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# Crossing Steam and Media Literacy at Preschool and Primary School Levels: Teacher Training, Workshop Planning, its Implementation, Monitoring and Assessment

## **ABSTRACT**

Seventeen workshops on STEAM and Media Literacy, involving 500 children aged 3-10, their families and other community members, in a pandemic context, was the end result of the third phase of the 'Digital Citizenship Academy'. This community-based action research project began in early 2015, in a Lisbon neighbourhood of Portugal. The workshops were planned, implemented, monitored and assessed by 29 teachers during an online training initially planned to be developed on site. Despite the Covid-19 outbreak, teachers implemented strategies to overcome the lack of resources and autonomy of many students, especially younger ones, and the training focus remained on the production of scientific, artistic, technological, but also media content. The workshops allowed the creation of media and STEAM products primarily focused on the arts, but in which science, technology, engineering and mathematics were present. Results point to the fact that STEAM projects gain in relevance when associated with Media Literacy activities, and vice versa. Although there is a general feeling that the situation resulting from the pandemic prevented the achievement of more significant results, the training course was suitable to pedagogical practices, provided an opportunity for sharing of experiences, practices and ideas, fostered cooperation and interdisciplinary, and resulted in useful resources.

## **KEY WORDS**

Education. Media Literacy. In-Service Teacher Training. Pre-School Children. Primary School Children. STEAM.

# 1 Introduction

In recent years, Media Literacy has been mostly envisioned as a solution against disinformation<sup>1</sup>, the “infodemic”<sup>2</sup>, or the “disinfodemic”<sup>3</sup>. This dialogue raised two problems that needed clarification. First, Media literacy is not the answer to disinformation, but is only one dimension of a needed global response, with new laws and policies created to respond to emerging challenges, with a focus on communication of science to the general public, better mechanisms to detect false information and other strategies to protect the public.<sup>4</sup> Second, pointing Media Literacy mainly as a strategy to combat disinformation is narrowing its scope and disregarding a crucial area that informed, active and responsible digital citizens from cradle to lifelong learning.

Media Literacy consists of a set of knowledge, skills and abilities needed to participate in contemporary society, through access, analysis, critical evaluation and reflective and creative production of media messages in a wide variety of formats and languages.<sup>5</sup> This production is valid only when associated with a structured dissemination, through multiple channels, enhanced participation, social intervention, and social reflection. Media Literacy is a key competence that contributes to access to information, freedom of expression, digital security and privacy protection, as well as to the prevention of extremism and combating hate speech and inequalities.<sup>6</sup>

Although its importance was recognized, the truth is that a decade ago several challenges were identified in relation with Media Literacy development path. Those challenges: specifically the traditional school resistance to change, the integration of formal, non-formal and informal learning contexts, the implementation of a media education activities with a critical and cultural logic and focused only on the practical and technical use of media, apart from bridging several digital divides and the need of strengthening the initial and continuing teacher training in the field.<sup>7</sup> Apart from the lack of teacher training, there was a lack of research in school contexts involving collaboration among researchers, teachers, media representatives and political decision-makers,<sup>8</sup> the lack of educational resources validated by specialists, teachers and students,<sup>9</sup> and an insufficient curricular development as well.<sup>10</sup> These challenges were transversal

<sup>1</sup> WARDLE, C., DERAKHSHAN, H.: *Information Disorder: Toward an Interdisciplinary Framework for Research and Policy Making*. Strasbourg : Council of Europe, 2017. [online]. [2022-04-07]. Available at: <<https://rm.coe.int/information-disorder-report-november-2017/1680764666>>.

<sup>2</sup> NIELSEN, R. K. et al.: *Navigating the 'Infodemic': How People in Six Countries Access and Rate News and Information about Coronavirus*. Oxford : Reuters Institute for the Study of Journalism & University of Oxford, 2020. [online]. [2022-04-07]. Available at: <<https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-04/Navigating%20the%20Coronavirus%20Infodemic%20FINAL.pdf>>.

<sup>3</sup> UNESCO: *Seoul Declaration on Media and Information Literacy for Everyone and by Everyone: A Defence against Disinfodemics*. [online]. [2022-04-07]. Available at: <[https://en.unesco.org/sites/default/files/seoul\\_declaration\\_mil\\_disinfodemic\\_en.pdf](https://en.unesco.org/sites/default/files/seoul_declaration_mil_disinfodemic_en.pdf)>.

<sup>4</sup> HEATH, C.: *Annotated Bibliography for Online Misinformation. Evidence for Democracy*. 2021. [online]. [2022-04-07]. Available at: <<https://evidencefordemocracy.ca/en/research/reports/annotated-bibliography-online-misinformation?fbclid=IwAR00hkSOe3lTtcg1n6eCdHlj6f1G2z2MbS8PsqkoOzWEHWkmqVybgvKEYkc>>.

<sup>5</sup> See: HOBBS, R.: Media Literacy. In MASTRO, D., NUSSBAUM, J. (eds.): *Oxford Research Encyclopedia of Communication*. London : Oxford University Press, 2016.

<sup>6</sup> UNESCO: *Seoul Declaration on Media and Information Literacy for Everyone and by Everyone: A Defence against Disinfodemics*. [online]. [2022-04-07]. Available at: <[https://en.unesco.org/sites/default/files/seoul\\_declaration\\_mil\\_disinfodemic\\_en.pdf](https://en.unesco.org/sites/default/files/seoul_declaration_mil_disinfodemic_en.pdf)>.

<sup>7</sup> See: TOMÉ, V.: Redes sociais online: práticas e percepções de jovens (9-16), seus professores e encarregados de educação. In TOMÉ, V., BÉVORT, E., REIA-BAPTISTA, V. (eds.): *Research on Social Media: A Global View*. Lisbon : RVJ-Editores, 2015, p. 127-335.

<sup>8</sup> See: RIVOLTELLA, P.: Realidad y Desafíos de la Educación en Medios en Italia. In *Comunicar*, 2007, Vol. 15, No. 28, p. 17-24.

<sup>9</sup> See: TOMÉ, V.: CD-Rom “Vamos Fazer Jornais Escolares”: *Um Contributo para o Desenvolvimento da Educação para os Média em Portugal*. Unpublished PhD Thesis, Faculdade de Psicologia e de Ciências da Educação da Universidade de Lisboa, Portugal, 2008.

