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Home-school communication on children's digital skills development: Based on interviews with experts from the education sector

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Work Package 3 – Deliverable 3.2

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Executive summary

The ySKILLS project seeks to better understand which skills 12- to 17-year-olds must obtain to knowingly and critically use Information and Communication Technology (ICT) for their wellbeing, education and social life, and to improve existing knowledge about how children and youth can build resilience against negative impacts. This report is part of the Work Package 3 'Digital Skills: Actors and Factors' and aims to contribute a deeper knowledge of home-school collaboration in developing digital skills. Within the framework of WP3, 34 in-depth interviews with experts from the education sector and the labour market were carried out in Estonia, Finland, Germany, Italy, Poland and Portugal, with the aim of getting a deeper understanding of (1) the (digital) skills that youth need in the 21st century, and (2) the role of digital skills education, both in formal (e.g. the school) and informal learning settings (see Deliverable 3.1 by Donoso et al., 2020). This report is based on 20 interviews with education sector experts: teachers and headmasters; researchers, lecturers and professors; education specialists and policy makers – who were part of the whole sample of 34 experts from six European countries as mentioned above.

This report provides insights into the opinions and views of education experts on the most relevant problems in the collaboration and communication process between homes and schools that should be discussed, acknowledged and dealt with, in order to foster cooperation instead of confrontation. As a result of their professional and personal experience, the participating experts were able to provide deep insights into the complexities of home-school communication and explain what (side) effects these have on young people's digital skills. Their views are, therefore, a valuable resource providing evidence-based recommendations and strategies for key stakeholder groups to promote closer partnership between home and school, in order to support children's better communication and digital skills and wellbeing.

Many of the interviewed experts highlighted that despite the fact that digital skills have increasingly become an integral part of people's lives, there are still many shortcomings in aspects of communication between home and school. As the interviews were carried out in April and May 2020, amidst the first wave of the COVID-19 pandemic in Europe, many of the interviewees reflected on how this crisis and the consequent 'social distancing' had impacted education and home-school communication, when, all of a sudden, learning and working had become essentially digital. Several experts noted that this crisis has exemplified how unequally prepared and equipped families are to benefit from the distance learning that was put in place during the period of restrictions.

The ySKILLS project

Youth Skills (ySKILLS) is a large international research project whose aim is to understand what kinds of skills are needed among children and youth so that the long-term positive impact of the digital environment can be maximised.

ySKILLS starts from the observation that digitisation is changing society and requires a new set of digital skills, which many children and adolescents in Europe currently do not master. This can negatively affect their educational, informational, and social inclusion and wellbeing. Longitudinal and robust academic research on the digital practices of children and adolescents, related contexts and the overall impact is lacking at both national and European levels. Against this background, and considering children as active agents in their own development, ySKILLS examines both the risks and opportunities related to the ICT practices of children and adolescents (aged 12 to 17) as well as their digital skills in understanding how to purposefully use ICTs towards greater cognitive, physical, psychological and social wellbeing. The project will provide recommendations for strategies that can be used by children, parents, schools, and people working with and for children to develop skills that will maximise positive opportunities and minimise the risk of harm.

ySKILLS seeks to identify which factors protect children from the risks and negative impacts, but also to understand the potential of digital skills as a strategy to boost the resilience of children, and study the link between digital skills and children's wellbeing.

> *The overarching aim of ySKILLS*
>
> *To enhance and maximise the long-term positive impact of the ICT environment on multiple aspects of wellbeing for all children by stimulating resilience through the enhancement of digital skills.*

In order to reach its overarching aim, ySKILLS addresses four research objectives:

> *ySKILLS' research objectives*
>
> 1. *To acquire extensive knowledge and better measurement of digital skills.*
>
> 2. *To develop and test an innovative, evidence-based explanatory and foresight model predicting the complex impacts of ICT use and digital skills on children's cognitive, physical, psychological and social wellbeing.*
>
> 3. *To explain how at-risk children (as regards their mental health, ethnic or cultural origin, socioeconomic status and gender) can benefit from online opportunities despite their risk factors (material, social, psychological).*
>
> 4. *To generate insightful evidence-based recommendations and strategies for key stakeholder groups in order to promote European children's digital skills and wellbeing.*

Based on expert views and insights, and proposing recommendations and strategies for key stakeholder groups to promote digital skills and wellbeing, this report helps to achieve ySKILLS' Objectives 1 and 4 within the framework of Work Package 3 'Digital Skills: Actors and Factors'. Furthermore, the expert insights provide valuable knowledge that can help to improve the measurement of digital skills.

1. The Report

The ySKILLS project aims to better understand which skills 12- to 17-year-olds must obtain to knowingly and critically use ICTs for their wellbeing, education and social life, and to improve existing knowledge about how children and youth can build resilience against negative impacts. Against this backdrop, the report pursues the objective of contributing to a deeper knowledge of the cooperation and interaction between home and school, what skills are needed in the education system, how these should be developed, and how home and school can support children and young people in becoming skilled and literate agents in social practice. To this end, 34 interviews (**20 with experts from the education sector** and 14 with experts from the labour market) were conducted in six European countries: Estonia, Finland, Germany, Italy, Poland and Portugal. The "Report on interviews with experts on digital skills in schools and on the labour market" (Donoso et al., 2020) provides an extended analysis of the digital skills needed by young people in order to get by in school and on the labour market now and in the future, while this report presents the results of the analysis of interviews with experts from the education sector, which provides a deeper and more nuanced analysis of issues related to home-school communication (see Table 3 for the list of topics and themes covered in this report).

As revealed in this report, many of the experts interviewed have witnessed first-hand the impact of digital technologies in the lives of young people either because of their professional or personal experience (e.g. as teachers or even, in some cases, as parents themselves). Their views are, therefore, valuable in helping ySKILLS reach its overarching aims.

This report provides an insight into the **opinions and views of education experts on the most relevant problems in the process of cooperating and communicating between homes and schools** that should be discussed, acknowledged and dealt with, in order to foster cooperation instead of confrontation. In the coming sections, education experts share their views about home-school communication on digital skills. They also reflect on how the COVID-19 crisis may have affected communications between home and school.

The introductory section addresses several key topics including terminological clarity, modes of communication and interaction, and barriers and difficulties in developing home-school collaboration. We then outline the methodology of the conducted study, and present the results of the expert interviews. Based on the results of the analysis, we provide some final reflections and a list of recommendations for various stakeholders involved in the development of digital skills in children and young people.

2. Background

The literature from recent decades suggests that home-school cooperation has a positive effect on children's development and academic progress (Ames, 1993; Archer, 2010; Englund et al., 2004; Epstein & Becker, 1982; Epstein & Dauber, 1991; Epstein & Sanders, 2006; Markström, 2010, 2011; Patrikakou, 1997; Tomlinson, 2017; Tveit, 2009a, 2009b, 2014). Effective communication is an important aspect of home-school cooperation (Desforges & Abouchaar, 2003). However, there is hardly any literature on home-school communication focusing on children's digital skills development. This report aims to start filling this gap.

2.1. Terminological inconsistency

A wide variety of terms is used in the literature to describe relationships between homes and schools, including teacher-parent communication (Ankrum, 2016; Palts & Kalmus, 2015), parent involvement (Barr & Saltmarsh, 2014; Desforges & Abouchaar, 2003; Hill & Craft, 2003; Lee & Bowen, 2006; McDowall et al., 2017; McWayne et al., 2004), parent engagement (Barr & Saltmarsh, 2014; Barton et al., 2004; Desforges & Abouchaar, 2003) and family/parent-school partnerships (Barr & Saltmarsh, 2014; Raftery et al., 2012; Reschly & Christenson, 2012). All of these terms carry different connotations. In the interview context, the participating experts often used similar terms; however, rather loosely and without further precision of the particular meaning and nuances of every term. This results in some terminological inconsistency in the quotes and their interpretation throughout this report.

In addition, approaches to naming the parties of the cooperation vary in the scholarly literature: some authors write about home-school relationships (e.g. Desforges & Abouschaar, 2003; Hirsto, 2010; Hughes & Greenhoug, 2006) whereas others address family-school relationships (e.g. Hill & Tyson, 2009; Jeynes, 2007; Sheldon, 2003) or parent-teacher relationships (Ankrum, 2016; Aslan, 2016; Palts, 2019; Markström, 2011; Tomlinson, 2017; Tveit, 2009a, 2009b, 2014). In this report, we choose to focus mainly on home-school or family-school relationships as such a wording does not exclude any types of family arrangements. However, the experts in our interviews referred mostly to parents as the main communication partners for schools.

2.2. Different modes of home-school communication

Previous research from the 1990s shows a somewhat different approach to the sufficiency of school and home interactions compared with more recent views; namely, providing information about children's (academic) development has been the main effort that the parents have expected from the school (Epstein & Dauber, 1991). More current studies acknowledge that parents (or caregivers) can (and should) be involved in the school life of children in different ways and to varying degrees (Epstein, 2001; McDowall et al., 2017; Menheere & Hooge, 2010; Patall et al., 2008). The most common practice is to exchange information with school staff (Dimock, O'Donoghue & Robb, 1996; Unal & Unal, 2014). In addition, being involved by participating in parent committees (Epstein, 2001), taking part in school events (Dimock et al., 1996; Smit et al., 2007), volunteering for schools (Dimock et al., 1996), or helping children with homework (Dimock et al., 1996; Unal & Unal, 2014) appear to be common forms of involvement.

Santamaría Graff and Sherman (2020) suggest that the mode of home-school communication depends on how learning is understood by educators themselves. Accordingly, the educators who see learning

through the lens of behavioural theory define communicating and working with families differently to those who prefer sociocultural or critical theories of learning. Depending on these theoretical lenses, parents can be defined as a) passive recipients of knowledge (common to the behaviourist approach), b) contributors to knowledge (sociocultural approach), or c) as knowledge-makers (critical approach). Based on these theoretical roots, Santamaría Graff and Sherman (2020) differentiate three models of school-family relations: traditional, relational, and transformative models.

Following the traditional model (a behaviourist approach), home involvement is bound to comply with school recommendations, attending parent-teacher conferences or behavioural meetings, and volunteering time or money (Santamaría Graff & Sherman, 2020). Parents can also remain detached from schooling (Santamaría Graff & Sherman, 2020). According to the relational model (a sociocultural approach), the focus is on establishing meaningful dialogue with decision makers (e.g. school management) in less-hierarchical forums (Fenton, Ocasio-Stoutenburg & Harry, 2017; Santamaría Graff & Sherman, 2020). Following the transformative model (a critical approach), the purpose is to challenge socioeconomic and ethnic inequalities that may be prone to disadvantage pupils from families with migration background or low socioeconomic status (Santamaría Graff & Sherman, 2020).

