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Media literacy in early education: European policies and curricular differentiation

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ABSTRACT

This article is the result of work carried out within the scope of Erasmus+ project Kit@: Media competency training for professionals in day-care centres and comparable institutions in rural areas of Europe. Its main objective is to describe ECE systems, curriculum guidelines, pre-service teacher training curricula and teacher profiles related to media education and ICT use in ECE across the Europe project partners from Bulgaria, Germany, Greece, Portugal, and Slovakia. Data collection was carried out by documentary consultation of the curriculum guidelines of each country involved and a questionnaire on ICT use and media education in ECE, specifically developed for this purpose, answered by partners participating in the Kit@ project, and through consultation of official international reports (e.g., OECD, EURYDICE), who collected the data between January and July, 2018. Findings indicate there is a pedagogical area in all countries where the use of ICT and media education is referred to directly or indirectly in the ECE curriculum. However, in most countries, there are no guidelines for media education in initial education. Furthermore, the training of professionals and costs in ECE are quite different. Findings are discussed in terms of implications for media literacy practices in kindergarten across Europe.

KEYWORDS

Media literacy; early childhood education; European policies

1. Introduction

Young children are surrounded by screens and exposed to digital media (Ponte et al., 2017). From an early age, children are in contact with various screens and with diverse types of media that allow them quick access to information. Consequently, from an early age, children need to develop competencies such as access to and use of digital technology or media literacy (Buckingham, 2014; Sefton-Green et al., 2016). These contacts with media and the Internet play a key role in the development of children (European Commission, 2007).

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Although the importance of education for the media and the use of ICT has already been socially recognized, it is only in the years that international organizations (European Commission, 2013; OECD., 2013) have highlighted the importance of media education and the use of ICT for the development of young children between the ages of 3 and 6 years. One of the reasons for this, among others, is that "the importance of Media Education in schools stems from the fact that children and young people are becoming increasingly intensely identified as consumers and producers of media. They must therefore be equipped with the knowledge and skills for a well-informed consumption and understanding" (Pereira et al., 2014, p.5). However, it is important to understand that there are inequalities in access to digital technologies (e.g., socioeconomic status, age, area where they live) (Livingstone et al., 2015).

In this sense, Livingstone et al. (2012, p. 11) remember that "many children do not have sufficient resources to use the Internet to explore their opportunities or to develop vital digital literacy skills" Also, the media is relevant throughout its development, since it can help the understanding of the reality surrounding the child, as well as help him adjust social behaviors and interact with his peers.

1.1. The importance of ECE and educational policies

International agencies recognize the importance of providing high-quality ECE to promote the global and healthy development of children (e.g., EU, OECD, UNESCO) due to the recognition of its long-term impact on children's lives (Vandenbroeck et al., 2018).

Improving the quality of ECE requires, among other things, raising the social value of the purpose of this level of education and the inclusion of socio-culturally and economically diverse children and families. In this sense, several entities recognise the importance of collaborating with policymakers (international and national) and the local educational community (e.g., children, families, and ECE professionals) to achieve high quality and increase opportunities.

In particular, the European Union has recognized the responsibilities of governments and international entities in improving the quality of ECE and enhancing children's outcomes, which includes the development of media literacy at ECE, and the accompaniment of teachers trained to help children deal with their experiences in the media.

1.2. European recommendations about media literacy in Europe

According to recommendations by the OECD and UNESCO, it is important to provide guidelines on ICT use and media education in ECE since it is an area of learning that cannot be missed or ignored in the lives of children (OECD, 2012,2015,2016,2018). Entities such as the OECD, the European Union, the UN,

or UNESCO have recommended that policy decisions be made to promote National Educational or Curriculum Guidelines for Early Childhood Education that address these issues. The definition of curriculum guidelines in ECE allows the structuring of children's experiences. The different educational agents in each country must assume the role of co-constructors of the curriculum, creating partnerships between teachers, parents, children, and communities to achieve ECE objectives (Burchinal, 2018;OECD., 2017).