<sup>10</sup> See: FRAU-MEIGS, D., TORRENT, J.: *Mapping Media Education Policies Worldwide: Visions, Programmes and Challenges*. New York : UN Aoc, 2009.

to the educational systems, but more obvious regarding very young children, since their online practices had been largely ignored by policymakers in many countries.<sup>11</sup>

Aiming to answer these challenges at the micro-level, in 2015 we planned a project focused on the Preschool and Primary school levels, in Caneças, north of Lisbon, Portugal. A community-based action-research project seemed to be the best option since education is a mental and sociocultural phenomenon,<sup>12</sup> and learning processes are not internalized individually. Instead, they are socially distributed, with implications for pedagogy and instruction.<sup>13</sup> Being literate as a citizen is not a state that is attained, but is an ongoing, lifelong process. Children learn by watching others, and then mimicking first their parents and siblings, and then extending observation to grandparents, cousins, uncles, and neighbours.<sup>14</sup> Later, they watch and mimic those at school, within the local community, and then within a progressively larger world. Therefore, the preparation of children should follow “a planned, systematic approach to issues relevant to the community of interest, [which] requires community involvement, has a problem-solving focus, is directed at societal change, and makes a lasting contribution to the community”.<sup>15</sup>

The project named ‘Digital Citizenship Education for democratic participation’ aimed to contribute to identify best practices in formal, non-formal and informal learning contexts, to influence public policies, to integrate digital citizenship education in the school curricula, and to be replicable elsewhere in Portugal and abroad. The starting query was: “To what extent can a local and replicable project, with teachers and out-of-school contacts, including families, empower preschool and primary school age children to become active and effective citizens in the digital era?”. Following a mixed-method approach,<sup>16</sup> the study has undergone frequent improvements as the authors followed a research model,<sup>17</sup> according to which there are three interrelated areas that form the basis of how the individual produces and receives media messages, whether in formal settings or in an informal context:

1. Operational – capacities and skills needed to read, write, and interpret messages from different media and its various platforms;
2. Critical – interaction with texts and digital products, seeking to answer questions related to power and agency, representation and voice, authenticity and veracity;
3. Cultural – concerns interpretations and actions that develop according to its involvement in digital literacy practices in specific social and cultural contexts.

<sup>11</sup> See: HOLLOWAY, D. et al.: *Zero to Eight: Young Children and their Internet Use*. LSE, London : EU Kids Online, 2013. [online]. [2022-04-07]. Available at: <<http://eprints.lse.ac.uk/52630/>>.

<sup>12</sup> See: GEE, J. P.: *New Digital Media and Learning as an Emerging Area and “Worked Examples” as One Way Forward*. New York : MIT Press, 2009.; See also: JENKINS, H.: *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. New York : MIT Press, 2009.

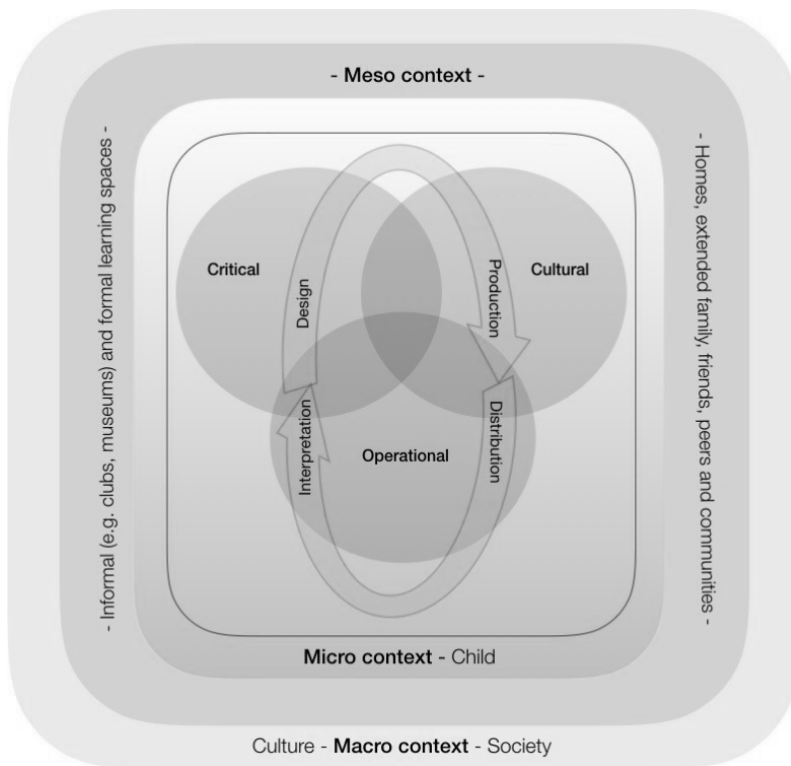
<sup>13</sup> See: UNDERWOOD, C. et al.: Getting it Together: Relational Habitus in the Emergence of Digital Literacies. In *Learning, Media and Technology*, 2013, Vol. 38, No. 4, p. 478-494.

<sup>14</sup> See: CHAUDRON, S.: *Young Children & Digital Technology: A Qualitative Exploratory Study across Seven Countries*. Luxembourg : Publications Office of the European Union, 2015.

<sup>15</sup> HILLS, M. et al.: Community-based Participatory Action Research: Transforming Multidisciplinary Practice in Primary Health Care. In *Rev Panam Salud Publica*, 2007, Vol. 21, No. 2-3, p. 127. [online]. [2022-04-07]. Available at: <[https://www.researchgate.net/publication/6270848\\_Community-based\\_participatory\\_action\\_research\\_transforming\\_multidisciplinary\\_practice\\_in\\_primary\\_health\\_care](https://www.researchgate.net/publication/6270848_Community-based_participatory_action_research_transforming_multidisciplinary_practice_in_primary_health_care)>.

<sup>16</sup> See: CRESWELL, J., CLARK, V.: *Designing and Conducting Mixed Methods Research*. Thousand Oaks (CA) : Sage, 2013.

<sup>17</sup> See: SEFTON-GREEN, J. et al.: *Establishing a Research Agenda for the Digital Literacy Practices of Young Children: A White Paper for COST Action. IS1410*. 2016. [online]. [2022-04-07]. Available at: <<http://www.lse.ac.uk/media-and-communications/assets/documents/research/projects/p4df/COST-2016.pdf>>; CARRINGTON, V.: An Argument for Assemblage Theory: Integrated Spaces, Mobility and Polycentricity. In BURKE, A., MARSH, J. (eds.): *Children’s Virtual Play Worlds: Culture, Learning and Participation* New York : Peter Lang, 2013, p. 200-216.; See: COLVERT, A.: *Ludic Authorship: Reframing Literacies through Peer-To-Peer Alternate Reality Game Design in the Primary Classroom*. Unpublished PhD, Institute of Education, University College of London, 2015.; See: GREEN, B.: Subject-Specific Literacy and School Learning: A Focus on Writing. In *Australian Journal of Education*, 1988, Vol. 32, No. 2, p. 156-179.



**PICTURE 1:** *The processes of and contexts for children's digital literacy practices*

Source: SEFTON-GREEN, J. et al.: *Establishing a Research Agenda for the Digital Literacy. Practices of Young Children A White Paper for COST Action IS1410*. [online]. [2022-04-07]. Available at: <<http://www.lse.ac.uk/media-and-communications/assets/documents/research/projects/p4df/COST-2016.pdf>>.