However, it has been pointed out in several works (Hill & Craft, 2003; Newman & Chin, 2003; Santamaría Graff & Sherman, 2020) that given the dominance of the traditional model (behaviourist approach), the home-school relationship has often meant attempts by the school to involve parents in school-centred practices. These practices should promote student performance in academic tests. The differences resulting from socioeconomic standing, ethnic background, parent education, and other factors, remain a background issue. The performance-centred engagement strategy includes communicating regularly through written communication and feedback, phone calls, digital communication, or face-to-face meetings, attending school meetings, and assisting the child with schoolwork (Lee & Bowen, 2006; Palts & Kalmus, 2015; Santamaría Graff & Sherman, 2020). Therefore, it is the type of involvement where schools mainly initiate the communication and the parents' responsibility is limited to responding to school feedback (Barton et al., 2004).

2.3. Barriers of home-school communication

According to previous research, home-school collaboration is crucial as it improves the academic achievements of all pupils, including those with lower socioeconomic background (Redding et al., 2004). However, at the same time, home-school communication can be hindered by several barriers, such as families' low socioeconomic status (Hornby & Blackwell, 2018; Lareau & Horvat, 1999; Lewis & Foreman, 2008) and their limited cultural and social capital (Lareau & Horvat, 1999; Lee & Bowen, 2006).

For example, Lareau (1987) studied the relationship between social class and home-school relationships and found that differences in cultural, social, and economic capital may influence parental involvement. The findings showed that parents with lower levels of education, who doubt their ability to help their children with school tasks may avoid communicating with the school (personnel). The engagement of parents in a dialogue may be time-consuming and challenging for teachers. Empirical research has demonstrated that teachers experience difficulties reaching out to some families (Macklem, 2014). As a result, these families may escape the home-school communication (Macklem, 2014). Quite often families who tend to avoid communicating with a school live in poor communities, some may lack the skills to help their children with school tasks and to seek help (Macklem, 2014).

Another issue in the literature concerns teachers' communication and cooperation skills that also vary to a great extent. As several authors claim (Brown et al., 2014; Flynn & Nolan, 2008), not all teachers are proficient in creating effective home-school communication and parent involvement. Therefore, there is a need for teacher training and professional development in communication competence (Brown et al., 2014; Flynn & Nolan, 2008; Symeou et al., 2012; Visković & Jevtić, 2017).

2.4. ICT in home-school communications

Over the last twenty years, ICT have been widely used in home-school communications (Lee et al., 2011; Olmstead, 2013; Tidwell & Walther, 2002). This development has pros and cons. On the one hand, the use of ICT solutions speeds up information exchange between home and school (Lee et al., 2011; Olmstead, 2013; Tidwell & Walther, 2002) and has the potential to make communication more efficient. On the other hand, the wide use of ICT creates new challenges related to privacy, personal data literacies, and issues of digital footprints that are widely debated in the field of communication studies (e.g. Page Jeffery, 2020; Pangrazio & Selwin, 2018; Siibak, 2019; Williams, 2007).

Great hopes have been placed on digital solutions such as tools to foster home-school communication. Some scholars suggested nearly twenty years ago that digitalisation may enhance home-school communication and support pupil development (Nichols & Read, 2002). It has been found that parents and teachers value technology as a tool that makes parent involvement and home-school partnerships more effective (Olmstead, 2013; Thompson, 2008). However, others warn that overly intensive digital communication can increase work overload or foster the expectation that teachers are available to communicate with parents any time (Thompson, 2008).

In this report, based on our empirical findings, we discuss how the benefits and barriers identified in previous research on home-school communication in general persist when it comes to home-school communication on the development of digital skills in children in particular.

3. Methodology

3.1. Sample

In May 2020, **20 in-depth interviews with experts from the education sector** (out of a total sample of 34 experts including 14 interviews with experts from the labour market) were conducted in Estonia, Finland, Germany, Italy, Poland, and Portugal with the aim of obtaining a deeper understanding of (1) the (digital) skills that youth need in the 21st century, and (2) the role of digital skills education, both in formal (e.g. school) and informal learning settings (including home). In this report, we analyse only the 20 interviews with experts from the education sector[1].

In every country, at least three education experts (incl. at least one policymaker, NGO expert, and scientist) were interviewed (see Annex I for a breakdown of experts per country and area of expertise). In Poland and Portugal, four education experts were interviewed. Table 1 specifies the criteria for selecting and inviting education experts to participate in this study (in order to see the criteria for selecting labour market experts and read the rationale of selection criteria, please see Donoso et al., 2020). The necessary levels of experience and expertise in a particular sector are described below:

Table 1	EXPERT PROFILES
Expert Profile	**Description**
Education expert 1	Someone with **ten or more years of experience** working in/for the formal education sector. This expert is currently working in the education sector or has recently worked there (no more than two years ago); in other words, he or she is a practitioner. This expert has plenty of knowledge about the use of digital technologies in schools, among children aged 12 and older.
Education expert 2	A person with **profound knowledge of educational policy and/or curriculum development** with a special focus on ICT and digital technologies, such as a ministry representative, an education policymaker, a researcher, an expert working at an educational agency with a government mandate. The expert has **a minimum of five years of experience** in the field, not necessarily working in the same organisation.
Educational expert 3	A **representative of an organisation, public or private, developing programmes/training/educational materials for formal or informal education** around topics related to digital skills, media literacy, digital citizenship, online safety, etc. for students, parents and/or educators. This person has **a minimum of five years of experience** in the field, not necessarily working in the same organisation.

In accordance with the aims of our study, a purposive type of sampling was chosen (Denzin & Lincoln, 1994). By means of this sampling strategy we were able to identify and select the experts that best fit the profiles defined in Table 1. The importance of identifying information-rich cases is that it allows us to study the cases in more depth. However, it also requires researchers who know the

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[1] Consortium partners participating in this work package decided to omit the home-school communication issues from interviews with labour market experts considering that they are not the experts in this field. Labour market experts could have provided their views on home-school communication as lay citizens but could not contribute to this sub-topic as experts. Therefore, they were not interviewed for questions on home-school communication as our purpose was to map the expert opinions.

specific contexts to be able to identify the individuals who best meet the specified research criteria. In our research, every ySKILLS country team was in charge of identifying and recruiting national experts who met the criteria established. They invited the identified experts to participate in the study via e-mail. In most cases, the experts accepted the invitation to be interviewed. A few people who did not respond or declined to participate were replaced by experts of the same category.

3.2. Interviews

The interviews were conducted in the aforementioned six European countries between April and May 2020 by 12 researchers. All interviewers were staff members of the ySKILLS consortium. The initial plan was to carry out the interviews in a face-to-face setting but the outbreak of the COVID-19 pandemic rendered a change of strategy necessary. Instead, participating experts were interviewed remotely via online conferencing systems. The researchers used various online platforms for which their institution had a data processing agreement (DPA) in place. Most of the interviews were one-to-one videoconferences, but a couple of interviews ended up as only audioconferences due to technical problems.

Table 2	SEMI-STRUCTURED INTERVIEW GUIDE: TOPICS & KEY QUESTIONS
Overarching themes	**Key questions to be answered**
Conceptualising digital skills	• How do experts conceptualise digital skills?
Core skills needed in the digital age	• What digital skills do they consider essential for now and for the future? Why?
The development of digital skills	• How are digital skills developed/promoted in each country (e.g. through formal/informal/non-formal education, lifelong training, etc.)? • Which types of actors/stakeholders are involved in this process (e.g. parents/families, educational system, policy makers, the industry, etc.)? • How do different actors (especially families and schools) cooperate in developing digital skills in students? • What is the specific role of (formal) education in supporting the development of digital skills among adolescents in each of the countries under study?
The importance of digital skills compared to non-digital skills	• How important are digital skills compared to more traditional or non-digital skills (e.g. literacy, numeracy or other types of non-digital skills)? • Can digital and non-digital skills be separated/detached from each other? And does this distinction still make sense nowadays?
Digital skills education/training SWOT[2]	• Considering the current provision of digital skills education/development available in this country, what are the main strengths, weaknesses/gaps, potential threats and opportunities?

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[2] SWOT analysis is a technique used for identifying **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats related to project or topic.

All researchers conducted the fieldwork on the basis of the interview protocol as described in Appendix II. The protocol distinguished between five overarching themes for the interviews: (1) Conceptualising digital skills, (2) Core skills needed in the digital age, (3) The development of digital skills, (4) The importance of digital skills compared to non-digital skills, (5) The strengths, weaknesses, opportunities and threats related to digital skills education/training. Table 2 specifies the overarching themes and key questions in the interviews. The interviews were designed in a semi-structured fashion, in order to allow for the emergence of unanticipated themes. The length of the interviews varied greatly with the shortest lasting 30 minutes and the longest 150 minutes.

Each interview started with a question on how would experts describe, in their view, what makes a person 'digitally skilled'. This question was followed by an interactive exercise in which experts had to reflect on the top-5 digital skills that adolescents should possess these days. During this exercise, experts were provided with 21 cards, each of them specifying a particular digital skill or competence. These skills were taken from the European Commission's Digital Competence Framework for Citizens (DigComp) in its revised 2017 version (Carretero, Vuorikari & Punie, 2017). The experts were asked to select the five most important digital skills and rank them in order of importance. They were invited to comment on their choices and the prioritisation process. They had the opportunity to include any additional skills that were not indicated in the DigComp, if relevant. Only a few experts used the chance to include some new skills.

It is important to clarify that the exercise was not intended to serve as an evaluation of the DigComp model. Instead, the framework was used as a source of inspiration for the experts to express their views on digital skills in a comprehensive manner.

3.3. Collection and data storage

Ethical approval was granted by the Social and Societal Ethics Committee (SMEC) of KU Leuven to carry out the interviews before the recruitment of participants started. Once the participants were recruited and before any data were collected, the experts were informed about how the collected data would be stored and processed, and their informed consent was obtained (Appendix III). The interviews were video-recorded. Most interviewees gave us their explicit permission to share their name and affiliation in ySKILLS publications and/or to be cited in selected quotes from the interview. When this was not the case, the interviews have been anonymised. Research data obtained by the project partners was collected and stored by each partner in secure databases at their institution for the purpose of elaborations to be carried out in the project. In addition, primary research data was also centralised by KU Leuven.

