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Media education in Finnish early childhood teacher education—A curricular analysis

Abstract

In this chapter, we discuss the results of the media education (ME) study focusing on Finnish early childhood teacher education curricula. The research interest evolved from a specific time in the history of Finnish early childhood education and care (ECEC): the first mandatory national core curriculum became effective in 2017 and it also included ME. How was the new teacher generation prepared for this new professional demand? We analysed the curricular texts and mandatory course literature of all seven Finnish university bachelor's degree programmes that provide teacher qualifications for ECEC, to answer the following research questions: 1) How was media education positioned in early childhood teacher education programmes' curricula during the academic year 2014–2015? 2) How did the media education related competencies articulated in the curricula fall into the common ECEC professional competence categories? The findings suggest that ME has been marginal topic in Finnish ECEC teacher education. Media education and information and communications technology (ICT) were mostly taught separately, which seems peculiar in today's media culture. Among the general ECEC professional competencies, contextual and pedagogical ones were emphasised, whereas

care competencies were neglected. Additionally, compulsory ME course literature was scarce and partly outdated. The findings raise the question of whether it is possible to expect high-quality media pedagogies from practitioners with little professional training on the topic. We conclude by providing implications for teacher education.

Key words: media education, information and communications technology, early childhood education, teacher education, curriculum

University-level ECEC teacher education and the National Core Curriculum Guidelines for ECEC in Finland

According to the Finnish Act on ECEC (540/2018, section 26) the basic qualification criterion for the ECEC teacher is at least a bachelor's degree in education, which includes studies that give professional skills for tasks in ECEC. ECEC teacher education, with bachelor's and master's degree programmes offered, exists in seven Finnish universities[1]. At the bachelor's level, the education programmes consists of 180 European Transfer Credit System (ETCS) credits, including: 1) educational science as a major subject (75 credits), 2) studies providing professional skills for early childhood and preschool education (60 credits), 3) studies in minor subjects (25 credits) and 4) language and communication studies (20 credits). In addition, all the programmes' curriculum documents include descriptions of the educational objectives, the specific objectives, content, teaching methods and evaluation scale of the courses and the teaching material and literature used (Karila et al., 2013).

[1] It is also possible to graduate for a teaching position in ECEC with a degree from a university of applied science, but this practitioner's title is, according to the Act on ECEC (540/2018, section 27), social pedagogue in ECEC. Additionally, since only university degrees provide qualifications to work as a teacher in whole ECEC (including pre-primary education), this study focuses on university-level teacher education.

The contents of the studies vary from one university to another since universities have the academic freedom of choosing the contents and methods of teaching. Legally, according to the Universities Act (558/2009), all universities providing ECEC teacher qualification are under the remit of the Ministry of Education and Culture (MoEC). Overall planning, steering and supervision of ECEC are also the responsibility of the MoEC (540/2018, section 51). This includes support for developing professionals' education. To provide an example, the MoEC has appointed a development forum of ECEC professional education programmes for the years 2019–2020 (MoEC, 2019). The national core curriculum guidelines are prepared by the Finnish Agency for Education (FNAfE), a governmental agency subordinate to the MoEC, in cooperative processes involving academia and other stakeholders. The national ECEC curricula have been, for the first time, normative in their nature: they have been in effect since 2016 in pre-primary education and since 2017 in all ECEC. ME has a clear position in the curricula. According to the core curriculum for ECEC, the objective of ME is to support children's opportunities to be active and to express themselves in their communities. ME pedagogy is discussed as such, and media literacy is also included as part of a cross-curricular transversal competence area of 'multiliteracy'. Children are to be familiarised with different types of media and they must have opportunities to experiment with and produce media in a playful manner in a safe environment. ICT and its importance in everyday life is observed with children. Media content related to children's lives and its veracity are reflected with children to support the emergent media criticism. Playing, drawing and drama are named as examples of child-centred methods for exploring media-related themes. Whereas the curricula are not setting any measurable learning objectives for children, they establish an obligatory framework for education providers (FNAfE, 2018).

Media education as a part of professional ECEC

ME has been conceptualised in several ways in the research literature (Palsa & Ruokamo, 2015). A rough division can be made between conceptions that consider teaching *with* media as ME and conceptions that consider teaching *about* media as ME (Buckingham, 2015). Our definition draws from the latter viewpoint, inspired by Kupiainen and Sintonen (2009), who described ME as a 'goal-oriented interaction involving the educator, the learner and media culture. The outcome of this process is media literacy' (p. 31).

