies useful for their future life as learners and workers in a digital society, which mandatorily requires these competencies (65.7% of mothers). Also, most of the young mothers interviewed did not show any fear about the risk of an over-use of digital devices by their children (68.4%) if this use is supervised and controlled by adults, there is no risk for children.

In another study aimed to detect the opinion of a sample of university students aged 19 to 20 belonging to the very first generation of so-called "digital natives" on the positive or negative effect about the use of digital devices and techno-toys when they were children, the results have shown that for most of them their experience was positive. In fact, on a percentage 76.6 % of them who had stated they used to playing and learning through digital devices and techno-toys when they were children, 93.8% have shown a positive opinion about the experience concerning the use of these devices. Also, 83.1% of them has affirmed that the fact of being accustomed to using these devices from their early childhood has been beneficial for their learning and development of competencies.

The results from the two cases examined demonstrate that mothers accept children's experiences with technology and interactive media because those are increasingly part of the context of digital culture and society. However, to make informed decisions regarding the intentional use of technology and digital media in ways that support children's learning and development, teachers, parents, and educators need information, resources, and specific training about the nature of these tools and the implications of their use with children.

The healthy cognitive, emotional, social, physical, and linguistic development of the whole child is fundamental in the digital age. Access to technology and interactive media should not exclude, diminish, or interfere with the child's healthy communication, social interactions, play, and learning.

Teachers and parents should evaluate and select technology and digital media for the classroom, and carefully observe children's use of the devices to identify opportunities and problems and, after that, make the most appropriate adaptations. Actually, the appropriate use of technologies and digital media depends on the age, development level, interests, needs, linguistic background, and abilities of each child.

6 PRINCIPLES FOR A CRITICAL CHILDHOOD PEDAGOGY WITHIN DIGITAL MEDIA

The disneyization and commodification of values in contemporary society, the increasing impact of digital technologies on children's lives, the new ways of teaching and learning and educating in a world dominated by the Internet and technology, all this should provide fertile ground for sketching a critical pedagogy of childhood within the context of digital education. This pedagogy should be based on specific principles, mainly:

- 1 Technology and digital media must be selected, used and integrated to achieve the main aims of childhood education, in which the care for the child is the starting point for the development of their engagement in the world as human beings who are learning to develop.
- 2 Technology and digital media are valuable learning tools only when aim intentionally to the enhancement of children learning competencies and human values.
- 3 The use of interactive digital technologies by the child must always be coupled with interactions with adults and peers and integrated within the framework of non-passive but active lifestyles.
- 4 Parents, teachers, and educators must put a limit to the use by children of digital technologies and virtual socialization through them, and replace the virtual socialization, from time to time, with responsive interactions that strengthen the relationships between the adult and the child.
- 5 Teachers, parents, and educators must create a comfortable learning environment and cooperate to guide and enrich with social and educational values children experiences when they access to digital technologies and media.
- 6 When teachers, parents, and educators want to prevent children from doing something inappropriate when using digital media and devices, they should always specifically explain to them why.
- 7 It is necessary to explain to children that, in surfing on the Internet, there could be some risk and it is fundamental to abide by principles provided by their teachers or parents.
- 8 Children must understand that the Internet should not dictate their self-worth. No doubt that too much exposure to social media can create conventional standards of beauty and success and make children insecure. Children should understand that they should not base their standards of beauty and success on them.
- 9 One should explain to children that they should not believe everything they see on the Internet.
- 10 It is necessary to teach children that technology should solve problems and not create them.

7 CONCLUSIONS

Teachers, parents, and educators should help children understand that technology and digital media are just tools aimed to achieve multiple objectives (entertainment, learning, communication, and so on). These tools make sense only when they are capable of activating engagement rather than passive use. To enhance the use of technology and digital media in childhood education, educators should need positive examples of selection, use, integration, and evaluation of digital technology into classrooms and programs. No doubt that it is needed further research to understand better how children can use and learn with technology and digital media, and also, to better grasp their effects.

In Children, interactions with technology and digital media should be always playful and support creativity, exploration, active play, and outdoor activities. Play and game, with its rules and codes, are fundamental to the child's development and learning. For this reason, children always need opportunities to explore the technology and digital media in playful and creative ways that help them reuse all in real life. Also, digital technology can help teachers and educators to better communicating with families of their young pupils, sharing information, and building stronger relationships with parents by enhancing their engagement [15].

In conclusion a childhood Pedagogy of digital media can be developed only when teachers, parents, and educators, after taking awareness of their responsibility and role in our society as agencies for promoting digital education, cooperate and are committed to enhance the development and learning of the child seen as a human being for whom technology is just a means for a better life and a peaceful and prosperous future.

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REFERENCES

- [1] A.E. Bryman, *The Disneyization of Society*. London: Sage Publications, 2004.
- [2] G.S. Cannella, R. Viruru, *Childhood and postcolonization power, education, and contemporary practice*. New York and London: Routledge-Falmer, 2004.
- [3] H.A. Giroux, *Stealing innocence. Corporate culture's war on children*. London: Palgrave Macmillan, 2000.
- [4] I. Palaiologou, "Children under Five and Digital Technologies: Implications for Early Years Pedagogy," *European Early Childhood Education Research Journal*, vol. 24, no. 1, pp. 5–24, 2016.
- [5] E. Ponzio, *Il bambino semplificato o inesistente/The simplified or non-existent child*. Roma: Bulzoni, 1977.
- [6] M.M. Clark, S. Tucker, *Early Childhoods in a Changing World*. New York, NY: Trentham Books, 2010.
- [7] S. Wolfe, R. Flewitt, "New technologies, new multimodal literacy practices and young children's metacognitive development," *Cambridge Journal of Education*, vol. 40, no. 4, pp. 387–399, 2010.
- [8] C.M. Dooley, "The Digital Frontier in Early Childhood Education," *Language Arts*, vol. 89, no. 2, pp. 83–85, 2011.
- [9] I.R. Berson, M.J. Berson, *High-Tech Tots: Childhood in a Digital World*. Charlotte, NC: Information Age Publishing, 2010.
- [10] M. Önder, "Contribution of Plays and Toys to Children's Value Education," *Asian Journal of Education and Training*, vol. 4, no. 2, pp. 146–149, 2018.
- [11] M. Alper, "Developmentally Appropriate New Media Literacies: Supporting Cultural Competencies and Social Skills in Early Childhood Education," *Journal of Early Childhood Literacy*, vol. 13, no. 2, pp. 175–196, 2013.
- [12] H. Knauf, "Interlaced Social Worlds: Exploring the Use of Social Media in the Kindergarten," *Early Years: An International Journal of Research and Development*, vol. 36, no. 3, pp. 254–270, 2016.
- [13] R. Ralph, "Media and Technology in Preschool Classrooms: Manifesting Prosocial Sharing Behaviours When Using iPads," *Technology, Knowledge and Learning*, vol. 23, no. 2, pp. 199–221, 2018.
- [14] B. Puerling, *Teaching in the Digital Age for Preschool and Kindergarten: Enhancing Curriculum with Technology*. St Paul, MN: Redleaf Press, 2018.
- [15] H.L. Kirkorian, "When and How Do Interactive Digital Media Help Children Connect What They See On and Off the Screen?" *Child Development Perspectives*, vol. 12, no. 3, pp. 210–214, 2018.