3.4. Transcription and analysis

The interviews were transcribed afterwards. In cases where the interviews were carried out in a language other than English, the transcripts were translated. In Estonia and Finland all interviews were carried out in English. In Italy the interviews with educational experts were carried out in English as well. In one case (Poland), the translation was produced by a professional translator and in Portugal the interviewers translated the two interviews given in the speaker's mother tongue. In two cases (Italy and Germany) DeepL/DeepL Pro automated translation software was used. In all cases, the translations were subsequently reviewed by the researchers who carried out the interviews to ensure that the resulting translation was correct. Finally, the transcripts were lightly edited for clarity and readability throughout; for example, removing repeated words, or smoothing translations when necessary.

Subsequently, the transcripts were hand-coded according to emergent themes, which are summarised below in Table 3. Some of these themes followed the logic of the initial research questions (cf., Table

2), while some new focus themes emerged, most notably because of the COVID-19 situation and its implications on school life in all the countries in the study. Due to lack of data, we were not able to fully answer a couple of original research questions about good examples of home-school communication in ICT issues and about home-school communication in ICT issues on the policy agenda. However, the interviews provided much insight into the (lack of) families' motivation to cooperate on ICT issues, patterns of home-school communication in ICT issues and the newly emerged themes.

Table 3	THEMES AND KEY QUESTIONS
Overarching themes	**Key questions to be answered**
Families' motivation to cooperate on ICT issues	• Are families and/or parents motivated to cooperate with schools in this field? If so, how?
Patterns of home-school communication in ICT issues	• Do teachers and parents/carers discuss ICT education-related issues and to what extent and do they engage in a dialogue about children's digital skills and literacies? Who initiates these discussions more likely?
Good examples of home-school communication in ICT issues	• What are good examples of school and home working together on digital skills development?
Home-school communication in ICT issues on the policy agenda	• To what extent is this kind of cooperation on the public and/or policy agenda? If not very present, what needs to be done to put/keep such cooperation on the public and/or policy agenda?
Newly emerged themes	
Barriers to home-school communication **Need for parent education in ICT topics** **Reaching out to parents (whose children would benefit the most from home-school communication)** **Effects of the COVID-19 crisis**	

4. Main Results

This report presents the views and opinions expressed by 20 experts from six countries. The results are illustrated using excerpts from the interview transcripts. First, we will describe the patterns and challenges of home-school communication in general and by the end of this section, we will discuss the effects of the COVID-19 crisis, lockdown and distant learning on home-school communication.

4.1. How regular and close is the communication between home and school?

Interactions between home and school play an important role in young people's lives. However, the more specific focus on pupils' digital skills in this communication is often missing or is rather insufficient. Several education experts claimed that there is hardly any communication between home and school about children's digital skills and literacies in particular. Some education experts claimed spontaneously: 'I actually believe that relatively little is happening there' (Germany, Education expert 2). However, this does not mean that such a focus in home-school communication does not exist anywhere; however, the experts could not describe explicit examples of good home-school interaction on this topic: 'At least I haven't experienced it. I can't say that it's never happening in any school. But not with those teachers that I've been working with' (Estonia, Education expert 2).

Other experts were more resolute in their opinions about home-school cooperation on children's digital skills. The Polish expert stated bluntly that 'there is no discussion on this subject' (Poland, Education expert 1). An Italian expert had a similar opinion, suggesting that 'I don't think there is any interaction – not even cooperation – any interaction at all' (Italy, Education expert 1).

> School psychologists have been trying forever to find ways to connect parents with schools – so good luck with that! We haven't done it yet. (Italy, Education expert 1)

Therefore, it is not surprising that some teachers we interviewed stated that 'the cooperation is much more with other institutions than parents' (Estonia, Education expert 1). Another expert suggested that cooperation between different institutions is actually desirable because the development of young people's digital skills is 'a multisectoral thing' (Finland, Education expert 3). The Finnish expert only saw a problem if parents are not at all involved in this multisectoral cooperation. He saw schools as the primary party responsible for involving parents as, 'schools already have contact with parents. Regular contact occurs both with individual parents and also groups of parents. So, I do believe that they should be active, very active to have this dialogue with parents as well. Like, how kids are using technology and encouraging parents to also keep this up' (Finland, Education expert 3).

4.2. The most common form of home-school communication – special projects and events

Several experts who saw at least some cooperation taking place between home and school suggested that the **initiative** to communicate on digital skills comes rather from school than from parents. These initiatives are often related to the parents' digital skills and raising their awareness of children's online activities. For example, several education experts from different countries indicated that some schools put a lot of effort into the development of partnership and organising **dedicated projects and events**, in order to discuss children's digital skills or to promote parents' own digital skills.

> For instance, there is this project that is always mentioned: *Genitori connessi* [Connected parents] where we have activities that are parallel for parents and kids. And, in the end, parents have a glimpse of what kids do. (Italy, Education expert 1)

> Sometimes schools offer workshops for parents: what to do and how to behave on the internet. (Estonia, Education expert 1)

> There is a project in Thuringia called 'Media Worlds in the Family' and I am always on the way to such student-parent media evenings as a freelance lecturer. Not only do the parents come but also the students and there we discuss cyberbullying and hate speech and how to deal with each other in a class chat using WhatsApp and so on. (Germany, Education expert 3)

Only a couple of Finnish experts suggested that the home-school communication on digital skills is an ongoing process that takes place also outside dedicated projects or workshops for parents.

> Many schools have parental evenings related to different topics and also ICT related parental evenings sometimes. I have previously conducted a great deal of internet safety evenings for parents at the school. Most schools also have parents' associations and sometimes they are active on these issues. And the parent can naturally also contact teachers at school on whatever they find useful. (Finland, Education expert 2)

However, as these examples were provided by only two participants about one particular country, it may be debatable to what extent the described cooperation has to do with **institutional regulations**. The role of institutional regulations hardly came up in other interviews and it was mentioned only in Finnish interviews that teachers must discuss children's digital skills development regularly with pupils and their parents as part of the development discussions.

> We have to have a cooperation between school and homes, and especially parents and then, of course, when we have those, we call them development discussions between teacher and pupils, normally the parents are also involved. (Finland, Education expert 1)

4.3. Barriers to home-school communication and cooperation on children's digital skills

Understandably, it is the parents' decision whether or not to go along with various initiatives provided by schools and whether they choose to participate in projects or discussions on children's digital skills. According to the interviewed experts, some (but definitely not all) parents are interested in digital skills and parenting trainings and workshops taking place at schools. It is important to emphasise that the lack of communication between home and school is not something specific to digital skills. Several experts suggested that the lack of home-school communication may be part of a more **general pattern of busy life-styles, or disinterest and disengagement that characterise some parents' attitudes in this respect.** Therefore, in expert interpretations, parents may have no time or interest to be (deeply) involved in school issues.

> In families with close links to education this is not a problem. They find ways and possibilities to always bring their children forward, also with regard to digitalisation. But educationally disadvantaged families are often not at all interested in their children, let alone in finding ways of somehow enabling them to acquire digital skills or something like that. (Germany, Education expert 1)

The previous quote already hints at one possible explanation for why some families stay away from school initiatives to promote digital skills in children (and parents as well). Some experts believe that **parents with less digital skills** may feel unequipped to participate in digital skills related to communication with the school. Most such parents, contrary to the previous statement made by the German expert, 'are aware of the fact that digital skills are necessary for the future of their kids' to be employable (Italy, Education expert 1) but unfortunately, they do not comprehend the mechanisms of new technologies and the scope of digital skills and 'you can't teach or be interested in something that you don't know' (Italy, Education expert 1).

> I know that a child needs to know how to write and count. That's why I demand schools provide this. If I don't know that you need to be aware of the algorithm that shows you the

feeds in a playlist, how can I demand a school to provide those skills? (Italy, Education expert 1)

Home plays an important role in developing children's various skills, including their digital skills, but **according to the individual perception of the experts, the family's role in developing digital skills in children may often remain marginal**. Experts suggested that it is due to parents' lack of digital skills. If parents themselves have poor skills, they cannot support their children's digital literacy as well as skilled parents can. Less-skilled parents lack the knowledge of what skills their children should have or what they need to develop. Therefore, the experts believe that parents often do not even imagine that they can expect the school to teach digital skills to their children.

> I think the role of families is unfortunately very small. If the parents themselves don't know how to deal with digital problems or how to behave on the internet, then they can't teach their own children. (Estonia, Education expert 1)

However, some experts from Finland and Estonia stressed that as parents' knowledge of new technologies and their own digital skills are getting better and better, they are becoming better equipped to participate in home-school communication on children's digital skills.

> I believe some parents are woefully unequipped to actually support their kids' digital skills. But in my experience, it's getting better and better. Parents are more interested in what their kids are doing in the digital world. (Finland, Education expert 3)

Therefore, in order to promote home-school communication on digital skills, **it is necessary to provide digital skills education also to parents**. As the third expert from Finland emphasised, even though, general conferences and workshops may not provide the same impact that smaller and more specialised programmes for thorough digital education can provide, they still help parents realise potential gaps in their knowledge. Such a reflexive approach helps to raise awareness of the complexity of these topics. While the Finnish expert considers that participation in the events that focus on parents' skills improvement is already a sufficient effort, a Portuguese expert suggested that parents should be involved in the national programme for digital competences.

> Generally speaking, we still have children in Portugal who don't have access to any kind of technology, and unfortunately, even if they have access, they are not accompanied by adults who understand the potential of technology and the internet for learning or for the development of skills and competences. What I'm saying is that parents should also be part of the national programme for digital competences. (Portugal, Education expert 2A)

4.4. Reaching out to parents whose children would benefit most from home-school communication

The participating experts pointed to a problem with providing parents with digital skills, media education, and parenting workshops and training. In particular, they found that **parents who need digital education the most, are often the hardest to reach**. Parents who participate in various initiatives and engage in their children's learning are already quite knowledgeable about the benefits of communicating with the school as well as the necessity from time to time to educate themselves about digital developments. However, parents who could benefit from educational programmes the most, often do not attend these events. In this context, experts mentioned less educated parents and families with lower socioeconomic status as well as families with a migrant background.

> Here, ghettoization is very strong. We have to take that into account. /…/ I think this is a problem that makes all areas of education and training difficult, not just digitalisation or something like that. There is also hardly any communication with parents. When we have parent-teacher conferences or parent evenings, only a few families come. The others just stay

away. They do not come. Some don't know enough German. Others have social problems and so on. (Germany, Education expert 1)

Based on personal experience with media classes for families with a migration background, an expert from Germany stressed that 'whoever goes there are the highly interested, committed families and parents where everything is great anyway' (Germany, Education expert 3). However, 'the target group that we actually want to address doesn't show up' (Germany, Education expert 3). The expert admitted that the situation is quite understandable when the more serious or acute problems some families face overshadow the issues of media education or digital skills. These just cannot compete with more pressing issues.