When a citizen wants, for example, to communicate a message, he/she draws on these three areas and makes decisions within the context of the following four levels: design (whether the message is multimodal or not); production (creation of the text); distribution (choosing the appropriate channels); and implementation (imagining how the receivers will interpret the message). All these processes take place within the frameworks that influence the digital literacy practices of children, including: micro (with the child), meso (formal and informal learning contexts with family, friends, and the local community), and macro (the nation state).

Similarly, to the predicted model, our project design went from the micro to the macro framework, through a mixed method approach (qualitative and quantitative). It aimed to intervene in micro and meso frameworks with children, teachers, families and the local community, focusing on the empowerment of children concerning digital literacy skills. However, as a whole, and given its characteristic replicable nature, our long-term aim is to have an impact on the macro framework.

## 1.1 The Project in Three Phases and Three Trainings

Renamed 'Digital Citizenship Academy' in 2019, the project had three phases so far:

- I. a three-year period (March 2015 to February 2018), supported by individual research grant;
- II. a twenty-months period (March 2018 to October 2019), not funded;
- III. an ongoing three-year period (November 2019 to December 2022), supported by a project grant funded by Calouste Gulbenkian Foundation.



The first phase consisted of four sub-phases:

- I. preparing and certifying a teacher training course, producing data collecting instruments, and inviting school do participate (March-Dec 2015),
- II. implementing the training, collecting data from teachers, inviting teachers to take part in the intervention process in the community (Jan-Apr 2016);
- III. collecting data from pupils and parents and structuring an intervention plan (May-Sep 2016); iv) implementing and monitoring the plan, in partnership with teachers, children and families, the school board, the local government and other community members (Oct 2016 – February 2018). A main output of the intervention plan was a printed school's newspaper whose first edition was published in December 2016.

The 25-hour training course on 'Digital Citizenship Education for Democratic Participation of young people' (sub-phase ii) took place in Jan-Feb 2016 and was attended by 25 teachers (10 from Preschool) who organized themselves in ten groups and developed 10 media literacy activities with 366 of their students (147 preschoolers and 219 primary school students). The activities were embedded in the work that had been previously planned, and consisted of organizing a book, creating a collective text from image exploitation, discussing the role of newspapers, Internet safety and bullying, learning with and through the media, and analyzing media messages (print and online newspapers, YouTube videos, comics) including advertising.

During the second phase (March 2018 to October 2019), which was not funded, the project remained active, the teachers continued working, planning, implementing and developing media literacy activities. Three new editions of the printed school newspaper were edited and published while meetings with the researcher continued on a regular basis. The project results were presented nationally and internationally, and the Caneças School District became a member of the Council of Europe's Democratic School Network, and a new training course took place, addressing in particular the school newspaper production, because a group of preschool and primary school teachers had started a printed school newspaper in December 2016, making the implementation of this course a crucial need.

As we had already proposed in the training course held in 2016, the planned and developed activities would not collide with the general planning that teachers were already implementing and, from its implementation, two products should result: a media product and a report with the planning, the description of the production process and the students involved and the analysis of the results according to the objectives set at the beginning. The 27 teachers (7 from Preschool, 13 from Primary school and 7 from Secondary school<sup>18</sup>) planned and implemented seven Media Education activities (a wall school newspaper, a co-creation of a plot and story board, a school radio programme, a TV News service, the analysis of the pros and cons of the Internet, memes about sexting, a set of four sequential wall frames focused on bullying), which involved 485 children and students (54 from preschool, 245 from primary and 186 from secondary), but also family members and other community members.

In the third phase (November 2019 to present), in which this article is focused, the 'Digital Citizenship Academy' is funded by the Calouste Gulbenkian Foundation (until December 2022) and focused on STEAM and Media Literacy.

Media Literacy and STEAM have a central aspect in common: using technologies, namely digital technologies,<sup>19</sup> first as toys, but gradually to communicate and learn, and later to work. In other words, there is a transversal use of digital technologies, from birth and throughout life, individually and as part of a community, in formal and informal environments, always preparing individuals for that which the whole society is responsible.

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<sup>18</sup> Note of the authors: The enrolment was opened to Secondary school teachers since it was possible to involve up to 30 teachers in the course.

<sup>19</sup> See: JORGE, A. et al.: *Um Dia Na Vida de 3 Meninos Portugueses Com Menos de 3 Anos*. In STELLA, C., CAMERON, C. A. (eds.): *Psicologia do Desenvolvimento*. Curitiba : Juruá Editora, 2018, p. 65-74.

This preparation has positive effects at the primary school level, namely at four levels: creativity, critical thinking, design-thinking and digital skills.<sup>20</sup> In formalized education, STEAM should start in preschool education through a focus on transformative pedagogies that prepare children to participate in the digital society. As a STEAM contribution, Makerspaces take into account five central aspects:<sup>21</sup>

- I. **Interest** – technologies evolve very fast, which changes the opportunities they offer to children and the motivations that lead them to use these technologies, so it is essential that children can choose topics or problems based on their interest (“maker agency”).
- II. **Community** – without prejudice to the child’s interest, in a logic centered on the individual, it is important to realize that Makerspaces are not based on individual agendas or personal improvement, but on a participative, democratic vision of common interest, which serves as a basis for the development of socio-cultural practices.
- III. **Prior knowledge** – the child’s prior knowledge, which comes from home, is central, as well as the relationships he establishes with his peers, so it mobilizes the cognitive, affective, creative, and relational areas, which considerably increases learning potential.
- IV. **Play** – Play is fundamental in Makerspaces, as it involves cognitive processes linked to creativity, such as problem solving, metacognition and creative practices. The activities that children develop there (e.g.: movement, expressions, drawing, photography, models, cultural tools or objects) allow them to communicate their meanings and perspectives towards the world.
- V. **Postdigital maker play** – it matters not to separate digital activities from those that are analog, because that boundary no longer makes sense.

Having this in mind, the third phase of the project started with two in-service teacher training courses (40 hours each, attended by a total of 29 teachers from preschool, primary school and middle school). Teachers and pupils planned, implemented and assessed STEAM and Media Literacy workshops related with the community context and aimed, in some cases, to solve local problems.

## 2 Methodology

The training course ‘Media Literacy and Journalism: pedagogical practices with the media and about the media’ focuses on the intersection of Media Literacy and STEAM. Explores the concepts and the relationship between them in international standards of training citizens and national policies, in which the trainees are based to plan and implement workshops, following the methodology of project work, linking them with the educational project of the school and the curriculum plans.

Accredited in 2018 by the Scientific and Pedagogical Continuous Training Council, for teachers of the 3rd cycle of basic education and Secondary, the training course approaches other content related with elements and principles of journalism, ethics and deontology, misinformation, democratization of information and exercise of active and responsible citizenship through the media. In 2019, it was adapted, by the research team, to be given for the first time, to teachers of Preschool and Primary school.

<sup>20</sup> See: BOWER, M. et al.: *Makerspaces in Primary School Settings – Advancing 21st Century and STEM Capabilities Using 3D Design and 3D Printing*. Sydney, Australia : Macquarie University. [online]. [2022-04-07]. Available at: <<https://primarymakers.com>>.