They also recognize that ICT matters in ECE, because it influences people and the environments that surround young children's learning and well-being. There is strong consensus in the literature that it is timely for the role and potential of ICT for the ECE sector to be critically examined, to guide future developments and decision-making in this area. In most cases, the use of technologies is considered a cross-disciplinary learning area involving a variety of methodologies that may include project-based, inquiry-based, or game-based learning. Also, Buckingham (2000) and Livingstone (2002) regarding how media literacy and ICT use can be addressed with children between 3 and 6 years of age, but different countries of the European Union are using ICT and media education in diverse ways. Therefore, it is essential to understand the curriculum guidelines, the ECE context and the early childhood practices in the various European countries involve in this project.

2. Methods

This exploratory investigation intended to constitute the basis for the knowledge of the reality of media education in the ECE in the European countries involved in this project, to identify and describe the educational systems (I), the curriculum guidelines (II), preservice teacher training curriculum (III) and teacher profile (IV).[1] This information may assist the European decision-making process regarding educational and political guidelines within the scope of media literacy in the context of ECE and further clarify different perspectives on ICT use and media literacy in early childhood and ECE that can influence practices in kindergarten across the Europe.

Data collection was carried out by documentary consultation of the curriculum guidelines of each country involved and a questionnaire on ICT use and media educa- tion in ECE, specifically developed for this purpose, answered by partners from the five countries participating in the Kit@ project (Bulgaria, Germany, Greece, Portugal, and Slovakia), and through consultation of official international reports (e.g., OECD, EURYDICE, UNESCO), who collected the data between January and July, 2018.

The questionnaire used consists of four parts related to the Guidelines on ICT use and media education in ECEC (Part I), the European research findings on media/ICT use in early childhood (3–5/6) and ECEC (Part II), Professional development approaches/programs focusing on ICT use and media education in ECEC (Part III) and analysis of European opportunities and challenges associated with ICT use,

media education of young children, and media competency of ECEC professionals (Part IV) and constituted for ten semi-open and three closed questions.

2.1. Research limitations

Despite the guidelines provided, the analysis and collection of information was conducted by the partners, since they were in the languages of each country, which may constitute a limitation of this study.

3. Results and discussion

3.1. ECE system

An overview of ISCED Level 0 in the five participating countries is presented below (Table 1).

Regarding the ECE system in Bulgaria, Germany, Greece, Portugal, and Slovakia it can be said that all five education systems provide at least 2 years of ECE. In most countries, ECE for children aged 3–5/6 years is under the responsibility of the Ministry of Education and these countries tend to spend less per child in all ECE institutions than the OECD average. In some countries ECE can also be provided by government-dependent private institutions or/and independent private institutions. Also, in Bulgaria, Greece, Portugal, and Slovakia the percentage of children enrolled in public ECE institutions is higher than the percentage of children enrolled in private institutions.

There were also differences between the various countries regarding participation rates in ECE where the OECD average are above in two countries (Germany and Portugal) and follow the trend of the OECD to increase access to ECE. In turn, the per- centage of overall spending in ECE varies among countries: Germany and Portugal have percentages of overall spending in ECE similar to the OECD average; Slovakia has a percentage of overall spending in ECE below the OECD average; and Bulgaria has a percentage of overall spending in ECE above the OECD average.

3.2. Curriculum guidelines

In general, similar curriculum guidelines exist in the countries analyzed. In all participating countries there are policies and educational guidelines for ECE.

The number of Central Educational Fields for Preschool Education ranges from 3 to 9 areas (see Table 2).

In these countries' present similar pedagogical objectives for ECE, where inclusion and developmental outcomes (e.g., communication, critical thinking) are highlighted. Not only ECE aims to support children and families in their development and to assist the country economy (supporting the employability

of parents) but also ECE curricula include a center or school-based approach, with qualified professionals. Similarly, in all countries, there is a pedagogical area where the use of ICT and media education is referred to directly or indirectly in the ECE curriculum, associated with communica- tion, information and/or expression (Germany, Greece, and Portugal) mathematics (Slovakia) or construction and craftsmanship area (Bulgaria). Correspondingly, all countries mentioned that children in ECE use ICT, and in most countries, ICT is also used by teachers for administrative, planning, and documentation purposes (except Slovakia).