The same German expert also suggested that for many parents who remain unreachable, the school environment itself may not be the most optimal context for learning and improving digital skills. Parents who usually avoid school-based gatherings may instead be more open to **parent-to-parent mentoring**, for example. The expert (Germany, Education expert 3) brings 'parent talk' in Bavaria as a good example of a very informal event to discuss children's ICT and media use with parents. The discussion is led by media mentors who 'are trained parents who then come into an exchange on such a low-threshold level' (Germany, Education expert 3). According to the expert, the benefits of this kind of an arrangement is that instead of an expert talk, there is exchange between parents.

> It's not the external expert who comes and tells you at home how things should be done and how you should educate your children, but you have an exchange. These are often within circles of friends and acquaintances who already know each other. And you also know from studies that parents are most likely to listen to other parents. (Germany, Education expert 3)

Furthermore, this kind of parent-to-parent mentoring can be more accessible to **parents from ethnic minorities** because there are different media use practices in different cultures, which may be unknown to a media expert with a different cultural background.

> You can reach the foreign families better because there are also media mentors of Turkish origin and this culture can be picked up in a completely different way. Because I notice that when I am on the road, in such district cafés and so on, I am totally overwhelmed and pass the target group because they have a completely different media access and a completely different culture in Arab families or in Turkish families. (Germany, Education expert 3)

It is paramount to indicate that if **home-school cooperation is dependent on parent education, work, and socioeconomic background**, it may mean that children from affluent and educated families have advantages in digital skills and access to new technologies, while children with less opportunities lag behind.

> Parents are interested in getting the best for their kids. They can be very motivated but, of course, that depends very much on the certain school. If you have more educated parents, if you have parents who are working in the right industry, I mean, organising things is much easier. (Estonia, Education expert 3)

> Our parents, they are quite supportive of their children. For example, if you think about how much our high school costs for high school students, they buy laptops. It costs 1000 euros. Not a problem. They want to spend money on their children. So, I think they are quite supportive. Of course, if the family has some unemployment background, then, of course, it's a problem. (Finland, Education expert 1)

Furthermore, the whole school has a major advantage if a significant proportion of parents have considerably good digital skills. As one expert suggested, parents may play an important role in supporting the school with teaching digital skills if they have better digital skills than the teachers.

> I think that's the way it very often ends up in real life that in the schools where perhaps the teaching of digital skills is not at a very good level, very often parents do help, take the role

of the teacher. I've heard about cases where parents also do the teaching, of course, on a non-formal basis, in hobby groups. (Estonia, Education expert 3)

4.5. Parent motivation to cooperate with schools

Quite a few experts suggested that families lack the **motivation** to cooperate with schools altogether (e.g. education expert 1 from Poland). Overall, the experts interviewed were quite optimistic about parent motivation to cooperate with schools, in order to ensure better skills and better studying and job opportunities for their children in the future.

> I think mostly parents are motivated to support their children's learning, they help with homework, buy digital devices at home, and pay for an internet connection, and so on. And they are also the primary source who starts teaching digital skills to children in everyday life when the children are very young. But of course, the parents' capabilities to contribute to the children's learning very much depend on the general situation of the family. (Finland, Education expert 2)

The **lack of cooperation does not necessarily mean a lack of motivation** to **participate** in the home-school communication process. As one of the three Finnish experts emphasised, **families are overwhelmed with different responsibilities** and many parents may simply lack time and energy to actively contribute to a dialogue about digital skills and their development.

> I think that people in general are quite overwhelmed with all the information that they are provided with. Based on my profession, I always encourage schools to discuss with families, and parents to discuss with their children but we should be very careful when thinking about what kind of extra effort the parents should make for their children. Parents can be very tired after a working day, we shouldn't blame them if they are not interested in participating in the events. I think it's good to have different kinds of options as well as dialogue, but it's also very important for us to understand, when you are raising a child, there are like 2,000 things that are important, like art education, sports, healthy food and so on. And all the experts are saying that you should be focused on this, and you should be focused on that. (Finland, Education expert 2)

In the same vein, an expert from Italy mentioned research conducted by *Centro Internazionale Studi Famiglia*. As the expert described, the research centre publishes a national report about the family situation in Italy every second year. The study is based on a nationally representative sample of about 4,000 parents interviewed by phone. Parents predominantly agree with the statement that digital education is important for their children. However, 'when you try to measure what they really do about this, more than 90% of the parents do nothing' (Italy, Education expert 3). He explained the contradiction between parents' words and actions first and foremost with **time constraints** combined with the parents' belief that their **children are more competent in digital environments** than themselves.

> First of all, they have no time; they have little time to spend with their children. The problem here is the conciliation between the work and the family. Both parents usually work. Both parents are usually out from morning till evening. When they come back home, there is no will, no motivation to stay with their children, discussing what they did in the afternoon, what they did with the media. This could be one issue. The second one is that usually they don't think they are able to do this. They think that their children are more skilled than they are about digital education. (Italy, Education expert 3)

4.6. The most common topics: a complex relationship around taking the phone away from the children

Several experts indicated that **digital skills were not a priority topic in home-school communication**.

> They [have a] dialogue, but only on academic achievements. Digital skills are at the bottom of the list. (Portugal, Education expert 3)

There is one remarkable exception to this rule of the lack or the rather narrow range of discussion topics on digital skills in the home-school communication. The Finnish expert, a teacher by profession, recalled that they have lately discussed cyber bullying, netiquette, and excessive internet use issues with parents at school.

However, there are **some topics related to digital skills and devices that tend to get (disproportionately) more attention**. Based on the interviews, it seems that home-school communication often centres around the use of smartphones and the question of whether smartphones should be allowed in schools.

Some experts suggested that it is easier for parents to demand that schools forbid phone use at school as the parents themselves cannot handle the extensive phone use at home. However, this creates a conundrum: on the one hand, parents are demanding smart devices be forbidden in schools, but on the other hand, they want the schools to provide their children with the best possible digital skills.

> Some of the parents are favouring this kind of attitude that, oh, pick the phones, because they can't solve the situation at home anymore. It's out of their hands, and then they feel a bit better if they know that at least at school, it's under control. Someone is checking that my children are not using these technologies too much. (Estonia, Education expert 2)

> It probably happens in most countries, but sometimes the parents go to school (to complain), because the teacher wants to use the children's cell phones during the class to do a browsing activity or something similar. Parents complain because their son/daughter shouldn't use the cell phone in school. However, it was the parents who created the Instagram account for their young son or daughter. So, sometimes they don't understand how contradictory they are. (Portugal, Education expert 2A)

However, the Estonian expert, as cited below, suggested that the home-school communication on smartphones can be relevant and convey important messages for the parents.

> If I as a parent got a signal from the school that my children are spending too much time on the phone, then I see that this is a message for me. I have done something. I have made some mistake. I should now make some agreement with my kids. (Estonia, Education expert 2)

Experts explained that the controversies in parent demands on schools may be motivated by parental fears concerning the new technologies. The parents, "who created the Instagram account for their young son/daughter" (Portugal, Education expert 2A) can nevertheless be concerned that their child is spending too much time on the internet and believe that the school should do something to restrict their children's internet use. There are parents who think that their primary task regarding their children's digital skills is to limit their children's access to inappropriate content on the internet. Experts suggested that parents who are not keen users of digital technologies themselves may be sceptical of digital solutions in schools and teaching digital skills. Some experts emphasise that is why it is important to work not only with children but with families in order to help children develop adequate digital skills.

> I think that parents in Poland are not truly open to the digital technologies used by their children. They think about media as necessary tools in the future but at the same time they are

very suspicious of them. They think about screen time, parental control, inappropriate content. (Poland, Education expert 1)

There is a tendency for families to forbid or limit, for example, by placing filters on the use of the internet, which is inefficient. That is the reason why in this area we must also work with families. (Portugal, Education expert 1)

The German expert commented that parents' preparedness to support the development of digital skills "depends a bit on the social background" (Germany, Education expert 1). Parents from poorer neighbourhoods or 'educationally challenged' parents, as this German expert put it, often ban the computer as a punishment without realising that it may undermine teachers' efforts in developing the children's digital skills. For them, banning smartphones or other devices at school makes a lot of sense.

Other experts confirmed that parents' views on what is allowed and should even be encouraged, contrary to what is not allowed, vary to a great extent, so that it complicates finding satisfactory solutions for everyone, including decisions on allowing or banning smartphones in the classroom.

There's a huge spectrum, from prohibiting everything to being very competent, to somehow losing their heads in the sand and somehow getting down to the parents who buy their 9-year-old son a game, which is [rated] 18 USK or more. (Germany, Education expert 3)

4.7. Protection *versus* education: how can we develop skills if we want to protect children from everything?

The experts learned that parents usually become interested in digital skills or media education when **something goes wrong or some serious problems occur** (e.g. cyberbullying cases). The co-occurrence of such topics activates parents' basic instinct to protect their children from potential harm in the digital or real world.

If somebody in the class has been bullied with the mobile phone, if some girl has sent topless photos around or if the teacher has collected the mobile phone and the parents freak out because the teacher is not allowed to do that. In my opinion, only with such things was there any communication at all. (Germany, Education expert 3)

It is difficult to interact with parents because they don't see it as a problem unless you tell them a very specific thing to protect the child: how to know or react to hate speech, how to defend against violence or pornography on the internet. (Italy, Education expert 1)

At this point, the fundamental difference between **protecting from harm and educating** children to be digitally capable needs more thorough discussion. As the experts suggest, it is impossible for children to develop good digital skills if they are constantly protected from every potential harm on the internet.

The difference is the position in front of the risk. When I protect, I make everything possible for me to prevent or make it possible that my children don't meet such risks. When I educate, I am ready to imagine that the risk is part of their life. But I have educated them, and then, I think that they could confront the risks. (Italy, Education expert 3)

By ignoring these complexities, no efficient and sustainable communication can be developed.

4.8. Competing views and arguments on the need for home-school communication

The experts interviewed generally agreed that having families on board to provide children with good digital skills is paramount. As one expert quite bluntly said, 'the parents' interest in the topic is

necessary' (Estonia, Education expert 1), in order to have a better digital skills education in general that, in turn, advances children's opportunities to learn and succeed.

Some experts agreed that countries need to have home-school collaboration **on the public policy agenda**, in order to involve families in educational work and support children's digital skills development.

> Parents should be more involved with their kids' education. They need to know what the school is because they don't know what it is – the school. They remember school from the past. If we want to be an innovative society this is the opportunity to change the thinking about school, the school of the future. (Portugal, Education expert 2)

Somewhat in contrast, other experts stressed that home-school cooperation is a **private matter** that cannot be driven by public policy agenda.