<sup>21</sup> See: MARSH, J. et al.: *Makerspaces in Early Childhood Education: Principles of Pedagogy and Practice*. In *Mind, Culture, and Activity*, 2019, Vol. 26, No. 3, p. 221-233. [online]. [2022-04-07]. Available at: <<https://www.tandfonline.com/doi/full/10.1080/10749039.2019.1655651>>.

The course implementation, within the scope of the project, was first scheduled for March 9, 2020, in person, but was canceled due to the measures taken to minimize the effects of the Covid-19 pandemic. The decision also resulted in the cancellation of the creation of a Makerspace on premises provided by the local government (Parish Council of Ramada e Caneças). This space would have held STEAM and Media Literacy workshops every fortnight, some of them with the presence of the children's relatives and other elements of the community.

The training ended up being delivered at a distance via the Zoom platform, in seven sessions between September and December 2020. The delay in delivery from March to September 2020 was to accommodate the teachers, who were focused on emergency distance learning, with all the resulting adaptations. There was no space to include training. Still, it was necessary to make important adaptations to deliver the training course, with five of the fundamental adaptations, namely:

- **Format** – changed from face-to-face to online, with each session having a maximum of three hours, which increased the number of sessions from five (four hours each) to seven (six of three hours each and one of two hours);
- **Cycles covered** – between January and March, data on socioemotional skills (pre-test) had been collected from children attending the 4th year of Primary school, which were carried over to the 5th year and continued at the same school grouping, so enrollment was open to 2nd cycle teachers, with four enrolled;
- **Number of trainees** – it was only possible to involve 30 applicants (one withdrew later), as the rules of the groups changed, from a minimum of 15 elements to a maximum of 15 participants per class;
- **Contents** – the workshops would have to be planned and implemented according to the space of the classroom and not a Makerspace, which implied the adaptation of the contents of the training course;
- **Data collection** – the limitations resulting from the Covid-19 pandemic prevented members of the research team from observing and evaluating the implemented workshops, so, together with the teachers, workshop observation and evaluation sheets were created for teachers and children;

The two editions of the training course took place between September and December 2020. 29 teachers participated (27 female and two male), with the following distribution in terms of levels of education: seven Preschool teachers, 12 Primary school (one librarian), four teachers from 2<sup>nd</sup> Cycle (three of Mathematics/Sciences and one of Visual Education), and six teachers of Special Needs.

### 3 Results

Teachers planned 28 workshops from which 17 were implemented (Table I), totalling 230 hours and involving 410 children (197 females and 213 males). Five workshops focused on preschool education, eight on Primary school, involving children from all the four grades of the cycle, and four focused on the 2nd cycle (5th and 6th grades). Workshop 8 involved two classes, one 2nd Year and another 4th Year, which performed complementary tasks. Workshop 11 was developed with a class that included 3rd and 4th year students.

Nº	Workshop title	Level	Duration	Participants
1	Feeling the music	Preschool	20	45
2	“Umbrella Stick” – percussion musical instrument	Preschool	2	20
3	A Trip to the Solar System	Preschool	40	18
4	“Once upon a time...” – Chinese shadow acting	Preschool	25	20
5	The Giant Turnip - story illustrated and narrated by the children	Preschool	10	21
6	Let's do experiments	Preschool / Primary (year 1)	15	20
7	Geometry at Play	Primary (year 1)	21	47
8	Exhibition about the digestive system	Primary (year 2)	10	22
9	Geometric Solids: electronic quiz	Primary (years 2/4)	8	40
10	Portugal and its flags: the national and regional flags	Primary (year 3)	4	20
11	For a safe school: better streets!	Primary (years 3/4)	12	25
12	Road safety: from Caneças to Islamabad	Primary (year 4)	9	17
13	Number, light and color: making a video with children	Primary (year 4)	12	26
14	Ten fingers, ten secrets: building an articulated hand	2 <sup>nd</sup> cycle (year 5)	4	4
15	4 in a row: mathematical board game	2 <sup>nd</sup> cycle (year 5)	20	7
16	Journalists with a future: news production about Environment	2 <sup>nd</sup> cycle (year 5)	6	29
17	“Knitting...stories”: an interview from wire to wick	2 <sup>nd</sup> cycle (year 6)	12	29
		<b>TOTAL</b>	<b>230</b>	<b>410</b>

**TABLE 1:** Workshops developed by level, duration and participants

Source: own processing, 2021.

### 3.1 Workshop Media Products

Similar to what is common in Media Literacy and STEAM projects, one of the goals of the workshops was to create products<sup>22</sup>. Teachers were provided complete freedom of choice in terms of the type of products, support and methodology followed in their preparation, with some being more associated with the production of multimedia content, and others being associated with science (STEM) and the Arts. The multimedia-related products were organized into five categories:

- I. Videos about the final product (W2, W4)
- II. Videos describing the process (W1, W3, W6, W9, W12, W13, W15, W17)
- III. Photo slide show (W8, W10, W14)
- IV. Power Point file as final product (W5)
- V. Power Point file describing the process (W7, W11, W16)

In eight of the 17 workshops, videos were produced that describe the process, such as the exploration of a book (“A Symphony of Animals”, by Dan Brown), using digital technologies, the creation of instruments from simple materials (ex: xylophones, using open-end wrenches and cardboard) and the interpretation of ‘Turkish March’ by Mozart, with the students organized in an orchestra formation (W1). Other examples of process videos are:

- The creation of a model of the solar system in 3D, using simple materials (styrofoam balls...) and electrical circuits (W3);

<sup>22</sup> See: DIEGO-MANTECÓN, J. et al: Proyectos STEAM con Formato KIKS para el Desarrollo de Competencias Clave. In *Comunicar*, 2021, Vol. 29, No. 66, p. 33-43. [online]. [2022-04-07]. Available at: <<https://www.revistacomunicar.com/verpdf.php?numero=66&articulo=66-2021-03>>.



- The creation of a kit for bean growth, by students from the 1st year of the 1st cycle, who proceeded to record their progress after germination and produced kits which they offered to students in preschool education at the same school (W6);
- The creation of geometric solids on cardboard (2nd Year of Primary) and the production of a game with questions about the characteristics of these solids, to which an electrical circuit (4th Year) was associated with a green or red light, depending on the student response to card questions being right or wrong (W9);
- Exploration of the work 'Why don't animals drive?', by Pedro Seromenho, and subsequent study of traffic signs, including those around the school, whether in Caneças or Islamabad, Pakistan, where some students of Portuguese Non-Native Language are from (W12);
- Production of objects allusive to the seven days of the week, seven musical notes and seven colours of the Rainbow, using an electrical circuit in one of the cases, followed by choreographed interpretation of the song "7 days, 7 notes, 7 colours", by Maria de Vasconcelos (W13);
- Production of the game '4 in a row', cross-curricular, with Mathematics, Visual Education and Natural Sciences (W15);
- Preparing a script and organizing an interview with a non-teaching staff member of the school and conducting this interview, followed by writing and preparing for publication (W17).