However, ICT and media education are crosscutting areas is most countries (i.e., Bulgaria, Germany, Greece, and Portugal), except in Slovakia where ICT seems to stand alone. In the same way, some German Landers, there is a clear curriculum reference to early promotion of media literacy in ECE while in Bulgaria, Germany, and Portugal, there is recognition by the Ministry of Education of the importance of media education. On the contrary, in Portugal and Greece, there are suggestions for using ICT in an integrated way, stimulating the use of ICT as a means of developing skills in other areas, while in Bulgaria and Slovakia there are no such indications. In Germany, there are Lander variations. Also, in Portugal and in some Landers of Germany, there are ICT and Media guidelines for ECE, but only in Germany there is an explicit expectation for ECE teachers to provide media education, in some federal states.

Table 1. Overview of ISCED level 0 in the five participating countries.

Country	Bulgaria	Germany	Greece	Portugal	Slovakia	OECD Average
General ECE system[4]						
Usual starting age in ECE	*3*	*3*	*4*	*3*	*3*	_
Number of years in ECE	*4*	*3*	*1 to 2*	*3*	*3*	_
Starting age of compulsory education	*7*	*6*	*5*	*6*	*6*	_
Under the Ministry of Education	*Yes*	*No*	*Yes*	*Yes*	*Yes*	_
Free ECE provision (hours/age)	*20h (until 5y) 24h(6y)*	*28h*	*22.5h (4-5y)*	*25h (3-6y)*	*40h (5-6y)*	_
Participa- tion rate for children between 4 and the starting age of compulsory education (2015)[4]	*86.5*	*97.4*	*79.6*	*93.6*	*78.4*	_
Percentage of children enrolled in public and private ECE institutions (2015)[5]						
% children enrolled in public institutions	*98*	*35*	*92*	*53*	*95*	*67*
% children enrolled in private institutions	*2*	*65*	*8*	*47*	*5*	*33*

[4]**Sources**: EUROSTAT (2018). *Pupils aged between 4 years old and the starting age of compulsory education, by sex - as % of the population of the corresponding age group*. Retrieved from https://tinyurl.com/5n72bc5s; Eurydice. (2012). *Key data on education in Europe 2012*. Retrieved from https://tinyurl.com/2p8zjjrx; Eurydice. (2013). *Structure of the European education systems 2012/2013: Schematic diagrams*. Retrieved from https://tinyurl.com/3392jtr6; OECD (2012). *Education at a glance 2012*. Retrieved from http://dx.doi.org/10.1787/eag-2012-en; OECD (2017). *Education at a glance 2017: OECD Indicators*. Retrieved from http://dx.doi.org/10.1787/eag-2017-en; UNESCO (n/d). *World data on education (7th ed.)*. Retrieved from http://www.ibe.unesco.org/;
[5]**Sources**: European Commission/EACEA/Eurydice (2017). *The structure of the European education systems 2017/18: Schematic diagrams*. Retrieved from https://tinyurl.com/b37s7x3w; European Commission/EACEA/ Eurydice/Eurostat (2014). *Key data on early childhood edition*. Retrieved from https://tinyurl.com/3rpzaayn.

Table 2. Characteristics of the educational curriculum guidelines for early childhood education and care in Bulgaria, Germany, Greece, Portugal and Slovakia.

Country	Number of Central Educational Fields for Preschool Education	Educational fields centered on ICT	Suggestion of transversality of ICT use
Bulgaria	*8*	*"Construction-technical and craftman-ship skills"*	*No*
Germany	*7*	*"Mathematical-natural science education and technology"*	*Depended on the Lander*
Greece	*9*	*"Creation & Expression and Information Technology"*	*Yes*
Portugal	*3*	*"Knowledge of the World"*	*Yes*
Slovakia	*7*	*"Mathematics and work with information"*	*No*

3.3. ICT use and media education in ECE teachers' profiles

General and the specific professional profiles of early child education teachers/educators, providing a basis for the development and certification of initial training programs.

3.3.1. Pre-service teacher training curricula

Differences were also observed regarding the pre-service teacher-training requirements between countries and the minimum qualification required for teachers to work in ECE: Slovakia and Germany is secondary education or equal to and Bulgaria, Greece, and Portugal is higher than Bachelor's degree in a university.

As regards pre-service teacher training curricula, most countries (Bulgaria, Greece, Portugal, and Slovakia) reported higher education curricular units focusing on the use of ICT and/or Media. In general, initial teacher training curricular units usually last 1 or 2 semesters for the subjects related to ICT (ranging from 1st to 8th semester), the number of initial teachers training curricular units related to ICT in education varies between 1 and 3 curriculum units per program and the number of total ECTS of initial teacher training ranges from 60 to 180 ECTS.

It was possible to verify that the time and number of curricular units attended by future teachers in the initial teaching training during the university is different from country to country, ranging from 1 to 6 semesters, which highlights different perceptions of the importance of this theme.

In Germany, to become an ECE teacher one must attend a full-time vocational school for 2 up to 4 years. The curriculum at these schools differs from federal state to federal state. In most federal states, media education is a cross-sectional part of the curriculum. Also, Bulgaria reported an initial training course in higher education regarding media.

3.3.2. Teacher profiles

It became fundamental to understand the professional profiles of early child education identified in the different countries participating in this research.

Data collected indicated that Bulgaria, Germany, and Portugal have specific professional profiles of early child education teachers/educators, contrary to Greece and Bulgaria (Table 3).

In all five countries, teachers recognize the need for training in ICT and media education. Most countries (Bulgaria, Germany, Greece, Portugal, and Slovakia) have defined specific professional profiles for ECE teachers. Despite only in Germany and Portugal there are references to the use of ICT and/or media education in such professional profiles: Germany (Media literacy) and Portugal (Use of technologies).

In five European countries there are national ICT training programs, sometimes funded by the government, as can be seen in the summary table below (Table 4).

Regarding the professional development (PD) approach focusing on ICT and media education, in these countries there are national PD initiatives on ICT and media education, sometimes funded by the government and there are predefined specific areas for continuing PD and ICT use or media education and these are part of the proposed topics. There are government indications that recognize the importance of ICT use and media education in all countries, except Slovakia (Table 5).

Nevertheless, countries present some differences in terms of the areas valued, in Bulgaria, Greece, Portugal, and Slovakia, PD focuses on the use of technology in an educational context; however, in Germany, PD focuses on media education. In addition, teachers can select the topics for their PD in all countries and PD initiatives vary widely. In most countries, teachers are required to receive PD through accredited training to advance their careers (except in 4 Länder in Germany) and the mandatory PD time for career advancement varies across countries, from 16 to 100 hours.

The most significant differences between countries are about the entities that provide the PD and the type of initiatives developed: for one hand, in Bulgaria, Portugal, and Greece PD delivered by public entities is more frequent and on the other hand in Germany and Slovakia, PD is

Table 3. References to the use of ICT and/or media education in the profile of a child's education professional in Bulgaria, Germany, Greece, Portugal and Slovakia.

Country	Professional profiles of early childhood education teachers/ educators	Are there references to the use of ICT and/or media education in the profile of a child's education professional?
Bulgaria	*No*	*No*
Germany	*Yes*	*Yes*
Greece	*No*	*No*
Portugal	*Yes*	*Yes*
Slovakia	*Yes*	*No*

Table 4. ICT use and/or media education professional development (PD) initiatives in Bul- garia, Germany, Greece, Portugal and Slovakia.

Country	Main Initiatives	Main Training entity	Main area for professional development activities
Bulgaria	*Public*	*Government or municipal initiative*	*ICT education resources*
Germany	*Private*	*Associations*	*Media education*
Greece	*Public*	*Associations*	*Educational applications of ICT*
Portugal	*Public*	*Universities*	*Digital technologies and literacies*
Slovakia	*Private*	*Association*	*Use of ICT tools*

Table 5. Types of PD initiatives related to ICT use and media education in ECE settings in Bulgaria, Germany, Greece, Portugal and Slovakia.

	Types of PD initiatives related to ICT use and media education in ECE settings						
Country	Introductory courses	Advanced courses	Equipment-specific training	Courses on the pedagogical use of ICT in teaching and learning	Massive Open Online Courses (in your country language)	Webinars	Communities of practice with a special focus on ICT use and media education
Bulgaria	*X*			*X*			
Germany	*X*	*X*	*X*	*X*			
Greece	*X*	*X*		*X*	*X*	*X*	*X*
Portugal	*X*	*X*		*x*	*X*	*X*	*X*
Slovakia	*X*			*X*			

delivered mainly by private entities. Also, main types of PD initiatives include introductory courses in Bulgaria; advanced courses and modular training in Greece; equipment-specific training in Germany; and equipment-specific and modular training in Portugal and Slovakia. Ultimately, the duration of the training varies by country, usually between 3 and 50 hours.

3.3.3. Legal and Ethical guidelines

All European countries have common procedures to promote child online security and it's had laws related to ICT and media use by young children. There are still threats related to ICT and media use which must be considered. Nonetheless, Germany and Greece have pedagogical guidelines related to ICT and media use with young children.

We share two cases where the legal and ethical guidelines related to ICT and media use with young children are more evident:

Case of Germany

In the case of Germany, the main precautions to have ICT and media use with young children are: protect children and adolescents from media contents harmful to minors and existence of a List of Publications Harmful to Young Persons. The procedures that must be followed are request by youth authorities (youth welfare offices, ministries for youth affairs), the Commission for the Protection of Minors in the Media or at the urging of all other authorities (e.g., police authorities, customs offices, authorities for the protection of the Constitution or schools). The entities responsible for the protection of minors from the media in national level are: Protection of Young Persons Act (Jugendschutzgesetz - JuSchG) and Child and Youth Services Act (KJHG).

Case of Portugal

In the case of Portugal, the main precautions to have ICT and media use with young children are to protect the identity, access to data and rights related to the child. For this there are, among others, two laws: Data protection law, article 29 (Law no. 67/98, 26th October) and Law No. 15847/2007, published in the Second Series of Schools No. 140 of 23rd July; Order No. 1495/2016 of 6th September. The procedures that must be followed are request authorization from the Directorate-General for Education (DGE) to collect school-based surveys in preschool education; Inform and request authorization from the National Data Protection Commission on personal data; Requires authorization from the legal responsible of participating children to collect data (e.g., pictures, sounds, or video) in schools; Classification of rights and duties of participation in research projects. The entities responsible for the protection of minors from the media and exposure in ICT environments in national level are: National Commission for Data Protection; Directorate-General for Education (DGE) and Regulatory Entities for Social Communication.

3.3.4. Practices related to media education and ICT use in ECE across the Europe

European Research Findings on ICT and Media in Early Childhood and ECE are following from the analysis of scientific databases of articles and theses written in English or in the mother tongue with the keywords: "media education", "ICT", "ECE", "Kindergarten", "Technology" in articles or theses that evidenced practices related to media education and ICT use in ECE in several countries, having been performed the content analysis of these documents and synthesized the transversal practices common to all countries and that are described below. In all countries where the practices were analyzed that children (aged 3 to 6) often access technologies and media resources daily (e.g., television) for recreation purposes. Young children can play on tablets, watch, and select programs on television, and perform activities such as painting, listening to music, or watching videos.

Although, there are increasing concerns about health and well-being of children due to exposure to technology and screens from an early age. In general, parents and teachers recognize both advantages (e.g., cognitive, language, motor development) and risks of technological devices and media in the preschool age. Teachers, also, recognize children's abilities to use ICT and media in a guided way and highlight these resources as motivational.

The use of the media and ICT in family context are often used as babysitter, reward, or punishment. Families with children between the ages of 3 and 5 have more game consoles, tablets, and televisions than families without children. Parents do not always feel able to mediate and take position on media use by their children. To clarify, parents claim to need more information about media and ICT to help them cope with the grow- ing concern about problematic digital media overuse. children's preferences at this age are the use of the tablet and watching television, but television channels or movies preferred by children vary across gender and age.

In turn, ECE teachers report a positive perspective on the use of ICT and media and they refer to some constraints on children's use of ICT in ECE, namely: lack of resources, insufficient teacher skills, and variety of demands, knowledge, and skills of children. However, ECE teachers report the following uses of ICT: planning activities, creating own materials, adapting resources, documenting children´s progress and evaluating activities, preparation of worksheets, accessing platforms (e.g., Moodle), accessing learning resources, and communicating with parents. Moreover, types of ICT and media activities involving young children include: creation and production of digital narratives (e.g., Audacity and Movie Maker); using programs (e.g., Scratch); drawings; subject-oriented research; viewing videos on YouTube; taking photos, making audio or video recordings; sharing activities with parents (e.g., through blogs, Facebook pages, or school webpage).

The national and European educational policies are influential factors in ECEC educational practices and enriching the learning environment and learning process. "Technology and interactive media are here to stay, and several policy frameworks have been developed in place for digital and online learning" (Shapiro et al., 2016, p. 8). Also, some aspects related to teachers such as their vision and objectives, curriculum, available time, their pedagogical, technological, and content skills, assessment knowledge and skills, ICT and pedagogical resources, ICT resources at home as well as the vision and support of parents and family can influence the development of pedagogical activities in ECEC.

ICT and media create learning opportunities for collaborative inquiry, peer assessment, project development, use of e-portfolios and media productions that will enhance the development of outcomes in the child with the stimulation of critical thinking, communication, collaboration, progressive self-directed learning and the development of digital literacy (Fraillon et al., 2015).

3.4. European opportunities and challenges associated with ICT use and media education in ECE

Next, the government initiatives in the area of media and ICT in ECE will be summable and the challenges, opportunities and needs identified by the partners of this project after consulting European documents, curriculum guidelines, articles and theses in the area and joint discussion to find consensual ideas among all partners of the kit@ project. European governments' initiatives prioritizing ICT and media related topics in ECE, recognizing that media and ICT can enrich children's learning, in articulation with other educational areas. Consequently, it has allowed the allocation of funding for the development of projects across European countries, supporting partnerships and increase the offer of teacher training opportunities to support the growing number of professional learning communities. It is also evident the encouragement of

change in national curricula and design of guidelines for supporting ICT use and media education.

European challenges have been placed, in particular: a) limited time to explore ICT and media in ECE; b) sometimes, few resources or resources in bad conditions; c) continuous ICT and media transformation; d) diversity in children´s ICT and media competences and e) teachers providing ICT and media education even though they are not "digital natives".

However, the policy and educational recommendations for the integration of ICT and media into Early Childhood Education has created European opportunities that are important to synthesize as: improvements in accessing ICT resources and the internet, where children and families are more familiar with technologies and teachers have more training in the use of ICT than in the past. In the same way, teachers and families recognize the importance of the use of ICT in educational contexts.

European needs have been identified. It highlights common policy orientations regarding ICT and media education in ECE and continued investments in projects for ECE and promoting training for ECE teachers in these areas. Finally, the definition of more strategies to promote family involvement in ECE (namely in Slovakia and Bulgaria) and support for the promotion of media literacy in children's lives.

4. Conclusions

Based on the international agency guidelines, research findings and the information collected in partners questionnaires, we analysed the early childhood education and care practices and educational policies across five European countries, and informed by theory and available empirical evidence, we propose the following main recommendations for national and European-level policy-makers and practitioners:

4.1. Attitudes and values

The development of attitudes and values is fundamental in the exploitation of ICT and Media in ECEC as collaboration and intention; respect for others and diversity; knowing and listening; recognition of reciprocal values and differences; the recognition of differences and the transparent use of ICT where children understand what is expected.

4.2. Activities

It is recommended that the use of ICT and media in early childhood education with children between the ages of 3 and 6 years when the activities are planned these should consider the different educational agents:

Child:
- *Attend the levels of development and learning of children in different areas (e.g., language, social and emotional, motor, cognitive).*
- *Ability to develop and understand the perspective of the child (and to give voice to the child)*
- *Ability to support and stimulate children (e. g, questioning, calming)*
- *Guiding the child's activities (e.g., setting goals), developing critical and reflective thinking, and critical thinking skills.*
- *Promote the development of vocabulary and various types of literacy (e.g., through books, media) and support the child's ability to express his/her ideas clearly.*

Families:
- *Promote articulation with the family in the development of synergies that promote a global and healthy development of the child (e.g., including discussion of mediation strategies for ICT use and media at home).*
- *Promote opportunities for professionals in ECEC for observation, reflection, planning, teamwork, and cooperation with parents.*

Teachers:
- *Promote the planning, monitoring, evaluation, and reflection of pedagogical practices in ECEC by the teachers in articulation with the children, families, and other educational community.*
- *Identify interests and competencies of children through the observation of the child's behavior and the valuation of his opinion.*
- *Involvement in local, national, or international communities that allow the sharing and evaluation of practices to continuously support activities developed with children.*
- *Accomplish pedagogical continues and systematic update on education in early childhood education and specific, for example in education using ICT or the media.*
- *Promoting a positive environment within the educational community.*
- *Promote educational management processes that involve coordination, superviion, and pedagogical participation among the various educational agents (teachers, parents, children).*

It is also essential that the use of these resources is: a) Intentional, meaningful, appropriate and effective for support and enrich children's' learning; b) Support learning through play; c) Promote a transversal and using cross-curricular of ICT and media; d) Plane real context and purpose use of ICT and media that takes into account the expected pedagogical learning; e) Give children control the interaction with ICT and media (e.g., construction of Digital Storytelling); f) Encourages creation, creativity, exploration and critical thinking; g) Reflecting the pedagogical vision of professionals and families regarding the objectives, activities and expected results; h) Promote partnership and emerging learnings; i) Organize the group in a diversified way including in small groups dialogue and sustainable strengths and progresses, and j) Involves parents with benefit in children's learning.

4.3. Families

It is also important to promote a good environment among the various elements of the educational community, especially through communication between child, family and ECE entity (e. g, teachers, staff). Thus, it seeks to promote the development of cooperation and social interaction among members of the educational community and to collaborate in the construction, implementation and evaluation of resources and projects. In the familiar context it is recommended to use the technological platform (e.g., blogs, Facebook groups) that bring families and caregivers of children into ECE.

4.4. Teachers

We recommend the potential increase of local, national and international initiatives to promote articulation and communication between professionals at ECEC to develop Professional Development, pedagogical innovation and cross-sectoral Initiatives activities.

It recommends promoting professional learning communities that share, collaborate, evaluate, and assess pedagogical practices to facilitate ECE peer coaching.

It is also recommended to develop of a greater offer of training for future and current teachers, especially at the level of ICT and media education in the context of early childhood education.

It recommends the promotion of professional learning communities that share, collaborate, evaluates, and assess pedagogical practices to facilitate ECE peer coaching. It is also recommended to develop a more significant offer of training for future and current teachers, especially at the level of ICT and media education in the context of early childhood education.

4.5. Policy

Finally, it is recommended to continue funding and promote partnerships between national and international governmental entities, encouraging the development of projects for sharing and training more qualified professionals in the use of ICT and media, and the developing guide resources in ECEC.

This study has highlighted the importance of knowing the different educational policies, curriculum systems, and practices in the ECE system. Finally, it was found that European countries with guidelines for media literacy and ICT use have high-quality practices in the ECE system for children's well-being and development.

Notes

1. This article was written based on the report: Araújo, C. L.; Aguiar, C.; Monteiro, L.; Boavida, T. State of the Art on Media Education, Information and Communication Technologies (ICT) use in early childhood education. Media competency training for ECEC professionals. Intellectual Output 1 (Part I) of Erasmus+ Project Kit@: Media competency training for professionals in day-care centers and comparable institutions in rural areas of Europe (2018).

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