> It can't be on the public policy agenda because that's a private matter. On the public policy agenda should be the obligation to share funding for universities, and the funding of scholarship offices, students in teacher training schools, where they learn to become informatics teachers or something, this is the public agenda. Private families are a private matter. It's in everybody's interest that socioeconomic differences are also not becoming too wide in society because that affects what happens in families a lot. But government can't help private families take over the teaching of digital skills, that's not possible. (Estonia, Education expert 3)

Some experts expressed the hope that **digital solutions** are going to enhance the home-school cooperation.

> Cooperation with the school is becoming common, and has been facilitated by online communication through an electronic register platform. Parents are involved in school development, e.g. by collecting contributions for co-financing school equipment. (Poland, Education expert 2)

However, digital solutions alone cannot change the home-school communication patterns. Considering the importance of home-school communication, a Polish expert suggested that teachers should be better prepared for communicating and cooperating with families through **training**.

> The first thing to do is to change the training system for future teachers. They do not learn how to cooperate, with their students or with the students' parents. The second thing is to tell parents that digital or future skills will help their children. And parents have to see the efforts of teachers in this matter. (Poland, Education expert 1)

4.9 Effects of the COVID-19 crisis

The COVID-19 crisis has affected countries around the world in unprecedented ways and educational systems have had to adapt extremely quickly to new circumstances. This has significant implications for the education sector including the use of technologies and platforms for learning purposes and home-school communication and collaboration in the context of distance online-based learning that became a new reality for the pupils and their parents overnight.

An Estonian education expert suggested that the COVID-19 crisis impacts (1) 'the way the teachers are collaborating and planning the teaching', (2) 'the way teachers are communicating with their students and the way they are giving the feedback' and (3) 'the way the process is being monitored' (Estonia, Education expert 2). By monitoring, she means the activities of the school management and school-level decision-making. However, most of the experts agreed that it is too early to assess the effect of the COVID-19 crisis on learning outcomes as well as on home-school communication.

The majority of the experts suggested that the described **effects resulting from the quite long distance learning period may be predominately positive as homes and schools have started to communicate a lot more to make sure that the children progress in their academic activities**. As the situation is new for all parties of the learning and teaching process, teachers, parents and children have to figure out together how to make distance learning work and in order to do that, they have to communicate with each other.

> I think there's a lot of pressure on the issue now. Parents are going through the painful experience of home schooling, and they're getting more involved with this topic. (Germany, Education expert 2)

> I observe a huge improvement in the forms of building teacher-student, parent-teacher, and parent-student relationships. These have a chance to continue after the pandemic. Parents were surprised by the number of responsibilities that they had to take over. In addition to understanding the material, they had to develop ways to improve the regularity and planning of work by their children. (Poland, Education expert 1A)

> People are just finally recognising how hard it is to be a teacher. Parents are realising this. It is showing teachers that they can do things differently. (Portugal, Education expert 3)

The Polish expert suggested that homes and schools were equally unprepared to deal with the challenge of distance learning.

> By the time the present pandemic emerged, we observed that although schools are working in remote mode, many schools, teachers, but also parents and students were not prepared to learn in a fully digital way. (Poland, Education expert 1)

Some also mentioned positive effects on teachers who may have previously been reluctant to use digital tools, but in this new and somewhat unexpected context, they had to and, in the long run, the whole situation may enhance home-school communication.

> I think that teachers who previously didn't use digital tools, now, they must. And I think it's quite useful to use this time to learn something new. And I think that for parents and students, too. Because there are so many environments you can use in teaching and learning. (Estonia, Education expert 1)

> It is positive that teachers will discover new tools. An interesting phenomenon on a large scale is that teachers began to support and learn online themselves. Digital libraries, online repositories, and e-material platforms are experiencing a renaissance. But in my opinion, relying on purely digital teaching is not enough. Without thorough preparation, it will bring deplorable results in the long run. (Poland, Education expert 2)

However, teachers and parents may have different views and experiences on whether such experimentation is good or bad. Those experts who were parents themselves found using too many (new) technologies, tools and platforms confusing and counter-productive for the students. Therefore, for the families, "the first week [of distance learning at home] – as a parent – was a Hell" (Estonia, Education expert 2). As parents, they would have expected the school to coordinate a bit more what programs and platforms teachers use. Nevertheless, after some time all parties became more used to this situation, stopped experimenting too much, and settled on a smaller number of different programs and platforms.

The experts who had children of school age claimed that they discovered gaps in their children's digital skills exactly because of the distance learning experience. They learned that their children had developed some of the digital competencies, while lacking other important skills. Therefore, they had to help children to acquire some new skills, in order to fulfil the requirements of their homework.

> Even though they are very digitally savvy compared to some of their peers, you don't learn studying skills by watching YouTube and playing Fortnite. So, for example, [name of the child] has needed a lot of support, so that's why the communication from schools to parents has been more precise than before. And of course, more focused on, for example, what kind of software they are using, for example, my kids' school uses Google classroom, so they have been instructing us carefully how to assist the child to log in to Google classroom, books and so on. (Finland, Education expert 2)

Critical situations illuminate potential sources of inequality, as parents are not equally skilled to mentor their children's digital skills. In fact, as the Finnish expert put it – in many families, children are helping their parents with digital devices and applications, not the other way around.

> It's more like, that our children, they are teaching their parents how to use Teams [communication platform] and discussion forums and so on. (Finland, Education expert 1)

The experts found that schools and families had to face this crisis together as the parents had to assume many of the responsibilities of the teachers, and teachers' choices of preferred digital learning technologies affected not only the children, but their families as well. It was no longer a matter of choice whether you wanted to use technologies for learning or not.

> I think it has been a crisis that made everybody use technology because that was a forced situation. Technology has been a nice option to have in Estonia for many schools and teachers but now pretty much everybody was forced to use it. /…/ It has been, in a way, a national effort of learning the basic digital skills for everybody, for students or for families. (Estonia, Education expert 3)

However, several experts acknowledged that rather than smoothing the differences between families, the ongoing crisis has amplified the differences between children with different family backgrounds. Some of them said that the most **pressing challenge** for the education systems in the countries in this study **is to detect children and youth who are at risk of being left behind and to cater appropriate services and support for them.**

> In many cases, parents have become teachers, although not everyone can teach. Many responsibilities and tasks are imposed on parents. /…/ And now it turns out that not everyone has the equipment, internet access, appropriate learning conditions. It is unknown how to solve these inequalities. /…/ Wellbeing at home is particularly at risk. The level and quality of education will probably drop. (Poland, Education expert 2)

> We have to talk about the equality of the education, and all the inequalities that this entire situation is bringing. You have now *Tele-escola* [classes through television – teleschool] and digital classes – but what about children that cannot follow digital classes and can only follow *Tele-escola*? *Tele-escola* is better than nothing, but this situation will increase digital gaps and digital inequalities among children. Those who need more support may be the ones whose parents have to go out to work and are not entitled to stay at home to take care of their children during the pandemic. Let's see what it brings but this digital gap is not going to be positive for some children. (Portugal, Education expert 1)

Some remedies for fighting technological inequalities were settled rather quickly. However, these remedies concern first and foremost access to devices, whereas unequal access to cultural and social capital at home (e.g. support and help of a digitally competent adult) is much more difficult to tackle.

> What is very valuable is that schools have provided tablets and laptop computers for those families who didn't have any for the children. (Finland, Education expert 2)

Several experts shared their belief in stronger and closer home-school cooperation due to the combined efforts to deal with and cope with the crisis. Furthermore, experts acknowledge that both

parents and teachers have developed soft skills necessary to cope with digital communication between home and school.

> I think it has definitely made this cooperation stronger. In Finland, parents are not usually so involved in school work as in many other countries. /…/ But now since pupils have been studying at home for several weeks already, and it digitally happens very fast. So, the school had to instruct the families more than ever because at least the youngest students have needed a lot of support from their parents to be able to study. (Finland, Education expert 2)

> First of all, parents would be more aware of the work that is behind the process of learning, which is not limited to homework; homework is the easy part of the teacher-student interaction that the parents can understand. They see an exercise and they see that there is something that needs to be done. /…/ I think in these 5–6 weeks of engagement that you need to produce in order to create a group, and to relate, and to discuss certain things was very useful for parents to understand better what the learning process is about. (Italy, Education expert 1)

> As a headmaster, I notice a large development of soft skills. Remote learning has increased the number of informal contacts. There are numerous consultations with the teacher, psychologist, parents – definitely more than normally. This is a paradoxical effect – the desire for constant contact has increased. It turns out how important the care and pedagogic functions of the school are. (Poland, Education expert 1A)

However, the crisis-related home-school communication has **not been overwhelmingly positive** or constructive, especially in those countries or regions where distance learning started less smoothly. The German expert brought an example of a conflict situation caused by a problematic e-learning platform that failed to work properly. The situation resulted in getting a lot of negative feedback: 'the parents were very angry, so we also got a lot of feedback because the technology was not used as it should be' (Germany, Education expert 1). Still, the experts foresaw some positive outcomes of the current inconveniences and suggested that they may lead to efforts to establish more meaningful home-school communication on digital skills.

> I think it will have a knock-on effect in schools. /…/ I do not believe that it has changed the communication between school and parents now. (Germany, Education expert 2)

5. Conclusions and Final Remarks

Home and school both play an important role in the lives of children and young people but when it comes to home-school communication and cooperation on children's digital skills, the education experts interviewed for this project agreed that the communication between home and school is often poor or insufficient. Some experts even claimed that the home-school communication on children's digital skills is completely absent, whereas others were more cautious and suggested that there is room for improvement regarding home-school communication on children's digital skills. There were also claims that when it comes to children's digital skills, schools communicate and cooperate more with other institutions than with families. However, experts agree that **it is paramount to have families on board to provide children with good digital skills**.

The project also indicated that **to date, digital skills are not a priority topic in home-school communication**. In general, the interviewees suggested that parents usually become interested in digital skills or media education when something goes wrong or when serious problems occur (e.g. cyberbullying cases). The occurrence of such topics activates parents to focus more on protecting their children from the potential of the digital world as a source of harm. Based on our interviews, it seems that home-school communication often centres around the use of smartphones and the question of whether smartphones should be allowed in schools. Experts suggest that parents who are not keen users of digital technologies themselves may be particularly sceptical of digital solutions in schools and teaching digital skills because they are unaware of the educational possibilities related to new technologies. Seeing new technologies mostly as a risk, parents expect schools rather to ban the digital devices than encourage their use. The experts also mentioned that parents' preparedness to support the development of digital skills depends on the socioeconomic background of the family.