The slideshows were an option in three workshops, namely the preparation of an exhibition on the digestive system, which included a 3D work (W8), the production of the national flag and the flags of the Madeira and Azores archipelagos (W10) and the production of an articulated hand, involving four students in need of accommodations to support learning due to their specific conditions (W14).

PowerPoint files were used in four cases, the first as a final product, in which preschool students produced drawings for each of the slides and told the story 'The Gigantic Turnip' by Aleksey Tolstoy, allowing the user to choose between listening to the story told by children or by an adult, or listening to both and comparing.

The other three files describe processes such as using the computer to build geometric figures (W7), building a model with proposals to improve road safety around the school, and writing a letter to the local government (W11), as well as research on the situation of environmental pollution in the community and production of news on these cases in conjunction with the Sustainable Development Goals (W16).

The products of the workshops were kept in their original versions, without any professional editing, and the teachers produced them without having access to any training or technological equipment other than those they had access to before the beginning of the training course. These authentic products (which only underwent minor changes to protect the data and identity of children) were uploaded to a YouTube channel, created for this purpose.<sup>23</sup>

### 3.2 Other Resources Produced

In addition to the multimedia products the workshops allowed the creation of other products, which we have organized here into seven categories:

- I. Musical instruments created by children to interpret Mozart's Turkish March (W1) and to simulate sound (W2) in Chinese shadow theatre;
- II. Models, namely the solar system (W3), the proposed improvement of road safety around the school (W11), and 3D objects, such as the puppets of the Chinese shadow theatre (W4), materials for the music choreography '7 days, 7 notes, 7 colours', by Maria de Vasconcelos (W13), and the articulated hand (W14);

<sup>23</sup> O Cusco - *Jornal Escolar*. [online]. [2022-04-07]. Available at: <<https://bit.ly/3AsnROH>>.

- III. Drawings produced to be included in PowerPoint with the story 'The Gigantic Turnip' (W5);
- IV. Strategies for using software/hardware, either to produce human or other geometric figures (W7) or the use of robots in educational activities associated with road safety (W12);
- V. Exhibition of products, namely posters on the digestive system (W8) or the flag of Portugal, the Madeira Islands and the Azores Islands (W10);
- VI. Games and experiments, such as the creation of the bean maturity kit (W6), the game about geometric solids (W9) and the '4 in a row' game, which stayed at school, in the space of mathematical games (W15);
- VII. Journalistic text, like the one of the maids about cases of environmental pollution in the Caneças' community (W16) or about what life was like at one of the non-teaching staff member's grandma's time (W17).

## 4 Discussion

Each teacher participating in the training courses prepared a final report with five areas: compliance with the planning (dates, hours, constraints and strategies to overcome them); evaluation (strategy and resources used), results (achieved, not achieved); and sustainability of the workshops after the training course and annexes (evidence and resources used). These reports were subject to content analysis, using the software Atlas.ti.

### 4.1 Constraints and Strategies to Overcome Them

In the teachers' opinion, all the plans were fulfilled, although some of them required more time than initially foreseen, and the time dedicated to the workshops was not linear but divided over time. As an example, only two workshops (W2 and W10) were started and concluded in the same month, in November. Almost every workshop underwent adaptations, because of constraints mentioned by the teachers, which we organized into five groups:

- I. **Physical conditions** – “the extreme luminosity of the room” made it difficult to record the Chinese shadow theater video (W4), as well as “the outside noise at the time of recording” (W5).
- II. **Conjuncture** – public health rules to deal with the Covid-19 pandemic meant that “on stipulated days for recordings, some children were absent” and had to be replaced (W5), that some students were prevented from working “at four-seater tables” (W6, W15), or that it was not possible to develop activities for some time (“the classes were in prophylactic isolation from November 19th to December 9th”).
- III. **Resources** – the “absence of Internet access, which made research difficult” (W6, W9), the “network failures” (W7), the lack of a “camcorder and a photo and video editing program” (W8), “the reduced number of computer equipment”, especially tablets, with which the activity “would have been easier to carry out, due to the possibility of ‘dragging’ on the touch screen” (W7).
- IV. **Children** – “the lack of autonomy of some elements of the groups” (W1) which “forced a very individualized support for the children” (W2, W4), with some finding it “very difficult to handle the mouse” (W7) and others quickly forgetting the work instructions, which “made it necessary to recall, at the beginning of each 45-minute session, the work objectives, the work done and what was to be done” (W16).
- V. **Teachers** – research and selection of information and recording activities “would have been more productive if developed with smaller classes” (W8), as it is difficult to use certain equipment when “there is only one teacher to respond to all requests” (W7), and, at least in some cases, such as “in video editing techniques and even filming (...) the main obstacle was the lack of training in the area (...) so everything was done intuitively” (W13).

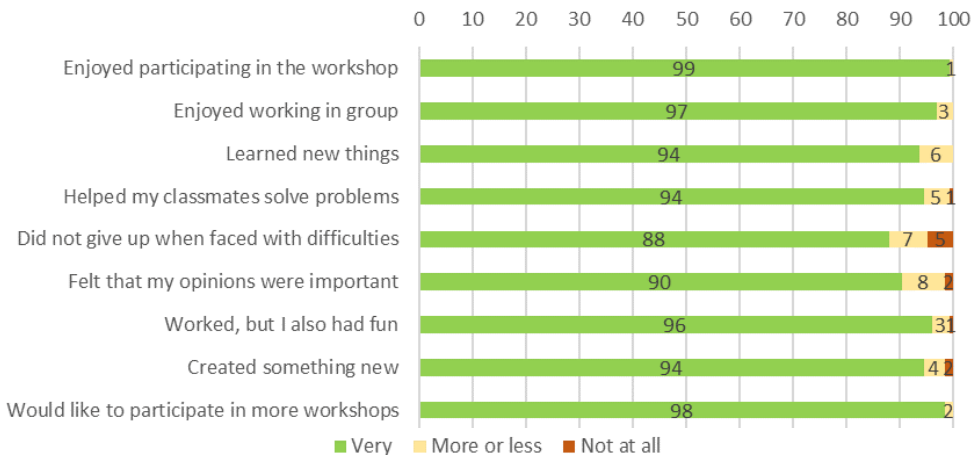
In addition to making more time available for activities, providing individual support and betting on the “positive reinforcement” of behaviours, the teachers adopted several strategies, which we organized into seven areas, namely: reflection and monitoring, chain improvements, interdisciplinary, collaboration between students, use of teacher resources, extended work hours, and families and community support.

## 4.2 Strengths of the Workshops According to the Teachers

The final assessment was carried out using self-assessment forms for children in preschool education, Primary and 2nd cycle of basic education and for teachers. Following the assessment process, teachers identified six types of strengths in the workshops: start from the interest of the children, Focus on practical and real situations, foster interdisciplinary connections, associate learning with playing, involve cooperation and collaboration, encourage participation and social intervention, develop knowledge, and develop skills and attitudes.

## 4.3 Workshops’ Assessment by Children

After having analysed the data made available by the teachers, either in their reports or in the attached documents, and concerning workshops that involved Preschool children, we obtained data of 125 responses individuals, which allowed us to conclude that the children enjoyed participating in the activities (Figure 1):

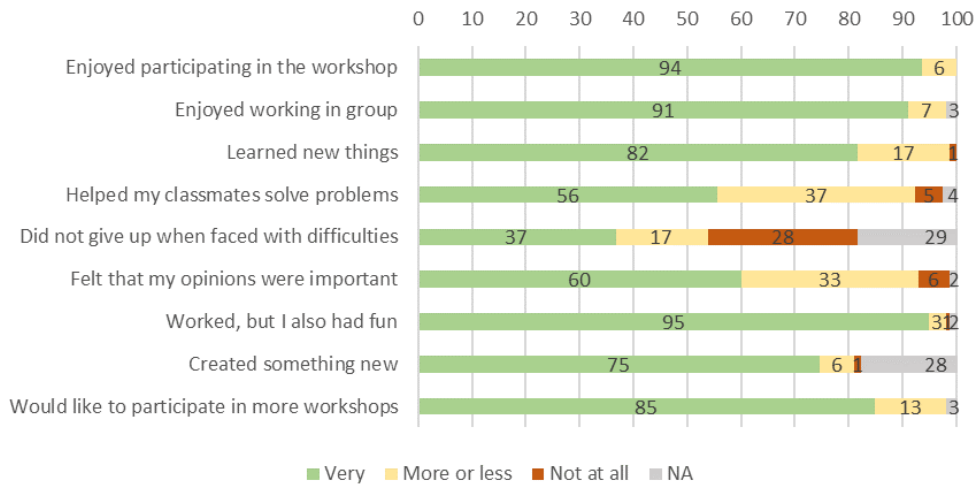


**FIGURE 1:** Evaluation of workshops by children through Annex VI (%) (n=125)

Source: own processing, 2021.

Children enjoyed working in groups (more or less) as they learned new things and are further available to participate in additional workshops. The vast majority felt that they worked, but also had fun (96%), that they helped their peers solve problems (94%) and that they created something (94%). It is also important to understand the reasons for there being a fringe of children who responded differently. From the teachers’ perspective, the children had difficulty in understanding some statements, which can justify these answers, similarly to what happened with the statement “I didn’t give up in the face of difficulties” which, “because I was in the negative, I was not understood” (W3). Finally, 10% of the children felt that their opinions were not important to their peers (2%) or only partially (8%), but the teachers stated that this type of response was more common among children who “are less participatory” (W6).

Regarding the assessment of workshops involving Primary school or 2<sup>nd</sup> Cycle children, we focused first on the answers that allowed quantitative analysis, followed by a qualitative analysis (selection of student expressions). We were able to gather responses from 158 children, all of whom enjoyed very much (94%), or more or less (6%), participating in the workshops (Figure 2).



**FIGURE 2:** Evaluation of workshops by children through Annex VII (%) (n=158)

Source: own processing, 2021.

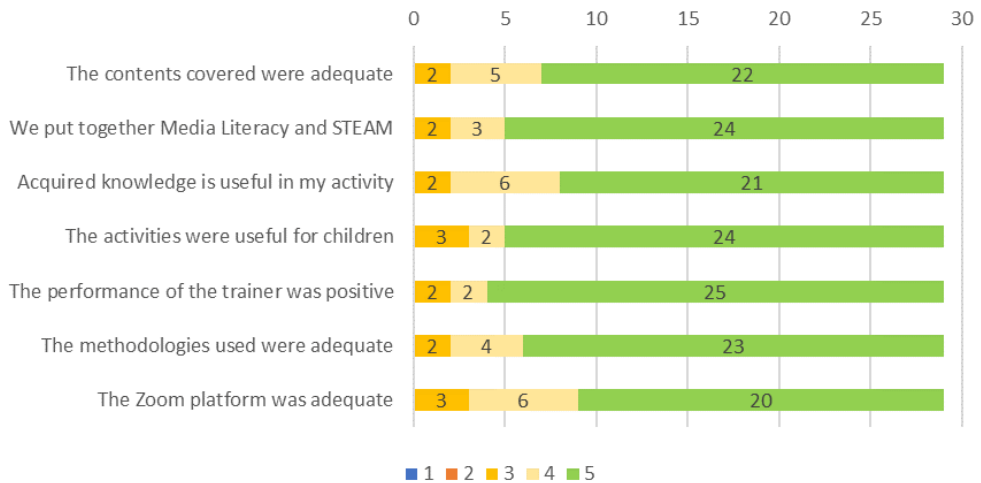
Similarly, older children considered that they worked, but also had fun, and enjoyed working in groups and would like to participate in future workshops like those in which they had already participated. Their responses align with younger children, although with different percentages of total agreement regarding having learned “new things” and having created something. It is important to mention here that the 28 respondents in this item were all involved in the same workshop.

Students were, however, more critical in relation to the assessment of their performance. Only 56% of children consider that they helped their peers to solve problems, teachers did not have an explanation. However, it is difficult to infer what the students mean by “help colleagues to solve problems” because the answers may even be related to the difficulty in identifying the problems themselves or when they were, in fact, part of the solution. The statement “I didn’t give up in the face of difficulties” may not have been understood, as explained above.

With more or less difficulty, the children managed to correctly order the phases of the workshops, having valued various aspects, such as: content, technical skills, social skills and social intervention.

#### 4.4 Training Course Assessment by Teachers

Teachers assessed the training course through an online questionnaire and the final reports they had produced. The questionnaire consisted of three closed and three open questions. All trainees (n=29) responded by class, although the data are presented together. The first closed question requested the evaluation of seven parameters through a scale with values between 1 (totally disagree) and 5 (totally agree), with the results being available in Figure 3:



**FIGURE 3:** Evaluation of the training course by trainees (n=29)

Source: own processing, 2021.

Teachers earned a positive overall assessment regarding the contents, the relationship between the contents and the application of these contents in the teaching activity, although the latter is one of the two in which the total agreement is lower (21). The activities developed in the scope of the workshops were considered useful for the children, although five of the teachers did not fully agree.

In terms of the implementation of the training course, the teachers evaluated the trainer’s overall performance positively, but the level of total agreement is lower when evaluating the methodologies used (six teachers selected the value 3 or 4) and even lower when evaluating the platform used (*Zoom*). In two sessions (1 and 5) there were problems with access, which were, however, solved in good time.

The assessment of the suitability of the platform was influenced by other reasons, as was clear from the open-ended answers regarding the question “aspects for improvement”. Teachers said that it will be “important to have a physical presence in schools”, that is, “in-person training”, which, in their view, should “be open to a greater number of students”. One teacher even stated that this type of training should take place continuously, involving teachers from all education cycles “so as to ensure vertical continuity”.

From the teachers’ perspective, the constraints arising from the pandemic “may be overcome”, so “the dynamics of work in the classroom can improve without these constraints”, including practical examples: “I would like to have developed an activity more related to Experimental Sciences. This did not happen due to the constraints we faced caused by the pandemic”. They also asked for more IT support and available resources in mother language. Despite the needs pointed out, they have mentioned five types of positive aspects: appropriateness of the workshop theme, sharing experiences, ideas and practices, interdisciplinary cooperation, usefulness of learning, and creation of resources.

Finally, all teachers agreed that the duration of the training course was “adequate” (and not insufficient or excessive) and showed their availability to continue involved in the ‘Digital Citizenship Academy’, even though participation in the training did not imply such a decision.



## 5 Conclusions

The two in-service teacher training courses on STEAM and Media Literacy implemented on behalf of the 'Digital Citizenship Academy' had as main result a set of 17 planned, implemented and assessed workshops, which allowed the creation of two types of products, some in reflective production of media content, and others associated with STEAM, with a clear focus on the arts, but in which science, technology, engineering and mathematics were present. These indicators point to the fact that STEAM projects gain in relevance when associated with Media Literacy activities, and vice versa.

In spite of the Covid-19 pandemic, in which physical and technological resources were lacking, the teachers implemented strategies to overcome the lack of autonomy of many students, especially younger ones, while also supporting each other when time or even technical knowledge was an obstacle (ex.: video editing). These strategies consisted of frequent and joint reflection among the teachers and with the students, creating conditions for gradual improvement of the work carried out. That was done by teachers, with their own resources, and through giving up their personal time and involving families and other members of the community.

The implementation of these strategies contributed to the results achieved, which were subject to regular monitoring among teachers, including through the training course sessions. The evaluation carried out throughout the process was also focused on the observation of situations, attitudes and actions of interest, participation and commitment, communication and collaboration, creativity and critical thinking. The oral feedback from students, through conversations in large/small group meetings and individual conversations, the completion of evaluation sheets on the covered content, the presentation of papers, the children's productions and the spirit of observation were other elements of evaluation.

Workshops' assessment took place throughout the process, informally through monitoring and observation, and at the end of the process, through evaluation sheets for teachers and students, which were created during the training courses. In the opinion of the teachers, and in line with the scientific literature, the strengths of the workshops are due to the fact that they are based on the interests of children,<sup>24</sup> and that they are focused on practical and real situations,<sup>25</sup> which refer to problems whose resolution processes are more effective when they assume an interdisciplinary logic.

The practical tasks developed in the STEAM and Media Literacy workshops associate play<sup>26</sup> and creativity to learning not only content, but also cognitive, social and emotional skills and competences. The tasks also encourage cooperation and collaboration between teachers, between students and between teachers and students, fostering resilience and persistence in seeking solutions or improvements to a product.<sup>27</sup> They can also be seen as key initiatives in terms of participation and social intervention.

<sup>24</sup> See: MARSH, J. et al.: Makerspaces in Early Childhood Education: Principles of Pedagogy and Practice. In *Mind, Culture, and Activity*, 2019, Vol. 26, No. 3, p. 221-233. [online]. [2022-04-07]. Available at: <<https://www.tandfonline.com/doi/full/10.1080/10749039.2019.1655651>>.

<sup>25</sup> COUNCIL OF EUROPE: *Reference Framework of Competences for Democratic Culture*. Strasbourg : Council of Europe, 2018. [online]. [2022-04-07]. Available at: <<https://www.coe.int/en/web/reference-framework-of-competences-for-democratic-culture/>>; MINISTÉRIO DA EDUCAÇÃO: *Perfil dos Alunos à Saída da Escolaridade Obrigatória*. Lisboa : Editorial do Ministério da Educação e Ciência. [online]. [2022-04-07]. Available at: <[https://www.dge.mec.pt/sites/default/files/Curriculo/Projeto\\_Autonomia\\_e\\_Flexibilidade/perfil\\_dos\\_alunos.pdf](https://www.dge.mec.pt/sites/default/files/Curriculo/Projeto_Autonomia_e_Flexibilidade/perfil_dos_alunos.pdf)>; UNESCO: *Keystones to Foster Inclusive Knowledge Societies – Access to Information and Knowledge, Freedom of Expression, Privacy, and Ethics on a Global Internet*. Paris : UNESCO, 2015. [online]. [2022-04-07]. Available at: <<https://unesdoc.unesco.org/ark:/48223/pf0000232563>>.

<sup>26</sup> See: MARSH, J. et al.: Makerspaces in Early Childhood Education: Principles of Pedagogy and Practice. In *Mind, Culture, and Activity*, 2019, Vol. 26, No. 3, p. 221-233. [online]. [2022-04-07]. Available at: <<https://www.tandfonline.com/doi/full/10.1080/10749039.2019.1655651>>.

<sup>27</sup> See: DIEGO-MANTECÓN, J. et al: Proyectos STEAM con Formato KIKS para el Desarrollo de Competencias Clave. In *Comunicar*, 2021, Vol. 29, No. 66, p. 33-43. [online]. [2022-04-07]. Available at: <<https://www.revistacomunicar.com/verpdf.php?numero=66&articulo=66-2021-03>>.

The forms created by the teachers so that children could evaluate the workshops were adapted to the respondents and were important on two levels: to give children a voice and to improve, both the following workshops and the evaluation sheets themselves. In general, children liked the workshops, wanted to participate in more, liked to work in groups, and liked to have fun and to learn “new things”.

They easily recognized that they learned in these workshops, not only content, but technical skills, social skills and even ways to intervene socially. However, children did have some difficulty in recognizing situations in which the initiative was theirs, as well as whether they helped their colleagues in solving problems, or in realizing whether their opinions are listened to and respected.

*Acknowledgement: This study was supported by Calouste Gulbenkian Foundation – Knowledge Programme.*

## Literature and Sources:

BOWER, M. et al.: *Makerspaces in Primary School Settings – Advancing 21st Century and STEM Capabilities Using 3D Design and 3D Printing*. Sydney, Australia : Macquarie University. [online]. [2022-04-07]. Available at: <<https://primarymakers.com>>.

CARRINGTON, V.: An Argument for Assemblage Theory: Integrated Spaces, Mobility and Polycentricity. In BURKE, A., MARSH, J. (eds.): *Children’s Virtual Play Worlds: Culture, Learning and Participation* New York : Peter Lang, 2013, p. 200-216.

CHAUDRON, S.: *Young Children & Digital Technology: A Qualitative Exploratory Study Across Seven Countries*. Luxembourg : Publications Office of the European Union, 2015.

COLVERT, A.: *Ludic Authorship: Reframing Literacies through Peer-To-Peer Alternate Reality Game Design in the Primary Classroom*. Unpublished PhD, Institute of Education, University College of London, 2015.

COUNCIL OF EUROPE: *Reference Framework of Competences for Democratic Culture*. Strasbourg : Council of Europe, 2018. [online]. [2022-04-07]. Available at: <<https://www.coe.int/en/web/reference-framework-of-competences-for-democratic-culture/>>.

CRESWELL, J., CLARK, V.: *Designing and Conducting Mixed Methods Research*. Thousand Oaks (CA) : Sage, 2013.

DIEGO-MANTECÓN, J. et al: Proyectos STEAM con Formato KIKS para el Desarrollo de Competencias Clave. In *Comunicar*, 2021, Vol. 29, No. 66, p. 33-43. ISSN 1134-3478. [online]. [2022-04-07]. Available at: <<https://www.revistacomunicar.com/verpdf.php?numero=66&articulo=66-2021-03>>.

FRAU-MEIGS, D., TORRENT, J.: *Mapping Media Education Policies Worldwide: Visions, Programmes and Challenges*. New York : UN Aoc, 2009.

GEE, J. P.: *New Digital Media and Learning as an Emerging Area and “Worked Examples” as One Way Forward*. New York : MIT Press, 2009.

GREEN, B.: Subject-Specific Literacy and School Learning: A Focus on Writing. In *Australian Journal of Education*, 1988, Vol. 32, No. 2, p. 156-179. ISSN 20505884.

HEATH, C.: *Annotated Bibliography for Online Misinformation. Evidence for Democracy*. 2021. [online]. [2022-04-07]. Available at: <<https://evidencefordemocracy.ca/en/research/reports/annotated-bibliography-online-misinformation?fbclid=IwAR00hkSOe3ITcg1n6eCdHlj6f1G2z2MbS8PsqkoOzWEHWkmqVybgVvKEYkc>>.

HILLS, M. et al.: Community-based Participatory Action Research: Transforming Multidisciplinary

- Practice in Primary Health Care. In *Rev Panam Salud Publica*, 2007, Vol. 21, No. (2-3), p. 125-135. ISSN 1680 5348. [online]. [2022-04-07]. Available at: <[https://www.researchgate.net/publication/6270848\\_Community-based\\_participatory\\_action\\_research\\_Transforming\\_multidisciplinary\\_practice\\_in\\_primary\\_health\\_care](https://www.researchgate.net/publication/6270848_Community-based_participatory_action_research_Transforming_multidisciplinary_practice_in_primary_health_care)>.
- HOBBS, R.: Media Literacy. In MASTRO, D., NUSSBAUM, J. (eds.): *Oxford Research Encyclopedia of Communication*. London : Oxford University Press, 2016.
- HOLLOWAY, D. et al.: *Zero to Eight: Young Children and their Internet Use*. LSE, London : EU Kids Online, 2013. [online]. [2022-04-07]. Available at: <<http://eprints.lse.ac.uk/52630/>>.
- JENKINS, H.: *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. New York : MIT Press, 2009.
- JORGE, A. et al.: Um Dia Na Vida de 3 Meninos Portugueses Com Menos de 3 Anos. In STELLA, C., CAMERON, C. A. (eds.): *Psicologia do Desenvolvimento*. Curitiba : Juruá Editora, 2018, p. 65-74.
- MARSH, J. et al.: Makerspaces in Early Childhood Education: Principles of Pedagogy and Practice. In *Mind, Culture, and Activity*, 2019, Vol. 26, No. 3, p. 221-233. ISSN 1532-7884. [online]. [2022-04-07]. Available at: <<https://www.tandfonline.com/doi/full/10.1080/10749039.2019.1655651>>.
- MINISTÉRIO DA EDUCAÇÃO: *Perfil dos Alunos à Saída da Escolaridade Obrigatória*. Lisboa : Editorial do Ministério da Educação e Ciência. [online]. [2022-04-07]. Available at: <[https://www.dge.mec.pt/sites/default/files/Curriculo/Projeto\\_Autonomia\\_e\\_Flexibilidade/perfil\\_dos\\_alunos.pdf](https://www.dge.mec.pt/sites/default/files/Curriculo/Projeto_Autonomia_e_Flexibilidade/perfil_dos_alunos.pdf)>.
- NIELSEN, R. K. et al.: *Navigating the 'Infodemic': How People in Six Countries Access and Rate News and Information about Coronavirus*. Oxford : Reuters Institute for the Study of Journalism & University of Oxford, 2020. [online]. [2022-04-07]. Available at: <<https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-04/Navigating%20the%20Coronavirus%20Infodemic%20FINAL.pdf>>.
- O Cusco – jornal escolar*. [online]. [2022-04-07]. Available at: <<https://bit.ly/3AsnROH>>.
- RIVOLTELLA, P.: Realidad y Desafíos de la Educación en Medios en Italia. In *Comunicar*, 2007, Vol. 15, No. 28, p. 17-24. ISSN 1134-3478.
- SEFTON-GREEN, J. et al.: *Establishing a Research Agenda for the Digital Literacy Practices of Young Children: A White Paper for COST Action. IS1410*. 2016. [online]. [2022-04-07]. Available at: <<http://www.lse.ac.uk/media-and-communications/assets/documents/research/projects/p4df/COST-2016.pdf>>.
- TOMÉ, V.: CD-Rom “*Vamos Fazer Jornais Escolares*”: *Um Contributo para o Desenvolvimento da Educação para os Média em Portugal*. Unpublished PhD Thesis, Faculdade de Psicologia e de Ciências da Educação da Universidade de Lisboa, Portugal, 2008.
- TOMÉ, V.: Redes sociais online: práticas e percepções de jovens (9-16), seus professores e encarregados de educação. In TOMÉ, V., BÉVORT, E., REIA-BAPTISTA, V. (eds.): *Research on Social Média: A Glocal View*. Lisbon : RVJ-Editores, 2015, p. 127-335.
- UNDERWOOD, C. et al.: Getting it Together: Relational Habitus in the Emergence of Digital Literacies. In *Learning, Media and Technology*, 2013, Vol. 38, No. 4, p. 478-494. ISSN 17439884.
- UNESCO: *Keystones to Foster Inclusive Knowledge Societies – Access to Information and Knowledge, Freedom of Expression, Privacy, and Ethics on a Global Internet*. Paris : UNESCO, 2015. [online]. [2022-04-07]. Available at: <<https://unesdoc.unesco.org/ark:/48223/pf0000232563>>.
- UNESCO: *Seoul Declaration on Media and Information Literacy for Everyone and by Everyone: A Defence against Disinfodemics*. [online]. [2022-04-07]. Available at: <[https://en.unesco.org/sites/default/files/seoul\\_declaration\\_mil\\_disinfodemic\\_en.pdf](https://en.unesco.org/sites/default/files/seoul_declaration_mil_disinfodemic_en.pdf)>.
- WARDLE, C., DERAKHSHAN, H.: *Information Disorder: Toward an Interdisciplinary Framework for Research and Policy Making*. Strasbourg : Council of Europe, 2017. [online]. [2022-04-07]. Available at: <<https://rm.coe.int/information-disorder-report-november-2017/1680764666>>.

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