As the concept of media culture also includes values, cultures, tastes and relationships related to media, in this interpretation media are not approached only as devices and applications one should master. Accordingly, the use of the term 'media literacy' connotes a humanistic conception (Buckingham, 2015) that includes critical thinking as well as ethics, self-expression and cultural and social dispositions in the context of media culture (Kupiainen & Sintonen, 2009), alongside operational skills and the ability to use media devices (Marsh, 2017).

The use of the term 'media culture' also emphasises that ME needs to acknowledge the context where it is being conducted. To draw on Palsa and Ruokamo (2015), contextualisation clarifies the meaning and purposes of multidimensional media literacy, thus allowing it to be meaningfully promoted in practice. Hence when developing early years' ME, it is important to ensure that a strong connection is created between the common educational objectives and principles of ECEC and ME (Salomaa & Mertala, 2019). This applies also to the core competencies required from teachers. Consequently, ECEC teachers' ME competencies refer to abilities to recognise how media culture intertwines with different dimensions of ECEC as well as to the practical capability to operationalise these notions into meaningful pedagogical activities in ECEC.

Karila and Nummenmaa (2001; see also Karila, 2008) have defined the central knowledge and competency areas and the core competencies for ECEC as follows: 1) *Contexts of ECEC*—this competence area includes awareness of the societal and cultural environment of ECEC, such as understanding families' everyday lives or the normative frameworks of institutional ECEC; 2) *ECEC, including educational, caring* and *pedagogical competencies*—here, education refers to a process through which an individual becomes both a functional member of society 'as is' and a unique subject who is able to criticise the prevalent societal structures and be an agent of change in his or her own right as he or she contributes to the development of a society that 'might be' (Biesta, et al., 2015, p. 634). Pedagogy, in turn, is about supporting children's learning of new knowledge and skills, and when approached as care, the task of ECEC is ensuring children's holistic wellbeing (Karila & Nummenmaa, 2001, pp. 31–32); 3) *Cooperation and interaction knowledge and competencies*—cooperation competencies are those that are needed for smooth collaboration between parents, other staff members and other key partners (Karila et al., 2017). Interaction competencies can be approached as sensitivity to children's efforts at interaction (Holkeri-Rinkinen, 2009, p. 228) as well as the ability to interact with children using various and multimodal forms of expression (i.e. verbal interaction or gestures; Ledin & Samuelsson, 2017); and 4) *Continuous development, including reflective competencies* and *knowledge management* —reflective competencies refer to the ability to evaluate one's own work, whereas knowledge management is about skills related to retrieving and processing knowledge in a critical manner (Karila et al., 2017).

When integrated with ME perspective, contextual competence could mean, for example, that a teacher understands media culture as one of the meaningful lifeworlds of children, whereas competencies in caring could refer to knowledge about audio-visual

media's age restrictions (psychological and emotional wellbeing) and ergonomic ways of using digital media (physical wellbeing), to provide some examples.

Based on a survey conducted in 2007, only a small minority of ECEC professionals had studied ME as a part of their pre-service education; however, ME had been a part of university studies more frequently in the 2000s than in the 1990s (Suoninen, 2008). Regardless of this development, the inadequacy of ME teaching in ECEC degree programmes has been recognised again in the 2010s via quality assessments (Karila et al., 2013) and a student survey (Salomaa, Palsa, & Malinen, 2017). However, there have been no previous studies into how ME has been positioned in Finnish ECEC teacher education curricula.

Research design

When conducting research on curriculum, it is essential to distinguish the written, intended curriculum from the implemented curriculum. Whereas written curriculum describes the intended and the desirable, the implemented curriculum is a result of teachers' interpretation of the written curriculum. The third aspect is the learnt curriculum—the knowledge and competences that students achieve via education (Luoto & Lappalainen, 2006, pp. 14–15). This study focused on official written curricular documents, whereas in the present chapter we adapt Levin's (2008, p. 8) definition of the written curriculum as 'an official statement of what students are expected to know and be able to do'. The official teacher education curriculum can be seen as providing a perspective on the central aims and the image of the ideal teacher (Krzywacki, 2009, p. 102).

When scrutinising the results, it is vital to remember that a study on concise curricular texts cannot reveal the implemented, actualised contents of teaching and it can reveal still less about what has been learnt. We are aware of such ME course design and teaching practises that have taken place (e.g. Mertala, 2020), but would remain invisible in

curricular analysis. However, based on the findings reported in this study, such a course design would have been an outcome of an individual teacher's interest instead of curricular demands.

Data collection and analysis

The data consist of the curricular texts of seven Finnish early childhood teacher education bachelor's-level programmes. As our interest was to explore the education provided for the cohort entering the work field when the new core curriculum for ECEC became effective, the analysed curricula—collected from the universities' webpages—were chosen to be those effective during the academic year of 2014–2015. Even though teacher education curricula are subject to change every few years, students mainly study according to the curriculum they began their studies with.

We did not include master's degree curricula because it is not mandatory for qualification as an ECEC teacher. We only studied the mandatory courses to determine what all the teacher candidates were supposed to be studying[2]. Altogether, 301 mandatory course descriptions were included in the data. Figure 1 summarises the data collection and analysis process of the study. A more detailed analysis description is offered below.

[2] It is also possible to study ME as minor subject or take individual voluntary courses on the topic. However, according to the survey conducted in 2017, only 7% of pre-service ECEC teachers had studied any non-mandatory ME courses (https://www.mediataitokoulu.fi/liiteselvitykseen/#2).

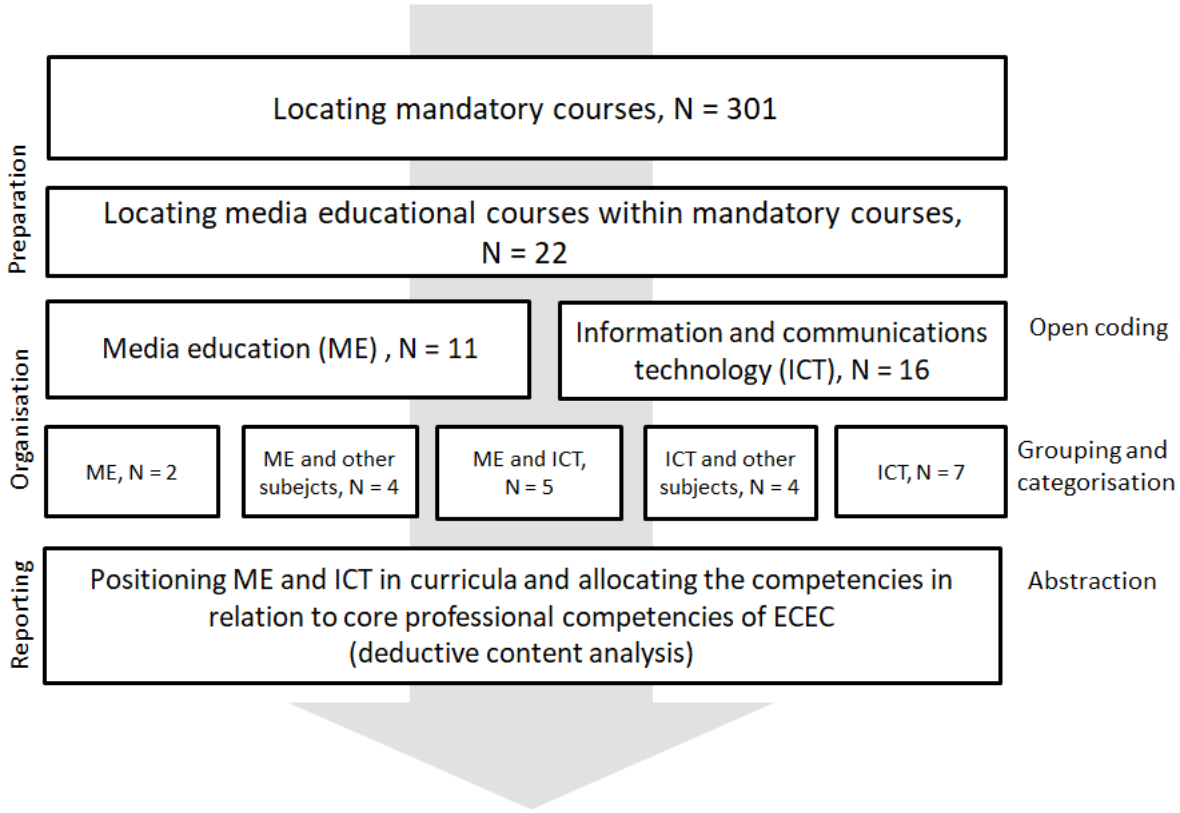

Figure 1. An overview of the data collection and analysis process[3]

The analysis followed the principles of qualitative content analysis (Elo & Kyngäs, 2008). In the *preparation* phase, the unit of analysis was defined to be the course description. Knowing that terminology within the field of ME is unsettled (Palsa & Ruokamo, 2015), we searched for terms explicitly or implicitly referring to ME. Examples of implicit references were 'media literacy', 'digital media', 'media culture' and 'information and communication technology'. It was not necessary for the course to focus only on ME—any reference was enough to merit further analysis. We found 22 courses containing ME headlines, goals and/or content. Some of these courses included mandatory reading that was also taken into consideration. To achieve a conceptual clarification through *organizing* the data, distinctions were made between observations.

[3] The distinction between media education and ICT in the open coding phase was done with respect to the nature of the data. Further details are provided in the first paragraph of the 'Findings and discussion' section.

In the *reporting* phase, we abstracted the categorisations to move further from the descriptive level of the organisation phase. The previous curricula analysis work conducted by Korhonen and Rantala (2007) was used as a categorisation matrix (Table 1) to describe the positions of ME and ICT in training programmes. The positioning described the depth and extent of the subject in the curricula.

Table 1: Categorisation matrix for curricular positions of ME and ICT (adapted from Korhonen & Rantala, 2007)

Position	**Description**
Visible	Subject is found in at least two different courses, either in the course name, or as goals or contents
Recognisable	Subject is the main topic of one specific course, or the subject is mentioned in at least two courses' goals and/or contents, among others
Traceable	Subject is mentioned only in one course's goals and/or contents among many other themes and/or included in the literature

Karila and Nummenmaa's (2001) description of central knowledge and competence areas, specifically the core competencies, provided the starting point for our analysis of the ME competencies. This definition was chosen for its continuous relevance for Finnish ECEC policies. It has, with only minor modifications, been recently included as part of the roadmap for the development process of the Finnish early childhood education system (Karila et al., 2017); this, in turn, formed a basis for the current development forum of ECEC professional education programmes (MoEC, 2019, 2). Furthermore, a competence description provides a lens to scrutinise the data from the perspective of the different targeted competences

expressed in curricular texts. We categorised and allocated the learning objectives explicated in the texts, answering the question, 'Is this core competence addressed in the text and how?' One course description could address several different competencies.

Findings and discussion

We present our findings in two subsections, the first of which focuses on how ME and ICT were positioned in the curricula. This distinction was made during the analysis phase since it became clear that course descriptions addressing ICT seldom mentioned media, considered ICT as a socio-cultural phenomenon or aimed to provide competencies to teach and learn about media. Instead, they focused on teaching other subjects with ICT or learning operational ICT skills. An illustrative example was a course on ICT in which attendance could be substituted with technical skills demonstrations. Given that the operational dimension is a fundamental part of media literacy (Marsh, 2017), we chose not to omit these courses from the analysis. Instead, we created two different categories—*ME* and *ICT*. The second subsection concentrates on the distribution of competencies in the curricula.

When interpreting these results, it is worth highlighting that even though the units of analysis are called 'ME/ICT courses' for clarity's sake, often the courses discussed the topics alongside several different subjects. As an example, in one course worth five ETCS credits, 'media culture' was mentioned alongside as many as 12 other content areas. Consequently, the targeted competencies were seldom connected only to ME/ICT content; they were more often presented as general learning objectives instead.

Positions of ME and ICT in curricula

Altogether, 22 of the 301 mandatory courses included ME/ICT themes. Eleven (11) courses included goals, content and/or literacy that paid specific attention to ME and 16 courses were

focused on ICT. Usually ME and ICT were discussed separately since only five (5) of the 22 analysed course descriptions included both ME and ICT goals, content or literature. Previous research has implied that ME terminology is seldom included in Finnish studies scrutinising ICT in education (Pekkala et al., 2013); this seems to mutually apply to universities' curricula.

Of the 16 ICT courses, seven (7) focused solely on ICT, whereas only two (2) of the 11 ME courses were solely devoted to media cultural issues. When integrated as a minor theme of the course, ME and ICT were parts of courses discussing a variety of different subjects, such as arts education, literacy education, societal issues and the pedagogical or systemic planning of ECEC.

The 22 course descriptions contributing to ME and/or ICT mentioned 29 mandatory books or articles. The total number of reading materials was higher, but we only analysed the ones obligatory for all students. However, a closer look into the literature revealed that only four (4) of the 29 mandatory pieces of literature discussed media-related issues even as a subtheme. Additionally, two of the four books discussing children's media usage and ME were from the 1990s. It is worth mentioning that all analysed reading materials were from ME or ME/ICT courses. None of the courses focusing solely on ICT included any required, specified course literature. One possible reason for the scarcity of mandatory reading was that the lecturer had the academic freedom to choose the course literature. This, however, does not explain why, in some cases, students were required to read books in which the media cultural landscape was outdated. For example, one book from 1990s discussed pedagogical use of VHS tapes.

The position of ME and ICT in Finnish ECEC teacher training varied significantly between the curricula. The position of ME was recognisable in four curricula and traceable in two curricula. The visible position was found in one curriculum. The most common position

for ICT was visible, in four curricula. In the three remaining curricula, ICT was in a recognised position. The difference between the positions is partly explained by our inclusion of three basic, operational ICT courses in the data.

Targeted competencies in ME and ICT courses

In order to study the targeted ME and ICT competencies of ECEC teacher candidates, we scrutinised the curricular texts of ME and ICT courses from the viewpoint of common categories of ECEC professional competencies (Karila & Nummenmaa, 2001; see also Karila, 2008). The objective was to investigate whether the curricula aimed to provide students with the same kind of competencies within ME/ICT courses that are considered important in ECEC in general. Table 2 summarises the distribution of the eight core competencies of ECEC. As can be seen, pedagogical and contextual competencies were strongly emphasised, whereas competencies in caring were not regarded in any of the course descriptions. A more detailed account of the course contents is provided below.

Table 2: Early childhood education competencies addressed in curricula texts of ME and ICT course descriptions

Central knowledge and competence areas	**Core competencies**	**ME**	**ICT**
Contexts of early childhood education	Contextual competencies	10	12
Early childhood education	Educational competencies	2	1
	Competencies in caring	-	-
	Pedagogical competencies	9	11

Cooperation and interaction	Interaction competencies	1	2
	Cooperation competencies	4	5
Continuous development	Reflective competencies	4	6
	Knowledge management	2	8

The competencies targeted most often in ME course descriptions were *contextual competencies*, addressed in 22 courses. An example of data addressing contextual competencies is: 'the student will gain information about … children's own culture and the impacts of media on childhood' (University1).

Competencies related to teaching and fostering learning, *pedagogy*, were addressed in a total of 20 course descriptions. The following learning goal was set in courses addressing pedagogical competencies: 'students have gained knowledge of how different media can be used to stimulate and promote children's learning' (University7).

Reflective competencies and *knowledge management* competencies were both targeted in ten course descriptions. Regarding reflective competencies, one course stated that the 'student is able to utilise ICT and reflect on one's own working and learning' (University2). As a knowledge management-related goal, one course description aimed that 'the student masters the basics of information retrieval' (University3).

Cooperation competencies were addressed in nine courses. In one course description, the cooperation-related learning goal was framed as teamwork: '[the student] can utilise ICT in individual work and community-based teamwork' (University4).

Competencies for *education* and *interaction* were both targeted in three course descriptions. An example of educational goal setting can be found in the following description: ' … the student will gain understanding of … art as a language of education and is able to apply art and cultural practices as producers of joy and prosperity and as a promoter

of intellectual development' (University2). Interaction can be found in the following: '[the student] knows how to promote children's language development and to prevent linguistic problems with both the means of verbal and non-verbal interaction' (University6). The last two data excerpts also illustrate how ME competencies were often not specifically mentioned as learning goals in courses that included ME content; instead, only more general learning goals were set.

The strong emphasis on contextual and pedagogical competencies appears logical in teacher training; this, however, is not the case with the shortage of educational competencies. This competence area only appeared in two ME course descriptions and one ICT course, which was surprising for a programme providing a bachelor's degree in education. This might be partly explained by the structure of the curricula as only three of the analysed courses were offered as part of the education sciences (master's subject studies); of these three, two course descriptions targeted educational competencies. The rest of the courses were located either in professional skills studies or communication studies, and among these 19 course descriptions, only one targeted educational competency.

Another problematic notion was the absence of competencies in care (e.g. discussing and fostering children's wellbeing in relation to media). On the one hand, it can be argued that in multi-professional working communities of ECEC the competencies in care would be the responsibility of childminders instead of teachers. On the other hand, there is a body of research indicating that care is an indistinguishable part of being (and becoming) a teacher (Kemp & Reupert, 2012; O'Connor, 2008). Care—alongside teaching and education—is one of the cornerstones of the Nordic model of ECEC (Karila, 2012). Previous research also suggests that Finnish pre-service ECEC teachers' concerns regarding ICT use and ME are predominantly care-related; they believe that children's physical and mental health are endangered by media and technology. These anxieties are associated with beliefs about

children's use of ICT at home being extensive and unregulated, and pre-service teachers have expressed mainly negative attitudes towards parents' capabilities in child rearing in relation to digital technologies (Mertala, 2019a). As these exaggerated beliefs are not supported by empirical research on Finnish children's media and technology use (Chaudron, 2015; Suoninen, 2014), they form a rather uninformed and negative basis for ME. Thus, it can justifiably be argued that teacher education should aim to provide teacher candidates with research-based information about children's wellbeing and media as well as how to enhance critical self-reflection, in order to challenge anytheir (negative) preconceptions. Botturi (2019), for example, has reported pre-service teachers' attitudes shifting from purely protective towards more comprehensive critical literacy after studying a digital and media literacy course. However as only a few of the analysed course descriptions in the present study included goals or content providing competencies for reflection, cooperation and interaction, it is questionable whether these issues were at all addressed in relation to ME and ICT. This is also in contrast to the expectations of practising equal and respectful educational cooperation with parents (FNAfE, 2018; MoEC, 2013).

An additional interesting finding is that practising ME and ICT with children during the studies was seldom mentioned in the curricular texts. The analysed course descriptions did not include projects to be conducted with children, nor were these subjects explicitly included as part of the internship periods' descriptions. Three courses linked to internships were all courses in which ME/ICT held minor positions (e.g. were included only in pieces of course literature). Similarly, in Germany, Friedrichs-Liesenkötter (2015) identified a shortage of possibilities for students to develop their ME competencies with children and considered it a problem for professional development. In contrast, in Norway the pre-school teacher education curriculum expected students to design working methods for using digital media in children's groups (Bølgan, 2012). The literature also identifies cases in which popular media

culture and kindergarten projects were integrated in early years education courses (Mertala, 2020; Souto-Manning & Price-Dennis, 2012). We argue that these integrative approaches would align with the holistic nature of the pedagogy of ECEC.

Conclusions

This study used curricular analysis to explore how ME has been included in Finnish ECEC teacher education programmes during the academic year 2014–2015. An additional research interest was to study how these contents were aligned with the framework outlined by Karila and Nummenmaa (2001) for the general core competencies of ECEC professionals. This part of the study underlines the importance of a holistic approach in developing ME competencies for ECEC. Curriculum design is not only about *how much* but very much about *what* and *how*.

The analysis revealed that ME and ICT have been parts of all Finnish university-level ECEC teacher education curricula during the years just before the first mandatory ECEC curriculum. However, the position of ME and ICT as well as the competencies targeted in curricula, varied between universities. Hence, the newly graduating ECEC professionals have potentially had very different levels and understanding of ME competencies when entering the work field in which they were, for the first time, equally obligated to carry out ME with children.

ICT and especially ME appeared as relatively marginal contents of studies. ME was in a visible position in only one curriculum. ICT was in a visible position in four curricula. Based on our analysis, pedagogical and contextual competencies were highly emphasised in course descriptions. Whilst they are both crucial in the teaching profession, more balanced and versatile perspectives could be beneficial in building ECEC professionalism and consciousness about the goals, value basis and prerequisites of education and educational cooperation. Based on both empirical research on children's everyday lives (e.g. Chaudron,

2015) and the Finnish ECEC curriculum, media literacy and ICT skills are not just entities to be taught about or with, but are ultimately related to 21st-century interaction, societal issues, everyday practices and human growth.

The finding that no course description included practicing ME with children casts doubts on the level of concreteness of the pedagogical competence provided. This, combined with marginal positioning and merging with other subjects, can explain why only 51% of pre-service early childhood teachers have reported that ME (ICT included) appeared in their mandatory studies—even though it should have been provided for all (Salomaa et al., 2017). However, the findings of the present study also question the theoretical depth of ME and ICT courses: the reading materials were sparse and the ICT courses contained no specified mandatory reading. The risk of such a superficial approach is that students are learning quickly outdated technological tricks instead of adaptive competences. Whist we recognise that low technological self-efficacy builds barriers to ME (Kupiainen, Niinistö, Pohjola, & Kotilainen 2006), operational competence is not a guarantee of pedagogically justified practices if the decisions of why and how to implement digital media in early childhood education are built on uninformed grounds.

Implications for teacher education

The present study indicates that while Finland is often used as a 'showpiece country' of ME in international comparisons (Tomljenović, 2019; Brogi et al., 2016), there is already a need to provide in-service training for those ECEC teachers' cohorts that have graduated quite recently. Additionally, it is at least equally needed for previously graduated cohorts whose studies seem to have included even less ME. That said, we understand that the mere addition of ME content in pre-service teacher education curricula would be an oversimplified answer

to a complex question. In a constantly changing media culture, professional ME competency building can be seen as a career-long endeavour.

One way to strengthen the role of ME within the existing framework of pre-service teacher education and also in in-service training would be to dispense with the dichotomic stance of providing ICT courses and ME courses separately. As Kotilainen and Ruokamo (2017, p. 39) argued, the conceptual boundaries between ICT and media literacy are artificial as, in the end, the core of both is a pedagogical perspective on technology-mediated interaction between human beings. Also, Buckingham (2015) has argued that digital media can no longer be regarded simply as matters of 'information' or 'technology', but must be seen as cultural forms. Thus, any form of digital media should neither be regarded as a neutral means of delivering information nor used in a merely functional or instrumental way. Furthermore, 'education *about* the media should be seen as an indispensable prerequisite for education *with* or *through* the media' (Buckingham, 2015, p. 21 [italics original]).

Consequently, including ME perspectives in ICT courses (and vice versa) would, to paraphrase Buckingham (2015, p. 21), develop more effective connections between children's/pre-service teachers' experiences of technology outside of kindergarten/university and their experiences in the classroom. Such a symbiotic and inclusive approach is indeed much closer to how young children conceptualise ICT and media culture. Children, for example, do not approach computers as information technology or as a didactic tool, but as one way of carrying out media cultural interests and preferences (Mertala 2016). However, the potential sparks for child-initiated ME pedagogies may remain neglected if the teachers have not learned to carry out ME from a wider educational perspective or are not even aware of either their educational value or children's digital media cultures and interests.

We, in turn, are aware that universities' curricula can be seen as 'dynamic force fields' (Luoto & Lappalainen 2006, 14). In these fields, traditional and several new contents,

such as ME, multiculturalism or sustainable development are competing to gain visibility in space framed by degree programmes' limited boundaries. If the subject is not visibly and widely included in the curriculum, there is a risk each time that the subject can fade away when the contents of the curriculum are negotiated (Korhonen & Rantala, 2007, p. 457–458). Consequently, there is a recognised need for strengthening the position of ME in Finnish teacher education curricula.

It could also be beneficial to invest in course design. This could, in practice, mean ensuring that compulsory reading would be up-to-date and that all ME courses would also include explicit ME learning goals. Additionally, already existing ME content may need more visibility in teacher education. Our main concern is that ME as a cross-curricular subject can be invisible to pre-service teachers if the scattered incentives of developing ME competencies are not meaningfully explicated and connected as multi-dimensional learning paths.

It is also worth noticing when designing in-service courses, that while ECEC professionals' inadequate digital competencies are often discussed in public (e.g. Gillen et al. 2018), they still may have received significantly more initial education for operational ICT competencies than for culturally orientated ME or theoretical understanding of ICT pedagogies.

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