According to the expert interviews, **home-school communication on children's digital skills most often takes place in the form of special projects and events,** often arranged by schools or taking place at school. Therefore, **the initiative to communicate on digital skills comes rather from school than from parents**. Only the Finnish experts brought examples of how the home-school communication on digital skills goes beyond some dedicated projects or workshops for parents. Some experts emphasised that the lack of communication between home and school is not something specific to digital skills but there is a more general pattern of parents being too busy, disinterested or detached from being involved in school and learning issues.

The experts stressed **several barriers** to home-school communication on children's digital skills. For example, the experts assumed that parents with less digital skills may feel unequipped to participate in digital skills related communication with their school or to contribute to the learning process. Furthermore, as the experts suggested, due to the lack of digital skills in some parents, the role of families in developing children's digital skills often remains marginal. This means that if parents have poor digital skills themselves, and do not fully understand what skills their children should have or need, they may not be able to contribute to the school-home dialogue on what skills should be taught or developed at school.

In order to enhance home-school communication on digital skills, it is necessary to **provide digital skills education for both the children and their parents**. Yet to date, the parents who need this education the most are the hardest to reach. The experts believed that it was the less educated parents and families with low socioeconomic status and/or migrant backgrounds who were the hardest to reach. To tackle this challenge, it may be advisable to provide **different kinds of training formats; for example, parent-to-parent mentoring** alongside school-based gatherings.

It is important to keep in mind that a lack of cooperation does not necessarily mean a lack of motivation to participate. The experts asserted that **families are overwhelmed with different responsibilities and that many parents may simply lack the time and energy** to actively

participate in communication about digital skills. Time constraints apply to many families regardless of their social standing. In particular, experts from Estonia and Finland emphasise the time constraints of families. However, due to the sampling design, no far-reaching conclusions about differences between the countries can be drawn.

According to the experts, home-school cooperation may depend on the educational, work, and socioeconomic background of the parents, as well as time constraints, and their confidence in their own digital skills. This may imply that children from affluent and educated families have advantages in developing digital skills, and that children with less opportunities lag behind. These **inequalities may be reinforced during the COVID-19 crisis and distance learning**, as parents are not equally skilled to mentor their children's digital activities. Therefore, rather than smoothing the differences between families, this crisis has amplified the differences between the children with different family backgrounds. Some experts say that **the most pressing challenge of our education systems is to detect children who are at risk of being left behind regarding their digital skills and access to new technologies and to cater appropriate services and support for them.**

Several experts expressed the hope that digital solutions are going to enhance home-school cooperation. However, digital solutions alone cannot change home-school communication patterns. Together with developing digital skills and techniques that children now need for learning, teachers as the main initiators of communication between school and home also need to be better prepared for the latter task. A growing amount of communication and the changing situation imply **more careful planning and coordinating, but also developing various communication skills among teachers**. The experiences from the first wave of the COVID-19 pandemic demonstrated clearly how important it is to arrange home-school digital communication in a way that is sufficient and that does not exhaust pupils, families and teachers.

Considering the implications of the COVID-19 crisis, the majority of the experts agreed that it is too early to assess the wider impact on learning outcomes as well as on home-school communication. The experts said that they remained hopeful that the effects are predominately positive, as homes and schools now have to communicate a lot more to make sure that the children get proper education. The situation is, however, new for all parties. Therefore, according to the experts, **both schools and families have to create and develop new communication patterns and practices** to make distance (and online) learning more functional.

The expert interviews also revealed some **contrasting findings on the outcomes of experimenting with different digital tools**, especially in the context of the distance learning experience during the first wave of the COVID-19 pandemic. Some experts stressed the potential of the crisis, urging previously rather reluctant teachers (but also parents) to use and adopt various digital tools, devices and new environments for learning purposes and to help their children cope. At the same time, other experts criticised the eclectic and unsystematic use of so many different digital solutions that did not help to enforce either distance learning or home-school communication. As a result, in some cases, families became overwhelmed and irritated by teachers, especially when some of the platforms did not function properly, and made teachers feel unfairly overburdened.

6. Recommendations

In this report, we presented and analysed the views of 20 experts on the home-school communication regarding children's digital skills. Thereby, we identified positive aspects but also challenges for the development of digital skills. One of the overarching objectives of the ySKILLS project is to develop ideas and strategies to help foster education in the area of digital skills, and thereby support children and young people in navigating a digitally transforming world. Based on the experts' insights and our own elaborations, we conclude this report with a list of recommendations on three levels.

The education system:

- Existing socioeconomic inequalities may be reinforced, as all parents are not equally skilled to mentor the development of their children's digital skills. Therefore, socioeconomic inequalities need extra attention in analysing teaching practices and learning outcomes in the field of digital skills development. One of the most pressing challenges for the education system is **to detect children who are at risk of being left behind and to cater appropriate services and support for them**. This includes providing universal access to necessary digital devices and software as well as professional help with using these devices and software for learning.
- There is a need for an **elaborate and systematic plan for selecting and using devices, platforms, software programs and learning technologies.** A lesson learned from the first wave of the COVID-19 pandemic and the resulting period of distance learning is that predictability and stability in digital learning environments (DLEs) would help to spare all parties (teachers, students and families) from unnecessary confusion, communicative efforts and loss of time. In making plans for the development and implementation of the DLE infrastructure, it is paramount to consider the students' age: the younger the students, the more they and their parents benefit from a unitary and stable DLE.
- To promote home-school cooperation in digital skills development, **it is necessary to provide digital skills education not only to children but also to parents**. For many parents, the school environment may not be the most optimal for digital skills training. Alternative and innovative approaches, such as **parent-to-parent mentoring** should be developed and implemented to engage parents who cannot attend school-based gatherings for various reasons.
- Parenting training should pay attention to the need to find a reasonable balance between reducing children's experiences of online risks and providing them with maximum opportunities. Therefore, a fundamental difference between **parental protectionism versus support and educating** should be thoroughly discussed in the context of digital skills development.

Teacher training and professional development:

- The implementation of digital solutions alone is not sufficient to improve home-school communication. Teachers should be better prepared for coping with various challenges and obstacles in communicating and cooperating with parents. The great variety among parents in terms of their educational and occupational background and digital skills, demands that teachers be prepared to perceive and approach them as different target groups to make the best use of parents' various competences and expertise in home-school cooperation. Therefore, **home-school communication should be part of the training system for future teachers and a key aspect of the continuous professional development of all educators**.

General recommendation:

- All parties (especially teachers and parents) should develop an empathetic attitude towards each other's resources and opportunities and **maintain improvement-oriented yet realistic expectations regarding home-school cooperation**. Overly ambitious demands, that require time and other resources that parents or teachers do not have, may be counter-productive and/or cause stress and burnout. The COVID-19 pandemic has brought out the need to consider all aspects of wellbeing and mental health for children, parents and teachers in the context of a crisis or during the accelerated development of aspects of the education system.

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Appendix I: List of Experts and Affiliation

Presented below are the short profiles of the experts who took part in the study.

Estonia

Education expert 1: Margit Laidvee (Luunja High school, Teacher). She has been a leader of several international projects on students' digital and media competences. She also uses different digital platforms and environments in her everyday teaching.

Education expert 2: Dr. Kairit Tammets (Tallinn University, School of Digital Technologies, Head of the Centre for Educational Technology). She is an expert on educational innovations in schools and technology enhanced learning; she is working on several topical research projects.

Education expert 3: Heli Aru-Chabilan (HITSA: Information Technology Foundation for Education, CEO). She leads the foundation that promotes the use of information and communication technology in education.

Finland

Education expert 1: Ari Myllyviita (Viikki Teacher Training School, University of Helsinki, Lecturer). An experienced educator who has vast knowledge of and experience in the use of digital technologies in schools. She participates in the research community Maker@STEAM at the University of Helsinki.

Education expert 2: Saara Salomaa (National Audiovisual Institute, KAVI, Deputy Director). She is the current deputy director of KAVI. She is a media literacy and education specialist working for the Finnish government to promote media literacy, active citizenship and better media environment for all.

Education expert 3: Juha Kiviniemi (Verke, the National Centre of Expertise for Digital Youth Work, Planning Officer)

Germany

Education expert 1: Anonymous (High school in the city-state of Bremen, Teacher). A senior teacher at the school (more than 20 years of teaching experience) and particularly in charge of media and ICT education at the high school.

Education expert 2: Uta Brammer (State Institute for Schools Bremen: Landesinstitut für Schule Bremen, Consultant for digital media use and curricula development in schools). She has more than 20 years of experience in her area of expertise; the state institute is an educational agency under Bremen's Senator for Children and Education (the Senator is equivalent to a Federal State's Ministry of Education).

Education expert 3: Dr. Iren Schulz (University of Weimar, University of Erfurt, Lecturer). She is a researcher and lecturer on media skills for children and youth; has more than 10 years of experience in providing workshops on media literacy to parents, teachers, schools and social workers.

Italy

Education expert 1: Anonymous (Teacher)

Education expert 2: Donatella Solda (Future Education Modena, Adviser on (data driven) innovation, IT Law researcher). Previous to her current position, she worked at the Ministry of Education and wrote the national Plan for Digital Schools.

Education expert 3: Anonymous (Università Cattolica del Sacro Cuore, Professor)

Poland

Education expert 1: Grzegorz D. Stunża (Media Education Lab at the Institute of Pedagogy of the University of Gdańsk, Assistant Professor). He is an Assistant Professor at the Media Education Lab at the Institute of Pedagogy of the University of Gdańsk. Since 2016, Grzegorz has also served as Vice President of the Polish Society for Media Education. He has worked on or coordinated many research projects dealing with digital skills.

Education expert 1A: Dariusz Stachecki (Feliks Szołdrski Primary School in Nowy Tomyśl, Headmaster). He is a chartered teacher and a headmaster of a primary school. He is a member of the Polish Information Processing Society and also Council for Computerization of Education and Teams for Strategy in the Ministry of National Education the subsidiary bodies of the Ministry of National Education. Dariusz actively acts as an animator and propagator of the idea of using ICT in school work. He is the ECDL examiner.

Education expert 2: Rafał Lew-Starowicz (Ministry of Education, Deputy Director). He is deputy director at the Ministry of National Education in Poland, coordinates the educational policy of innovation in Poland. As an employee of the Educational Research Institute, he participated in the evaluation of the "Digital School" Government Programme. He is a Polish delegate to the OECD Education Policy Committee, the European Commission Working Group on Digital Skills and Competences and the Consultative Committee of the "Safer Internet" in Poland, an expert in the "Classroom 2.0" Project.

Education expert 3: Dr. Łukasz Tomczyk (Pedagogical University of Kraków, Researcher). Research area: media education, educational technology, andragogy, social gerontology. Leader of research projects dealing with digital skills.

Portugal

Education expert 1: Liliana Silva (Secondary School Teacher). She is a teacher of Philosophy and has a large experience of working with students and teachers from different grades in the school libraries and resource centres.

Education expert 2: Paulo Dias (Universidade Aberta, Full Professor). He is responsible for curriculum development with a special focus on ICT and digital technologies and was previously the Dean of Universidade Aberta.

Education expert 2A: Margarida Lucas (Universidade de Aveiro, CIDTFF, Researcher). An expert involved with one of the European Commission's JRCs in the development and validation of the European Digital Competence Frameworks for Citizens and Educators (DigComp and DigCompEdu).

Education expert 3: Francisco Machado (ISMAI - Instituto Superior da Maia, Psychologist, University Professor). Responsible for the Erasmus+ G-Guidance, he also works on ISMAI initiatives which includes workshops, such as Parents in Tech.

1. Aims and method

The aim of this interview protocol is to describe the interview structure and the main steps to ensure that all interviews carried out with experts will follow the same methodology and will have the same focus.

The methodological approach chosen are semi-structured interviews with educational experts from the six ySKILLS survey countries – Estonia, Finland, Germany, Italy, Poland and Portugal. The interviews will be carried out by members of the ySKILLS consortium, and/or by partners appointed by them.

2. Criteria for the interviewees' selection

In every country at least **3 educational experts** will be interviewed. These experts will have a minimum number of years of experience working in the educational sector and should be knowledgeable and/or experienced in the sector they represent, as specified below:

In every country **at least one expert from each of the following groups** must be interviewed:

1. **Educational expert 1**: Someone with **10+ years of experience** working in/for the formal educational sector. The expert should be **currently working in the educational sector** or have recently worked there (no more than 2 years ago)**,** I.e. (s)he should be a practitioner. This expert should have plenty of knowledge about the use of digital technologies in schools, in particular among children aged 12 and older. It could be an ICT coordinator, a school management representative in charge of the school digital strategy, an experienced teacher actively using technology in class, the STEM teacher/coordinator, etc. (Minimum 1 interviewee)

2. **Educational expert 2**: A person **with profound knowledge of educational policy or curriculum development** with a special focus on ICT and digital technologies, such as a ministry representative, an educational policymaker, a researcher, an expert working at educational agencies with a government mandate. The expert should have **5+ years of experience** in the field, not necessarily working in the same organisation. (Minimum 1 interviewee)

3. **Educational expert 3**: A **representative of an organisation, public or private, developing programs/training/educational materials for formal or informal education** around topics related to digital skills, media literacy, digital citizenship, online safety, etc. for students, parents and/or educators. For instance, the pedagogical expert from a Safer Internet Center, a representative of an organisation providing coding camps or after-school digital workshops for children. Ideally, they should have **5+ years of experience** in the field, not necessarily working in the same organisation. (Minimum 1 interviewee)

3. Interview guidelines

1. **Interviews will be carried out online using the online platform for which your institution has a data processing agreement (DPA) in place.** The approximate length of an interview will be between 1-1.5 hrs. **All interviews will be audio-recorded.** Therefore, you will need at least **one recording device** per session. Although interviews will be recorded, it is advisable to take notes during the interviews. This will facilitate the analysis and report writing phases and will also serve as a back-up in case unexpected technical problems may arise. The interviews can be carried in a local language or in English, but the reporting language will be English.

2. **Make sure that the devices have enough battery and storage capacity** available to last the whole interview. Before starting each interview, it is advisable to test that the device is working properly and that the audio quality is good enough to listen to the interviews at a later stage.

3. Because interviews will be recorded you will have to **inform participants in advance**. Besides, **informed consent should be obtained** from them before the interview starts. Exceptionally, if some respondent requests that their interview is not recorded (and if this respondent cannot be replaced by an equivalent one) the interviewer should take notes, instead. If possible, use two interviewers in these cases, so that one can focus on taking notes and the other one on keeping the conversation going.

4. Start each interview by:
   o Thanking interviewees for their collaboration in the ySKILLS project
   o Introducing yourself and/or other interviewers
   o Briefly explaining what the ySKILLS project is about and how the data from the interviews will be used
   o Asking interviewees to briefly introduce themselves.
   o Before you start asking the interview questions, tell participants that you are interested in hearing their views, opinions, experiences and thoughts and ensure them that there are no right nor wrong answers.

5. At the end of the interview **thank participants** for their time and invite them to get in touch with you/someone from your team, the WP leader and/or the project coordinator may they have any questions, or may they require further information about the project. Also, tell participants that if they wish, they will be sent a copy of the publication(s) where the findings of the interviews with experts will be summarised. For this reason, they should inform you or the project coordination about any changes in their contact details.

6. **Transcribe (key parts of) the interviews**. To facilitate the analysis and reporting processes it is advisable to transcribe the interviews. Nevertheless, considering that not all countries have resources allocated for this task, verbatim transcriptions will not be a requirement.

7. Each country shall provide the WP3 coordinator with **a report in English summarising the main findings across the interviews** carried out in their respective countries. To facilitate this task, the WP3 coordinator will provide an interview and a country report template. If no verbatim transcription of the interview will be produced, it is advisable to fill in the interview report right after the interview has finalised or as soon as possible after the interview has finished in order to capture as much information and details as possible. Based on the interview templates, the country reports will be produced.

8. **Keep track of interesting quotes** that could potentially be used in future ySKILLS publications by any consortium partner. Given the richness of interview materials, we will create a quotes database that can be accessible by all project partners to enlighten their publications. For this reason, as you carry out and analyse the interviews, make notes of any interesting quote that you believe could be used in future publications or internal reports to the EC. After all quotes have been collected, we will classify them by topic so that they can be easily searchable.

4. Background documents

A number of documents were consulted to develop this interview protocol. In particular, it is advisable to have a look at the DigComp 2.0 as the interviews contain an activity based on this EC framework (1.5.1 Question 4). Note that these reports and articles are only suggested in order to make you well prepared for the interviews. We also suggest you consult relevant national documents such as policy documents or your national digital agenda to be better prepared for the interviews.

- DigComp 2.0: https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework

- Digital Competence Framework for Educators (DigCompEdu): https://ec.europa.eu/jrc/en/digcompedu

- 2nd Survey of Schools: ICT in Education: https://ec.europa.eu/digital-single-market/en/news/2nd-survey-schools-ict-education

- Digital Education Action Plan: https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

- Manifesto for enhancing digital competences across Europe: https://all-digital.org/manifesto/

- Teachers and technology: Time to get serious: https://impact.chartered.college/article/editorial-education-technology/
- MIT news (2019). What 126 studies say about education technology: http://news.mit.edu/2019/mit-jpal-what-126-studies-tell-us-about-education-technology-impact-0226

5. The interview themes

The interviews will focus around five main overarching themes:

Overarching themes	Key questions to be answered
Conceptualising digital skills	• How do experts define/describe digital skills?
Core skills needed in the digital age	• What digital skills do they consider as essential for now and for the future? Why?
The development of digitals skills	• How are digital skills developed/promoted in each country (e.g. through formal/informal/non-formal education, lifelong training, etc.)? • Which types of actors/stakeholders are involved in this process (e.g. parents/families, educational system, policy makers, the industry, etc.)? • How do different actors (especially families and schools) cooperate in developing students' digital skills? • What is the specific role of (formal) education in supporting the development of digital skills among adolescents? in each of the countries interviewed?
The importance of digital skills as compared to non-digital skills	• How important are digital skills as compared to more traditional or non-digital skills (e.g. literacy, numeracy or other types of non-digital skills)? • Can digital and non-digital skills be separated/detached from each other? And does this distinction make sense these days?
Digital skills education/training SWOT	• Considering the current provision of digital skills education available in this country, what are the main strengths, weaknesses/gaps, potential threats and opportunities? *e.g. If the current provision is not accessible to all, what are potential consequences for future employability, for the digital divide, etc.?*

6. The interview questions

6.1 Conceptualizing digital skills

1) According to you, what makes a person 'digitally skilled'?

2) In your view, how important (or unimportant) are digital skills for adolescents now and in the future (10–15 years from now)? Why?

3) What digital skills do children, especially adolescents, need these days? Think about different possibilities, such as digital skills to support learning, creativity, civic engagement, etc.
   a. *Encourage participants to reflect beyond technical skills (e.g. soft skills such as communication, critical thinking, etc.).*
   b. *Encourage participants to consider learning in a broad sense, including formal, non-formal and informal learning experiences (e.g. formal ICT classes, coding camps outside school, talking about online safety with parents, learning about new videogames with friends, etc.).*

6.2 Core skills needed in the digital age

1) The following cards contain different digital skills which are contained in the EC Digital Competence Framework 2.1 (DigComp 2.0)
   a. Read the cards (21 competences in total). Would you add any other digital skills to the current list of competences? If so, which ones?
   b. Select the 5 competences, including the ones you may have added, that you consider as the most important to be taught/developed at school. Rank them in order of importance.
   c. In your opinion, why are the selected skills more important than the rest?

   Important Note:
   - As the interviews will be carried out online, send Annex 1. Skills cards for Section 6.2 - Question 1 as a PDF to each interviewee.
   - DO NOT send Annex 1 BEFORE the interview starts. Instead, send Annex 1 only when the cards exercise starts. Explain interviewees that you will send them a file. Wait until they confirm that they have received the file and that they can read it. Give participants 5 minutes to read the cards and make notes. After this time has elapsed, ask them if they have any questions about the content of the cards. If not, you can proceed with the activity.
   - The Competences Dimension 2 will be presented as individual cards so that participants can easily chose cards and rank them. This will give us an idea of which competence areas they find most important and can open a discussion about the importance of these dimensions:
       i. Information and data literacy
       ii. Communication and collaboration
       iii. Digital content creation

iv. Safety
        v. Problem-solving
        vi. Other dimensions proposed by the interviewee

- Include 3 empty cards and instruct participants to add the digital skills they feel are currently missing (from the DigComp 2.0 framework). If they do not wish to add additional skills, this is also fine.

2) Think about 15 years from now. Probably new types of jobs will exist, and existing jobs may demand different skills sets. Which skills will adolescents need in the future to succeed in the workplace and be able to fully participate in society?

3) Do you consider digital skills as important, less important or more important than non-digital skills such as literacy and numeracy?

6.3 The role of education in the development of digital skills

1) Do you think that children's development of digital skills is well supported in Estonia?
   a. *Is the current support/provision (good) enough?*
   b. *What works well? What doesn't work (so) well?*
   c. *What is currently missing?*

2) In which way do children, especially adolescents, develop digital skills in Estonia?
   a. *Make sure to encourage interviewees to reflect both on formal, non-formal as well as informal learning contexts. Explain that by formal education we mean the formal school system (i.e. primary, secondary and tertiary educational levels which lead to a diploma) and by informal/non-formal education any instance outside of schools which could offer children the opportunity to develop their digital skills (e.g. home, educational software, apps, TV programmes, after-school workshops or activities, etc.)*

   b. *Encourage participants to think as broad as possible. They may reflect on aspects such as:*
        i. What types of activities help develop children's digital skills?
        ii. From which age do children start developing digital skills in Estonia? From pre-school, primary school, secondary school, etc.?
        iii. Where are digital skills developed? At school? at home? Somewhere else?

3) *Are digital skills* explicitly covered by the curriculum in Estonia? Tell us about it.
   a. Are digital skills taught in schools? Give us some concrete examples.
   a. Are there any important differences/gaps among different school levels (e.g. pre-school, primary and secondary school)
   b. Are there any important differences among different types of schools (e.g. public vs. private; technical vs. vocational; rural vs. urban; boys' schools vs. girls' schools, etc.)

4) What is necessary for children to develop adequate digital skills at school and out of school?

> a. *Prompt for things such as school infrastructure, knowledgeable teachers/adults/parents, teacher training, clear school policies/rules, after-school workshops, coding or ICT camps, workshops, awareness-raising, etc.*

5) Who is responsible for supporting the development of children's digital skills in Estonia?
   a. *Encourage interviewees to identify all possible stakeholders/actors involved in this process (e.g. governments, ministries, schools, civil society, the industry, etc.)*

6) Do families/parents also support these efforts?
   a. Are families and/or parents motivated to cooperate with schools in this field? If so, how?
   b. Whether and to what extent do teachers and parents/carers discuss ICT education-related issues and have a dialogue about children's digital skills and literacies? Who initiates these discussions more likely?
   c. Can you give us an example of school and home working together on digital skills development?
   d. To what extent is this kind of cooperation on the public and/or policy agenda? If not very present, what needs to be done to put/keep such cooperation on the public and/or policy agenda?

7) The coronavirus crisis/emergency is affecting countries around the world in unprecedented ways. In your opinion, how is this crisis affecting the educational sector, in particular as regards the use of digital technologies for home-school communication and collaboration?

6.4 Digital skills education: Strengths, Weaknesses, Opportunities and Threats

1) In your opinion, what are Estonia's main **strengths** as regards digital skills education?
   Note: Strengths refer to internal factors, i.e. aspects which are under the control of educational actors, such as:
   - *The current provision is universal. All children receive digital skills education through schools*
   - *The quality of the current provision is good*
   - *Highly qualified staff able to provide good quality education*
   - *Schools are interested in the topic*
   - *Schools have adequate infrastructure to support the development of digital skills*
   - *…*

2) In your opinion, what are Estonia's main **weaknesses or gaps** as regards digital skills education?
   Note: Weaknesses refer to internal factors, i.e. aspects which are under the control of educational actors, such as:
   - *The curriculum does not consider (the development of) digital skills*
   - *The current provision is not accessible to all, only children from certain schools or segments of society benefit from such programmes*
   - *The current provision depends on every school/region. Therefore, there are big differences in the offer and quality of digital skills education offered by different schools*

3) In your opinion, what are Estonia's main **opportunities** as regards digital skills education?

Note: As opposed to strengths, opportunities <u>refer to external factors</u>, i.e. aspects which are outside the control of educational actors, such as:
- *National, local, EU policies supporting and/or encouraging children's development of digital skills (at school).*
- *Good collaboration between external stakeholders and schools, such as the police, safer internet centres, the industry, etc.*
- *Increased public media attention as regards digital-related issues (e.g. fake news, (online) radicalisation, GDPR, online risks, etc.) encourages schools and the educational sector to invest in children's digital skills*
- *Parents' interest in the topic*

4) Last, what are Estonia's main **threats** as regards digital skills education?
   Note: As opposed to weaknesses, <u>threats refer to external factors</u>, i.e. factors beyond the control of educational actors, such as:
   - *EU or national regulation, such as the GDPR, "scares schools" and make them limit the use of digital technologies, limiting also opportunities to learn or practice digital skills.*
   - *There are plenty of out-of-school opportunities available for children to develop their digital skills, but not all children can afford or have access to such opportunities.*
   - *Most of the out-of-school offers target boys and older children. This limits the opportunities of girls and younger children to develop their digital skills.*
   - *…*

6.5. Summing up

From your experiences in working in the [educational sector], is there anything you would like to add?

6.6. Thank you

ySKILLS

Interviews with educational and labour market representatives

Informed consent form template for interviewees

You are invited to participate in an interview which is carried out as part of the ySKILLS ("Youth Skills") project. "Youth Skills" (ySKILLS) is a four-year project running under the European Union's Horizon 2020 Research and Innovation Framework Programme as a so-called "Research and Innovation Action" (RIA). It aims to enhance and maximise long-term positive impacts of the ICT environment on the wellbeing of all children.

You must be 18 years or older to participate in this interview. Your participation is voluntary. Please take as much time as you need to read this form and the accompanying information sheet. You will be given a copy of this form.

We identified you as an expert in the education and/or the labour market. All experts invited have a minimum number of years of experience working in the educational or the labour market sector and they are knowledgeable and experienced in the sector they represent. Your participation will help us analyse the role of digital skills education both in formal as in informal such as the school or home, as well as the (digital) skills needed in the 21st century to cope with technological transformations in the labour market.

Purpose of the study

We are asking you to take part in this interview because we are trying to 1) acquire extensive knowledge and better measurement of digital skills, 2) develop and test a model predicting the complex impacts of ICT use and digital skills on children's wellbeing, 3) explain the ways in which at-risk children can benefit from online opportunities despite their risk factors, and 4) generate recommendations and strategies for key stakeholder groups to promote digital skills and wellbeing.

The knowledge acquired via these expert interviews will inform future project activities and ultimately be translated into specific digital skills measures and school education recommendations.

Procedures

You will be interviewed by a ySKILLS project partner who will ask you some questions about your opinions regarding the digital skills that youth should possess, if you find the development of these skills important and how these skills are currently being supported or developed in your sector (e.g. education, labour market, etc.). The interview will take approximately 90 minutes and will be carried out online (e.g. via a conference call or chat service) by members of the ySKILLS consortium, and/or partners appointed by them. There will be a maximum of two interviewers present. If a second person is present, he or she will take notes during the interview, but will not participate in the conversation. The interview will be audio-recorded. We will transcribe the recording fully or partly and remove any names.

Potential risks and discomforts

There are no anticipated risks to your participation. When you feel some discomfort at responding some questions, please feel free not to answer them. If you decide that you want to stop during the course of the interview, then it is possible to do so at any time, without having to give a reason. Moreover, you have a right to the deletion of your data from the project after the interview has concluded.

Potential benefits to subjects and/or to society

You will not directly benefit from your participation in this interview. However, your participation will be valuable to better understand which skills adolescents must possess to knowingly and critically use digital technologies for their wellbeing, education, social life and how they can build resilience against their potential negative impacts. The project will enable new strategies and policy recommendations in this area.

Payment/compensation for participants

You will not receive any payment for your participation in this interview.

Confidentiality

The data obtained from this interview, such as the interview recording and transcripts, will only be used by ySKILLS members and project partners for analysis and to inform the further project activities described above. It may also be included in possible project reports or research publications. The acquired data might moreover be used in future projects investigating a similar topic to advance knowledge in the area, but never for other purposes, such as economic gain. Everything you say to us is kept confidential.

We will change your name and other identifiable information in publications based on this research. All transcripts of the interviews will be pseudonymised before being shared with the researchers in the ySKILLS project as well as in any ySKILLS project publications, <u>unless explicit permission is obtained from you to share your name and affiliation in ySKILLS publications to acknowledge your participation in the project and/or to be cited in selected quotes from the interview.</u>

Accessing project outcomes

The "*Report on the interviews with experts on digital skills in schools and the labour market*" will be sent to you. This report together with all other project-related publications will be publicly available via the ySKILLS project website: https://yskills.eu/

Participation and withdrawal

You can choose whether to be part of this interview or not. If you volunteer to participate in this interview, you may withdraw at any time without consequences of any kind. During the interview, you may also refuse to answer any questions you are reluctant to answer, and still remain in the study. You may be withdrawn from this research if circumstances arise which warrant doing so (e.g. conflict of interest).

Further information

If you have any questions or concerns about the research, please feel free to contact the national project leader at any time: [NAME] + (EMAIL OF PROJECT LEADER FOR EACH COUNTRY) or the ySKILLS interviews coordinator.

Should you have any complaints or comments about the course of the interview and the procedures it involves in relation to your participation, you can contact the European interview coordinator of the ySKILLS project or the ySKILLS project coordinator. For any complaints or concerns related to ethical aspects of this study, you can get in touch with the Social and Societal Ethics Committee of the KU Leuven. Any complaints or comments will be treated in the strictest confidence.

We hope that we have provided you with sufficient information. We would like to take this opportunity to thank you in advance for your assistance with this research, which we greatly appreciate.

Kind regards,

[signature]

[NAME OF PROJECT LEADER FOR EACH COUNTRY]

Name of institution

Name of Unit or Department

Address

Work phone number

Informed Consent

Please read the statements below and return the completed form:

- I have been clearly informed about the nature of the research, as described in this fact sheet.
- I understand that my participation is voluntary.
- I understand that I can withdraw at any time without adverse consequences.
- I understand that information gathered will be used for the purposes of the project and may be used for academic articles and conference presentations in pseudonymised form.
- If the research results relating to me are used in publications, or are made public in another way, any data which could potentially be used to identify me, will be pseudonymised in order to safeguard my privacy.
- My personal data (e.g. quotes from the interviews) will be accessible to researchers in the ySKLLS project. In case of joint publications, this data may also be made available to partner institutions or individuals who are not part of the ySKILLS consortium.
- I understand that I will not receive any payment for participating in the interview.
- I agree, fully and voluntarily, to participate in this research.

	YES	NO
I have read the statements above and give consent to my participation in the interview.	☐	☐
I agree for the interview to be recorded for the purpose of data analysis and subsequent project-related publications.	☐	☐
I authorize the ySKILLS consortium to share my name and affiliation in ySKILLS publications to acknowledge my participation in the project.	☐	☐
In case quotes from my interview are selected for ySKILLS publications, I authorize the ySKILLS consortium to add my name and affiliation to these quotes.	☐	☐

Signed in duplicate:

Name: ………………………………………………………………….…

Date: …………………………………………………………………………...

Signature: