

Reconceptualising Early Childhood Literacies: An International Conference

7th to 8th March 2019

Manchester Conference Centre, UK



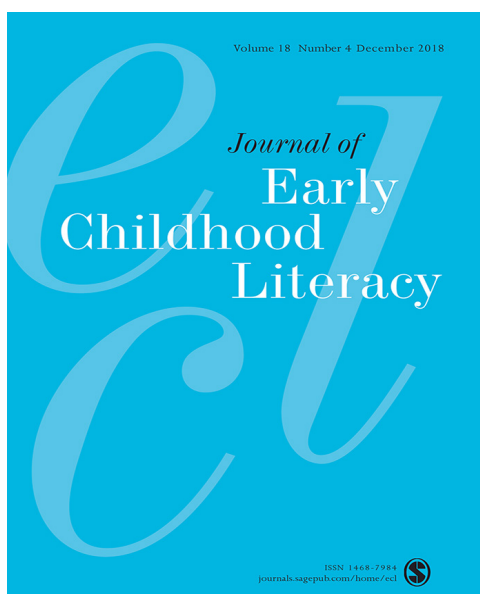
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DigiLitEY



MakeEY

Reconceptualising Early Childhood Literacies: An International Conference

Manchester Conference Centre, Manchester, UK

Thursday 7th March 2019

08.30 – 09.00

Coffee and registration

Room: Pioneer Room

09.00 – 09.15

Welcome and Introductions

Chair: Jackie Marsh, University of Sheffield, UK, Julia Gillen, Lancaster University, UK

Room: Pendulum Suite

9.15 – 10.00 Keynote A

Children as producers of digital text

Presenter: Lisa Kervin
University of Wollongong, Australia

Room: Pendulum Suite

10.05 – 11.20 Parallel Session 1

Room: Breakout rooms

11.20 – 11.40 Coffee

Room: Pioneer Room

11.45 – 13.00 Parallel Session 2

Room: Breakout rooms

13.00 - 13.55 Lunch

Room: Pioneer Room

14.00 – 14.45 Keynote B

The Role of Talk, the Body, and Digital Tools in eBook Composing

Presenter: Deborah Wells-Rowe
Vanderbilt University, USA

Room: Pendulum Suite



14.50 – 16.05 Parallel Session 3

Room: Breakout rooms

16.10 – 16.25 Coffee

Room: Pioneer Room

16.30– 17.15 DigiLitEY Management Committee Meeting

(DigiLitEY Management Committee members only)

Room: Leader Suite

18.30 Wine reception and Buffet Dinner

Room: Pioneer Room

Friday 8th March 2019

9:00 – 9.45 Keynote C

Making Noise! Toward a 'Sound' Theory of Young Children's Making

Presenter: Jon Wargo
Boston College, USA
Room: Pendulum Suite

9.50 – 11.05 Parallel Session 4

Room: Breakout rooms

11.10– 11.25 Coffee

Room: Pioneer Room

11.30 – 12.30 Special Session 5

MakeY Symposium (Finland, Iceland, Norway, Romania, USA, UK, Germany, Denmark)

University of Sheffield, UK
Room: Pendulum Suite

Chair: Jackie Marsh

Room: Pendulum Suite

12.35 – 13.30 Lunch

Room: Pioneer Room

13.35 -14.20 Keynote D

Tracing Intertextual Connections in Multimodal Composing: A Case Study of a Young Child's Filmmaking in the Early Childhood Classroom

Presenter: Cassie Brownell
University of Toronto, Canada
Room: Pendulum Suite

14.20 – 15.45 Parallel Session 6

Room: Breakout Rooms

15.50– 16.10 Coffee Break

Room: Pioneer Room

16.15 – 17.00 Keynote E

Play Matters: Entangled literacies in early childhood maker-spaces

Presenter: Karen Wohlwend, Indiana University Bloomington, USA
Room: Pendulum Suite

17:05 – 17.15 Closing remarks

Presenter: Guy Merchant, Sheffield Hallam University, UK
Room: Pendulum Suite

17.15 - Close



Thursday 7th March 2019

08.30 – 09.00 Coffee and registration

Room: Pioneer Room

09.00 – 09.15 Welcome and Introduction

Chair: Jackie Marsh, University of Sheffield, UK, Julia Gillen, Lancaster University, UK

Room: Pendulum Suite

9.15– 10.00 Keynote A: Children as producers of digital text

Chair: Jackie Marsh, University of Sheffield, UK

Presenter: Lisa Kervin, University of Wollongong, Australia

Room: Pendulum Suite

The digital age has transformed the types of texts young children produce. Many children routinely engage in diverse digital experiences, including digital gaming, web searching and to communicate with others, and with curriculum and entertainment-related content. When we embrace an expanded definition of both literacy (that is, literacies are multiple, both modally and culturally) and text (to include animation, video, music, live-action play and new multimodal forms) children are presented with an array of possibilities to demonstrate their meaning making. We know the importance of 'quality' in the selection of digital resources (such as apps, software and actual devices) to support children's cognitive, social and emotional development. However, the contexts within which these resources are used, and the purposes for their use, enable (or restrain) certain kinds of interactions. It is these interactions that require further investigation. Examining interactions from what digital resources enable, in connection with communications from adults and peers in specific contexts, enables us to further understand how it is that text production is initiated, structured, and responded to during opportunities for digital text production. This presentation shares examples of both process and product as children produce digital texts. The multibodied and multispatial aspects of specific interactions will be explicated to reveal the complexity of the process and to discuss sustained engagement, feedback and collaboration, and literacy learning.

10.05 – 11.20 Parallel Session 1

1.1 STSM reports

New initiatives in research on young children and digital media: Outcomes of four years of scientific missions from the Digilitey COST network

Chair: Roel van Steensel, Free University Amsterdam, The Netherlands

Room: Graphene 1

Over the past years, many young researchers have conducted so-called Short-Term Scientific Missions (STSM's) in the context of the Digilitey COST network, laying the foundations for new international cooperations and carrying out innovative studies on young children's digital media use. In the poster session, several researchers will present their (ongoing) work resulting from the STSM's they were involved in.

Digital technology empowering young children as museum visitors

Zeljka Miklosevic, University of Zagreb, Croatia

This presentation aims to give insights into the behaviors of young children while using a mobile educational app in an art museum as an informal learning context and emphasize the impact of the use of such technology on young children as museum visitors. Research was carried out at the Kunsthistorisches Museum in Vienna and was based on multimodal and constructivist learning theories, drawing most significantly on Falk and Dierking's contextual model of learning. Research participants were seven- and eight-year-olds who visited the museum with a parent, at times accompanied with a younger or older sibling. Research data were collected through participating observation by focusing on the interaction between the research participants and the digital resource used by them, the physical space of the museum and their parents. Interviews were conducted with the parents and children after the visit with the aim to explore their experiences with technology in the museum and at home. Results show a positive impact of the app on the children's experience in that it motivated them to explore self-sufficiently and self-confidently the space of the museum and displayed objects, and that it facilitated autonomous learning experience and pride in the gained knowledge.

Scaffolding family's digital safety

Teresa Sofia Castro, Universidade Nova de Lisboa, Portugal

As connected devices become rapidly and increasingly entrenched in families dynamics, children's play and acquisition of new literacies and skills, and assisting parenting daily practices, the need arises to continually pay attention to these non-static cir-

cumstances. When interviewing families, children's good development and safety (online and offline) are matters of big concern for parents as my STSM research in Belgium, conducted in the context of the Digilitey COST network, had demonstrated (Castro, 2017). Nevertheless, when analysing parents' accounts and the contradictions enclosed in their talks, the confusion and lack of understanding in terms of online safety are also very clear. With this in mind and considering the fast pace of social and technological advances and challenges, last August I have submitted a STSM proposal to develop a board game based in dynamics borrowed from games like Party & Company and Monopoly to help families to reflect and learn about online safety, literacy and digital skills in a playful and learning manner. In my contribution I present the outcomes of my new STSM supported by data in terms of showing if and how this strategy may contribute for scaffolding family's digital practices with an impact on mediation of children's use of technology

Autoethnography and the makerspace related experiences of a parent/researcher in Romania

Monica Mitarca, UCDC, Romania

At the crossroads between the descriptive, monographical research of the makerspace culture in Romania as part of the MakeY project and the parenting efforts of a mother of a 8 year old, I became engaged in an autoethnographic approach of the educational activities for children, makerspace-related, in Romania (mainly, Bucharest and Braov). Mapping these activities was a part of mapping the makerspace movement and finding its specificities. It was doubled by the constant recourse to the literature review and the other efforts in the Makey project. The year-round attendance to almost all the workshops offered to children around the age of 8 was documented in the form of photo's and video's and resulted in a dense material, recently corroborated by a series of interviews made with makerspace owners or founders, conducted by the Romanian MakeY team. During my stay in Lisbon, as part of the STSM granted by Digilitey, I analyzed the materials and the interplay of my two roles in it. With an emerging middle class, the workshops and extracurricular activities involving new technologies offered to children in main cities of Romania appeal mostly to parents' sense of investing in the children's future. While there are long term projects, most of the workshops are offered for a weekend or less, adjusting the educational goals to the lack of financial availability, time constraints or even for lack of a personal long-term involvement. The findings will inform a volume on the makerspace movement in Romania.

Gaps in understanding and support-

ing the early language and literacy learning of children of migrant backgrounds: A case study of book apps

Sumin Zhao, University of Southern Denmark/University of Edinburgh

In this contribution, I bring together the findings from my STSM project and a subsequent yearlong ethnographic study with a group of multilingual children aged between 5 and 6 in an English-curriculum international school in Denmark. Using book apps (Zhao & Unsworth, 2016, Zhao, forthcoming) as a case study, I aim to illustrate the different types of 'gaps' that exist in the early language and literacy education of migrant children in the European context. Specifically, I will discuss the gaps between the design and the distribution of apps, the school curriculum and classroom practices, and the everyday reality of migrant children. The dataset consists of interviews (with BolognaRagazzi Digital Award-winning designers, school teachers, and children and their parents), app and picture book design literature, fieldnotes and recordings. Through this discussion, I hope to reflect on the role research and researchers play in mediating among various agents and mitigating social-cultural factors that can negatively impact the early language/literacy leanings of the growing numbers of migrant children in Europe.

Critical factors in teacher learning in Mobile Learning Era

Marco Bento, University of Minho, Portugal

In the COST Project we conducted the STSM from March 6 to 10 (2017) with the accompaniment of Professor Diana Bannister at the University of Wolverhampton. The entire research process had its turning point from the moment we performed the STSM, since the inputs given by the various specialists that we contacted during this period helped to turn the research focus, which focused much more on the transformation of pedagogical practices of teachers rather than the use of different mobile technologies with students, as the target audience of the research. Thus, in this research, we questioned the teacher's position regarding the lifelong learning process. We try to understand how teachers develop their pedagogy in the era of mobile learning. The teachers expressed their opinion about an experience of a 3 years training process. The results suggest the existence of four dimensions in professional learning: Teacher Attitudes, Learning Contents, Learning Context and Learning Processes. The methodology used was Design Based Research, which focuses on real educational contexts, the design and testing of interventions, the use of mixed methods of data collection, involving several interactions, resulting from the

partnership between research and teachers, with the concern of the impact in practice.

Moving Beyond Narrative Learning in the Digital Era

Cristina Sylla, University of Minho, Portugal

With this paper we aim to present Moving Beyond Narrative Learning in the Digital Era (MoBeyBou) (<http://mobeybou.com>), a funded research project currently in progress in Portugal.

MoBeyBou builds upon key dimensions in current international frameworks for early years' education, specifically those focusing on the role of digital, discursive and multicultural competences, setting out specifically to contribute to the development of knowledge about the learning and socializing potential of digital manipulatives (DM) among young children.

MoBeyBou extends the narrative potential and functionalities of a previous DM (<https://sites.google.com/site/hybridlearningmaterials/>) that uses blocks for story creation. It follows a design-based research methodology and a user-centered approach, involving multicultural preschoolers, first and second graders and their teachers in the design of a wide range of multicultural characters and scenarios for story creation. Professional designers, electronic and computer engineers are also part of the extended team of developers.

Once the new technical development is complete, MoBeyBou will look into the narratives produced through the manipulation of the DM as well as into the collaboration that is established among culturally diverse children who are brought together to create stories.

ICT and Media Education in university-level Early Years Teacher Education

Saara Salomaa, National Audiovisual Institute, Finland

More digital practices and media education have been called for in early childhood education (ECE), taking into account the role of media in children's lives in contemporary societies. Many concerns related to practitioners' beliefs, attitudes, knowledge and skills have been expressed, but how universities are responding to this new challenge with 21st century ECE teacher education? This presentation discusses, on the one hand, the expectations for ECE in relation with media education and information and communications technologies (ICT), set by e.g. national curricula, public and academic discussion and policy documents and, on the other hand, media and ICT as parts of initial teacher education. The related study, a part

of my PhD research, is based on curricular texts of seven Finnish universities providing qualifications for ECE teachers. According to the analysis of these texts, media education and ICT are still marginal topics in Finnish ECE teacher education. Good pedagogical practices are expected from practitioners, but what if even newly graduated educators are not prepared to carry out these 21st century practices?

1.2 WG1 Symposium - A day in the digital lives of children aged 0-3: the tablet and TV

Chair: Julia Gillen, Lancaster University, UK

Room: Pendulum Suite

Presenters: Cristina Aliagas, Yehuda Barlev, Rosie Flewitt, Ana Jorge, Kristiina Kumpulainen, Jackie Marsh, Mitsuko Matsumoto, Raquel Pacheco, David Poveda, Helena Sandberg, Heidi Sairanen, Fiona Scott, Ulrika Sjöberg, Ebba Sundin, Vitor Tomé

Structure of presentation

This presentation will be in the form of a collective, rather than the traditional symposium format of several connected papers. Our collective presentation will have three parts.

Part 1

We will begin with an introduction to the project, the Day in the Digital Lives of Children aged 0-3, by members of DigiLitEY Working Group 1 Children in Homes and Communities. We will briefly explain the rationale for the project, before moving to the project design including methodological and ethical dilemmas.

Part 2

The second part of the presentation will centre on two technologies in the home: the TV and the tablet. Each presenter will briefly describe the place of the TV and tablet in the family studied in terms of children's engagement with the technology during the 'day' and the family's attitudes towards it as explored through direct observation and interview data. This will be illustrated through still images where permissions allow and/or diagrams.

Part 3

Our discussant, David Poveda, a member of the research team, will draw some threads together, discusses implications for understanding the place of technologies in the lives of young children and their families, and open up the discussion with the audience.

Introduction and rationale

The 'A Day in the Digital Lives of Children aged 0-3'

project aims to identify the way in which digital technologies inform the lives of very young children and their families. Recently, the digital practices and literacies of children under eight have been the focus of relevant research, and the area of study is rapidly growing (e.g. (Chaudron, 2015; Chaudron, Di Gioia, & Gemo, 2018; Sefton-Green, Marsh, Erstad, & Flewitt, 2016) since a wide range of digital devices are present in children's lives even from the first months of life (e.g. (Marsh et al., 2015). Children are going online at younger ages, too, which may involve risks as well as providing new developmental and learning opportunities (Byrne et al, 2016).

The TV and tablet were selected as our focus for this presentation of our research they are often but not always present in the children's lives and we found a great diversity in how they are engaged with by the children. Both are much studied technologies, although the place of the TV in the home and children's development is an issue that may have waned in terms of attention by researchers in recent decades. Nevertheless, there is no evidence that its place in young children's home has necessarily diminished; see for example contemporary studies by Chaudron, Di Gioia, & Gemo, (2018) across Europe and by Huber, Highfield, & Kaufman, (2018) in Australia. Among the participant families there was evidence of increasing use of digital television, or integrated with smartphone use (e.g. through Chromecast). On the other hand, tablets, as a relatively new technology, are the focus of much research attention on mobile (portable) media practices as well as through the previously mentioned more comprehensive surveys of use (Haddon, 2013; Mascheroni & Cuman, 2014).

Participants and methodology

The researchers visited 14 families, with the focus on one child in each family (See Table 1). The researchers used the 'Day in the Life' (DITL) methodological approach (Gillen & Cameron, 2010; Gillen et al., 2007). After recruitment, there were three visits to each family in 2017/ early 2018:

- 1) A familiarisation and pilot visit
- 2) During the main 'Day in the Life' the child's activities are recorded for a minimum of six hours in total
- 3) The researchers return to the family with a video of extracts from the day, totalling around half an hour in length. They discuss this data with the family, while (audio) recording this discussion.

In addition, researchers completed a survey regarding the technological devices owned by the family, devices and applications accessed by the child, and the competences demonstrated by the child.

Table 1: Participants with country and age

Case	Country	Name of child (pseudonym)	Age of child on day of filming
1	Finland	Emma	34 months
2	Finland	Julia	35 months
3	Israel	Dana	30 months
4	Portugal	Vicente	33 months
5	Portugal	Matias	27 months
6	Portugal	Tomás	21 months
7	Spain	Gloria	21 months
8	Spain	Roser	21 months
9	Sweden	Anna	30 months
10	Sweden	Oscar	30 months
11	UK	Lily	14 months
12	UK	Petra	14 months
13	UK	Charlie	32 months
14	UK	Wanda	9 months

We must emphasise that the table above includes the country in which the child is located, but this is not to suggest that nationality or location is a more important influencing factor than any other in what is sometimes called the "domestication" of technologies (Haddon, 2011). Nor should our dataset be taken as any claim to representativeness. Rather, we seek to add to a qualitatively rich picture through detailed case studies, although elements of our methodology do allow for some comparisons.

Towards findings and discussion

Detailed analysis of our findings is underway. One preliminary caution is that owing to technological convergence, it is in some cases difficult to assign a piece of technology to a specific category. Televisions are easier: we already know that 7 of our families had a standard TV set and 10 a TV connected to the internet. Tablets are far harder to quantify in part owing to the varying ways in which they can be defined. iPads are a prototypical example of a tablet and appeared in 6 households. Some technologies are tablets specifically designed for children other devices have the potential to be used as a tablet, or alternatively quite otherwise, such as Microsoft Surface Pro. Therefore in our presentation each participant will follow the family in the case they are studying inflected through their own insights into identifying and describing the place of the "TV" and "tablet".

We are interested in the "set of social and material practices" that, as Law, (2016) outlines, can be described as how technology or perhaps better techno-

science shapes the world and is shaped by the world. Attending to these practices we are attuned to details of space and time, the materiality of artefacts and the complex ways in which people, especially the young children in our families, are involved.

1.3 WG3 Symposium - Cross-disciplinary and international insights into children's reading on screen

Chair: Natalia Kucirkova, University of Stavanger, Norway and Adriana Bus, rije Universiteit, The Netherlands

Room: Cotton Theatre

This symposium brings together a diverse range of researchers who employ both qualitative and quantitative research methods to study the design features and theoretical foundations related to children's reading on screen. Paper1 reports the findings from a large-scale experimental study that explored parents' support of children's learning of new words during shared book reading with e-books. The focus is on the use of embedded dictionaries in the e-books, which complemented parents' support. Paper2 provides an in-depth exploration of children's use of e-books at home, expanding theoretical explanations for children's engagement with story apps. Paper3 zooms in on shared parent-child reading of e-books in bilingual families. Maltese and English e-books are explored in relation to parents' and children's response to their features and content representation in two languages. Paper4 outlines the development of an innovative tool for evaluating children's picture book apps in Norway. It details the tool's features that correspond to theoretically-grounded affordances of children's e-books. Paper5 extends the focus on narratives by paying attention to children's participation in a design-based project focused on children's active use of digital manipulatives and story co-authorship. Collectively, the papers consider the affordances of story apps and e-books designed for young children and based on empirical and theoretical analyses, identify best design principles. The authors contribute insights to theoretical models of children's reading in the digital age.

Can e-books support parental mediation to enrich the vocabulary of children from lower socio-economic groups?

Ofra Korat and Daphna Shneor, Bar-Ilan University, Israel

We examined whether an e-book with a dictionary would support parents' mediation of new words

during shared book reading, more than the child's independent reading of an e-book with and without a dictionary. The participants included 128 kindergartners and 64 mothers who were randomly divided into four groups: independent reading of the e-book with a dictionary; joint mother-child reading of the e-book without a dictionary; joint mother-child reading of the e-book with a dictionary, and independent reading of the e-book without a dictionary (control). For each target word, the dictionary presented (1) word meaning, (2) word meaning within the story context, and (3) a combined meaning. Pre- and post-tests included receptive and expressive understanding of the dictionary words. E-books were read four times. Reading the e-book with a dictionary and maternal mediation were most effective for receptive and expressive word learning, followed by independent reading with the dictionary. Mothers who read the e-book with a dictionary mediated at a higher level than mothers who read without a dictionary. The intervention contributed to advancement in learning new words beyond children's initial vocabulary level. The research implications are discussed in relation to design of effective children's e-books.

How does the interactivity of storybook apps frame the reading experiences of emergent readers? A small-scale ethnographic study with families

Cristina Aliagas, Universitat Pompeu Fabra, Spain

Little is known about how the interactivity of storybook apps frames an emergent reader's experience with children's literature and parent-child reading interactions. In this talk I will report on some data on the effects of screen-based interactivity on children's engagement with storybook apps during family shared book reading—a study co-authored with Ana M. Margallo (Aliagas & Margallo 2015; Aliagas & Margallo 2016). Data were gathered in a two-year, small-scale ethnographic case study with four families living in Catalonia, in Spain. Drawing on Sipe's (2007) five categories of children's responses to picturebooks (analytical, intertextual, personal, transparent and performative), data analysis focuses on the complex interplay between the storybook app's interactive features and the children's responses to them. The findings show that the interactivity that a storybook app affords tends to implicate the reader in the story, positioning him/her as a collaborator, storyteller, an author or an internal character in the fiction and that this can materialise in exciting narrative strategies that can trigger powerful responses to digital literary texts in emergent readers. These responses include playing, creating new fictions or engaging emotionally with the story. The findings

of the study also show that shared family reading events involving the iPad reinforce the child's pro-activity, which implies deep transformations in their reading experiences.

Facets of parent-child engagement during shared e-reading in Maltese bilingual homes

Charles Mifsud and Rositsa Petrova, University of Malta, Malta

Our research project explored the home digital book reading routines of four Maltese bilingual families (Maltese and English) with their 5-7-year-old children. The families, who were at different points of the bilingual spectrum, were recorded sharing digital books in both languages at home.

This presentation will focus on the video-recordings of sharing one Maltese and one English digital book by each family. We used thematic analysis (textual) to analyse both parents' and children's talk during the reading sessions. Their comments were categorised into two main groups - comments related to the story content (about the character, what will happen next, etc.) and comments related to the story features (about where to tap, colours, sounds, etc.). Then we analysed the parent's and child's physical engagement with the apps while reading. For this we looked at the child's tapping behaviour on screen and child's gestures around the screen, as well as the parent's tapping behaviour on the screen and parent's gestures around the screen.

Data was also collected from the families about their reading habits, their use of digital technologies, and their experience when reading the digital books. The discussion synthesises the insights with some recommendations for reading digital books in bilingual families.

VEBB: Developing a tool for evaluating children's picture book apps for use in dialogue-based reading

Trude Hoel and Margrethe Jernes, University of Stavanger, Norway

VEBB is a research and innovation project funded by the Research Council of Norway. The objective of the project is to develop an online evaluation tool for picture book apps, enabling teachers to assess the appropriateness of different apps for dialogue-based reading in kindergartens, fostering children's language learning and comprehension. In this paper, we will present the evaluation tool and a model to ensure the utility value in kindergarten

practice as well as in professional development of new kindergarten teachers.

The evaluation tool takes into consideration key parameters in children's and adults' use of picture books and apps during dialogue-based reading in groups of up to six children (primarily, 4-5 year olds). These parameters include audiovisual and ergonomic (haptic and tactile) affordances of the medium as well as motor, attentional-perceptual, socio-emotional and cognitive dimensions of children and adults in shared reading settings, established via an observational study. Based on the findings of the study, as well as on the analyses and evaluation of the quality and significant features of the books and apps (e.g., form and structure, multimodality, aesthetics, narrative style, interactivity), the online tool aims to capture dimensions of the medium, which are key to successful adult-led dialogue-based reading with young children.

Moving Beyond Narrative Learning in the Digital Era

Cristina Sylla and Íris Susana Pires Pereira, University of Minho and Mafalda Mendes, University of Coimbra, Portugal

This paper provides insights into a work-in-progress project called Moving Beyond Narrative Learning in the Digital Era (MoBeyBou)), based in Portugal. MoBeyBou builds upon key dimensions in current international frameworks for early years education, specifically those focusing on the role of digital, discursive and multicultural competences. It aims to contribute to the development of knowledge about the learning and socializing potential of digital manipulatives (DM) among young children.

MoBeyBou extends the narrative potential and functionalities of a previous project on hybrid learning materials, that used blocks for story creation. It follows a design-based research methodology and a user-centered approach, involving multicultural preschoolers, first and second graders and their teachers in the design of a wide range of multicultural characters and scenarios for story creation. Professional designers, electronic and computer engineers are also part of the extended team of developers.

Once the new technical development is complete, MoBeyBou will look into the narratives produced through the manipulation of the DM as well as into the collaboration that is established among culturally diverse children who are brought together to create stories.

1.4 Individual papers

Chair: Guy Merchant, Sheffield Hallam University, UK

Room: Conference Room 2

Determinants of self-reliant and shared use of print- and screen-media in zero-to-six-year-olds.

Peter Nikken, Erasmus University Rotterdam, The Netherlands

Children use media technology at younger and younger ages (Ofcom, 2017; Palaiologou, 2016; Rideout, 2013), usually for relaxation – watching YouTube clips – education, or for communication – Skype and phone calls (Nevski & Siibak, 2016; Plowman, McPake, & Stephen, 2008). Although, shared media use with parents together is very important for young children's development (Krcmar & Cingel, 2014; Rasmussen et al., 2016), it seems that many parents equip their young children deliberately with their own devices and apply mobile media as a 'babysitter' to keep their children occupied or create moments of rest in the house (Haines et al., 2013; Kabali et al., 2015; Rideout, 2013).

Since we know little about the pedagogical context of how young children consume media at home, i.e., to what extent they use devices and media content alone or with family members, this study investigated (a) how young children (0-6 years) use media devices and content, (b) to what extent they share these media with parents, with siblings, or use media on their own, and (c) which family, parent and child characteristics explain differences in shared or solitary use.

Data were gathered via an online survey among 1,085 parents. According to these parents, children's print- and screen-media use varied from 49 minutes/day (low users) to 280 minutes/day (very high users). Children were most involved in watching tv and YouTube (78% did so regularly), followed by (online) reading (44%), educational apps (44%), creativity apps (35%), adventure games (27%), and contacting others (27%).

Adventure games and creativity apps were mostly used alone, whereas watching television programs or YouTube-clips, reading (online) books and contacting others happened more with parents together. With more siblings at home, media were often shared with siblings and less with parents, whereas older and more media-literate children mostly used media alone.

The results indicate that parents rather prefer to share traditional media, than contemporary technologies with small screens. Also, they seem to rely on games and creativity apps as a convenient 'babysitter'. Conform Nevski and Siibak (2016), siblings too seem to relieve the parents from minding their young child. Solitary use and use with siblings, may however increase the risk that children use content for which they are still too young. The data may inform campaigns that empower specific groups of parents in how to mediate their young children's media use.

Use of touchscreen technology by 0-3 year old children: Parents' and Early Childhood educators' views, practices and perspectives in Norway

Maria Dardanou and Torstein Unstad, The Arctic University of Norway, Norway

This paper discusses findings from two online surveys addressed to parents and Early Childhood educators' about the use of touchscreen technology by children 0-3 year old in Norway. The purpose of this study is to investigate parental and Early Childhood Education (ECE) practices, views and perspectives related to children's use and explore them in relation to wider cultural discourses around early childhood. This study is a part of an international project (O'Connor et al., 2017), and builds on previous research on ECE educators' beliefs and attitudes (Hatzigianni & Kalaitzidis, 2018) and research by the Literacy Trust (2017) and DigiLitEY (2016, 2017). The study is based on the concept of educators' experiences as being influenced by a wide range of social, cultural and personal factors and Bronfenbrenner's (1979) ecological systems theory is used as an interpretative framework for the questionnaire and the data. Additionally, the ecological systems theory is applied to investigate the meeting of two micro-systems (parents and educators) in relation to very young children's use of touchscreen technology. At the same time, several dominant discourses of childhood are used in the data analysis in order to explore what parents and educators perceive as potential benefits or disadvantages of children's uses. All survey respondents were anonymous, are treated confidentially and approved by the Norwegian Social Science Data Services (NSD). The findings demonstrate some incoherence between beliefs among teachers and parents when it comes to use of touchscreen technology by very young children. These findings are discussed in terms of practices of parents and educators, and further research is implied.

Mother-child shared reading with dig-

ital and print books

Gulsah Ozturk, Istanbul Kultur University, Turkey

The aim of this study was to explore the quality of mother-child interactions in shared reading with a traditional print book and with an electronic book on an i-Pad. Parent-child shared book reading has been identified as one of the most important contributors to young children's early language and literacy skills (Neuman, 1996). A Turkish mother and her 5year old son were observed at home when they were reading the printed book *Ay'ı kim çaldı?* (Who stole the moon?) and its exact digital match. The interactions were videotaped and transcribed to provide information about mother-child talk. The mother-child interactions were analysed in terms of (a) the amount of talk depending on the book format and (b) the content of mother-child talk by addressing focus of the talk, expansion of ideas and behavioural-related talk. The results showed that print book reading engaged the child in higher-level thinking compared to digital book reading. With the greater frequencies of nonimmediate talk in the print book reading than digital book, the child had more chances to expand his thoughts during print book reading. Also, results suggest that digital books encourage more behaviour-related talk in shared reading. The findings are discussed.

Theorizing Early Literacy in the Public Library

Tess Prendergast and Karen Sharkey, University of British Columbia, Canada

As two Canadian public librarians who are both new scholars in the field of early literacy, we believe that public libraries are sites of social engagement, creation, and multimodal ways of learning. However, children's librarianship as a profession lacks a cohesive body of research and related theoretical underpinnings that allow practitioners and scholars to critically examine early literacy in public libraries (Stooke & McKenzie, 2011). As both veteran children's librarians and newcomers to early literacy research, we are interested in addressing this gap and conceptualizing new ways of understanding early literacy within public libraries. Our own dissertation studies have led us to two broad socio-cultural lenses through which to view early literacy within public library contexts. These are: Bronfenbrenner's bioecological systems framework, in which children's development is impacted by interactions within and across social systems involving objects, symbols and people (Bronfenbrenner, 2005; Hayes, O'Toole, & Halpeny, 2017; Swick & Williams, 2006); and the (im)material nature of literacy (Burnett, Merchant, Pahl, & Rowsell, 2014), which considers the material and spatial aspects of literacy and how these interact, shape and are shaped by global and local discourses and people's social practi-

es of literacy (Flewitt, 2013; Flewitt, Messer, & Kucirkova, 2014; Gee, 1996; Rowsell & Pahl, 2011; Street, 2003). We believe both theories are valuable to us as we attempt to address the significant research gap regarding early literacy within public library contexts. We begin with a review of the relevant literature about early literacy and public libraries, with a particular emphasis on the work of Nichols (2011); Pahl and Allan (2011); Stooke and McKenzie (2011) and Celano and Neuman (2001).

We then fully explore each of our theory's relative merits and how they have been used in prior research. Next we will explain how we have constructed a theoretical model that draws on both theories and explore how we apply this composite lens to our own emerging early literacy research as we seek to gain a better understanding of the impact of the literacy, learning and cultural resources found within public libraries.

1.5 Individual papers

Chair: Karen Wohlwend, Indiana University Bloomington, USA

Room: Graphine 2

Politics of difference: Discourses on Multiliteracies in pre- and primary classroom studies

Reijo Kupiainen, Pirjo Kulju, Daranee Lehtonen, Anne Jyrkiäinen, Marita Mäkinen (Tampere University, Finland) and Angela Wiseman (NC State University, USA)

Today meaning making is highly multimodal as children use a variety of tools such as images, tablets and screens. Furthermore, classrooms are more diverse due to gender and ethnic differences, life experiences and various cultural settings. These changes have challenged educators to re-conceptualise pedagogy in pre- and primary education. For this, multiliteracies approach has provided tools based on New London Group's manifest (1996). A few decades later, multiliteracies continues to influence education policy and practice, for example, multiliteracy was included into new Finnish National Core Curriculums for Pre-primary and Primary education.

Previously, we conducted a review of studies of multiliteracies pedagogy in classrooms (n=67) (Kulju, Kupiainen, Wiseman, Jyrkiäinen, Koskinen-Sinisalo & Mäkinen 2018) exploring how the concept of multiliteracies has been used and understood in primary classroom research. Our data included peer-reviewed articles published from 1997 to 2014. In this study, we continued our research on peer-reviewed articles published during 2014 to October 2017. We searched for studies related to multiliteracies, occurred in classroom contexts and focused on children aged 4–12. The search resulted in 39 articles.

Because the concept of multiliteracies have a quite strong role in the education policy we were interested to study how it is understood in studies of multiliteracies and how it is positioned in different countries and in relation to curricula and classroom pedagogy. We answer to this research question by examining in meta-level studies which focus on

pedagogies of multiliteracies in pre- and primary classrooms. We focus on discourses of multiliteracies, where positioning comes visible. It is also worth to ask what changes had happened in the pedagogy of multiliteracies when digital and multimodal practices have become more common at schools.

We found that nothing has changed much since our previous data analysis (Kulju, Kupiainen, Wiseman, Jyrkiäinen, Koskinen-Sinisalo & Mäkinen 2018): the discourse in the articles is still based on differences and includes confrontation between traditional monomodal and new multimodal text worlds, traditional text-based and multimodal teaching as well as formal and informal learning. However, only few studies focus on possibilities to use any digital devices or content in learning or on different aspects of cultural and linguistic diversity. Our findings illustrate how multiliteracies have been recently incorporated into pre- and primary classrooms. The findings should shed light on education policy and practice towards multimodal meaning-making world confronting our children.

Promoting Young Children's Scientific Literacy: Scientific Literacy as a Social Practice

Jenni Vartiainen, University of Helsinki, Finland

In this presentation, we consider scientific literacy from the viewpoint of multiliteracy. According to scholars, scientific literacy is the main aim of science education, but the definition of scientific literacy is vague. Scientific literacy is often understood as a gradually developing individual skill. This empirical case study discusses young children's scientific-literacy practices in the light of theories that stem from sociocultural traditions and theories of multiliteracy. Green's 3D model of literacy has proven useful in the frameworks of digital literacy and maker literacy, for example. This model comprises three main domains that are present in literacy practices: the operational, cultural, and critical. Here, we aim to map young children's science practices at different phases of inquiry using the 3D model to better understand their participation in scientific literacy.

Video and observational data were gathered in the context of a Finnish preschool over a six-week period. Children (n=31) took part once a week in Poetry Science activities that were initiated with the Poetry

Science Cards developed in the Joy of Learning Multiliteracies (MOI) development project. The pedagogical principles of Poetry Science activities embrace child-centered, collaborative, and creative design, and they were enriched with multisensory, playful, and story-like approaches.

The multimodal analysis methods focused on children's science practices in the process of collaborative scientific inquiry. The results show that scientific literacy among young children can be understood as a dynamic social practice. During the phases of inquiry, children engage in practices that can be mapped according to operational, cultural, and critical dimensions. Therefore, we argue that scientific literacy among young children can be understood as a repertoire of ways of participating in the culture of science-related practices. Providing young children with possibilities to act in multisensory, playful, and story-like science learning environments with rich social interaction, creativity, and innovativeness can offer new possibilities for young children to engage in science. Multiliteracy lenses on children's science practices offers a different perspective on how to meet the aims of science education, which may be understood as raising scientifically literate citizens who have a positive attitude towards science, an understanding of the social processes of science, and the ability to critically evaluate the science related texts and conversations they encounter in daily life. Children benefit from understanding how they can participate in emergent science culture, as it is constantly present in their living cultures.

Digital literacy and social competencies in tablet activity in kindergarten

Ingvild Kvale Sørensen and Pål Aarsand, Norwegian University of Science and Technology, Norway

The statement "children are competent actors" has become one of the pillars of childhood studies. This assumption generates a range of different questions, for instance what does it mean to be competent? Competent in relation to what, whom, and when? Assuming that competence is something that human learn from participating in sociocultural practices we direct our attention to young children's everyday life in kindergarten and their use of digital technology to investigate how children participate in digital literacy practices and what it means to be an actor. In this paper we examine different strategies to include but also to protect one's own playing space when looking at one child's turn in having a tablet in a kindergarten setting and what type of activity is produced.

The paper is grounded in childhood studies and draws on two different, however not mutually exclusive, theoretical frameworks to explore tablet use in a kindergarten setting. On the one hand, we make

use of Goffman's interactionism, while on the other hand we draw on a socio-technical perspective from science and technology studies (STS). Within childhood studies, there has been a call to decenter the "child" in research and the need to encompass what surrounds the child. Employing a socio-technical perspective can be a tool to move beyond the classical dichotomies (for example children as competent or incompetent). Making use of these two theoretical frameworks enable us to decenter "the child" and rather examine what is being produced in tablet activity in a kindergarten setting.

In this paper we highlight the socio-technical organization of a tablet activity focusing on how the distribution of positions and agency create conditions with regard to participating in digital literacy activities. We explore how a child protects her turn and her control over the tablet on one hand, while also including others, making the tablet use a collaborative activity on the other hand. How do the children participate in literacy activities that involve peers, adults and digital technologies? What kind of literacy practices do children create in and through socio-material interaction (intra-action)? We find that children through participating in digital activities display their social and digital competencies as well as incompetency and that participation can be seen as a site of learning for these different kinds of competencies.

11.20 – 11.40 Coffee

Room: Pioneer Room

11.45 – 13.00 Parallel Session 2

2.1 Symposium - Reconceptualising early childhood literacy beyond anthropocentricity

Chair: Kate Pahl, Manchester Metropolitan University, UK

Room: Pendulum Suite

The papers in this panel share an interest in the materiality of young children's literacy practices. Firstly, we emphasise the materiality of the moving, sounding, speaking, gesturing human body and, following MacLure (2013), argue for greater consideration of the materiality of language and multimodal communication. Secondly, we understand the human body as unbounded and thus argue that literacy practices are always more-than-human. We offer possibilities for reconceptualising young children's physical and digital literacies beyond anthropocentricity (human-centric) and logocentricity (word-centric) by asking the following questions;

- How can research better account for what

might be untranslatable, un-representational or incommensurate in the field of early childhood literacies?

- How can a language gap (for example, between different languages, between young children and adults, between human and non-human) be rethought as enabling, generative?
- Could new thinking about children's literacies arising from this work, provide an adequate account of, or critical position against, the pathologisation and inequalities families and young children experience in their daily lives?

In a context in which anxiety about young children's talk and emergent literacies are an increasing concern of Western governments, we propose that conceptualising young children's language and literacies as more-than-human offers a much needed and generative contribution to the debate.

Symposium will comprise of the following four papers, following by time for discussion;

Using the virtual to explore what happens when adults "don't talk" but instead use space, sound, materials, and bodies to converse with children?

Charlotte Arculus and Christina MacRae, Manchester Metropolitan University, UK

We use video vignettes to explore temporal arts-based practice in a context of anxieties about language delay in 2-year old children from lower socio-economic backgrounds. We wonder what thinking-with-video could offer us as a philosophical exploration of early years pedagogies. In particular we ask how this digital media "appeals to our naïve physics: the spatial thinking we practised as children ... as if our cognitive, linguistic thought had never come" (Frampton, 2006:203). Contesting figurations of the human as either a cognitively constructed animal, or a discursive and chattering animal (Massumi, 2002:38), we are interested in thinking about what happens when adults "don't talk" but instead use space, sound, materials, and bodies to converse with toddlers. We use data produced in collaboration with art-practitioners who planned "no-talk" sessions, where gesture, materials, music and song provided the basis of dialogue. With the help of a specially constructed toddler-cam on wheels, we explore unfolding events of response between human and non-human bodies. We attend to emergent gestures, riffs and murmurations, to consider how these might be communicative (or not) and how they might alert us to virtual and improvisatory kernels of bodily expression that might extend forward, adhering to literacies to come.

Vibrations in place: sound and language in early childhood literacy practices

Abigail Hackett and Michael Gallagher, Manchester Metropolitan University, UK

This paper explores how close attention to sound can help to rethink literacy in early childhood education. Through an analysis of text, audio, video and photographic data from a sound walk undertaken with a parent and a child, we make two arguments. First, contrary to skills-based approaches that abstract literacy from context, we show how literacy emerges from vibrational entanglements between bodies and places. We provide examples of how listening and sound-making unfold together in place, as sound moves between different material bodies, including children, animals, objects, buildings, and landscapes. Our analysis suggests that a wide range of sound-making and listening practices, not just those focussed on words, should be valued in early childhood literacy. Second, we demonstrate how sound also transcends bodies and places through its multiplicity, ephemerality and fluidity. We draw on the more-than-human semiotics of Eduardo Kohn to analyse how sounds operate as relational signs between human and non-human entities, using his ideas to move beyond human-centred, symbol-centred practices of literacy.

Visual methodologies after the post-human turn: Child participatory research involving action cameras in an after-school club.

Lucy Caton, Manchester Metropolitan University, UK

The paper draws on a doctoral study involving action cameras in an after-school club. I argue for a need to further theorise the visual ontologies that underpin the choices and production involved in the use of action cameras in educational research that recognise the camera and resultant video beyond simple passive and observing instruments. I theorise the camera and resultant video, as performative-material-discursive entities that I conceptualise through the language of 'assemblage' (Deleuze and Guattari, 1987). The paper will draw on video footage that I had previously abandoned, that operates beyond the contours of human centric terminologies and towards recognising children's emergent literacies in a rapidly changing digital world.

I use the technique of 'video data sensing' felt at the level of experiments with digital pixels. This technique helps to de-centre the child in the action and provoke a 'haptic' (Marks, 2000) visualisation of the classroom. This practice also requires a shift in thinking about the role of the researcher that emphasises

the unfolding nature of 'doing' video. The fundamental question has been to ask what the video does and how it does it as we are prompted to recognise how child subjectivities emerge out of the movements and rhythms of bodies, formlessness and chaos in mutual imbrication with the action camera and resultant video.

Video-sensing the world in aesthetic collective practices with young children

Laura Trafi-Prats, Manchester Metropolitan University, UK and Evelyn Gutierrez, Alexandra Park Children's Community Centre, UK

This paper articulates a practice-based research with young children and practitioners that cultivates experimentation with materials and devises a prolonged, collective and speculative practice around what materials can do (Kind 2018). More specifically, our practice thinks-does literacies through a haptic ontology of sensing, movement and the generation of lines through entanglements of children, mark-making tools, GoPro cameras and image projection (Caton & Hackett 2018; see also Ingold 2007). We think literacy practices as being part of a process-reality of intra-active touch in which bodies "sense the world in all directions at once" (Manning 2007: 139). We are especially interested in how GoPro video-sensing can help us understand language in the early years in performative ways, and in embodied movement of materials enacted in situated practices (Kind 2013).

2.2 Individual papers

Chair: Jackie Marsh, University of Sheffield, UK

Room: Cotton Theatre

hAPPy Families: Perceptions and reflections of parents and young children about "good" apps

Rita Brito and Patrícia Dias, University of Lisbon, Portugal

In our digital society, children are being born in media-filled homes, and starting to use them very early. Their favourites are mobile devices. Parents are facing the challenge of mediating digital media very early on for the first time, and have mixed perceptions and attitudes towards the opportunities and risks of digital technologies. Sonia Livingstone has been working on the notion of "positive online content" for the last decade, supported by other stakeholders such as the POSCON network, aiming to identify and disseminate guidelines and criteria for producing and selecting positive digital content for young children. Our research applies and adapts these guidelines and cri-

teria to mobile media, highlighting the protection of children's rights (such as privacy), their engagement and participation, and the development of diversified competences.

In our empirical work, we set out to explore the criteria used by both parents and children to select apps. Our approach is exploratory and combines mixed methods: in 2017, we conducted an online survey to a purposive sample of 1968 parents of young children, and we visited 81 families with children under 8 years old.

Our findings reveal a significant dissonance between the apps that parents consider beneficial and the apps that children actually use and enjoy. Parents tend to perceive mobile media having their offline experiences as reference: they identify "educational" with the contents and skills that are a part of the curricula of formal education, and also with traditional formats such as puzzles and building games. On the side of young children, we observed an intertwining between online and offline, between fantasy and reality. They prefer apps that feature their favourite characters from fictional universes (such as superheroes and Disney princesses) or toys (such as Lego). They also enjoy simulators and apps that allow them to build content or code (such as Minecraft or Scratch), as these formats affords them a heightened sense of participation and autonomy.

In subsequent stages, this project will include one last round of fieldwork consisting on interviews to relevant experts and stakeholders (e.g. industry, media, education). The ultimate goal is the development of an online platform that helps parents and educators to "assess" to each extent apps are beneficial for young children and to make informed choices, particularly that take into account the expectations and preferences of children themselves.

Parents' failure to plan for children's digital futures

Lelia Green, Donell Holloway, Kelly Jaunzems, Edith Cowan University, Australia, Leslie Haddon, London School of Economics and Political Science, UK

There is extensive evidence that teenagers' social media and internet use is of considerable concern to a number of parents. Apart from worries about excessive time spent online, parents sometimes struggle with the content of video games and with the impact upon adolescents of sexualised forms of self-presentation. Given this, it might be assumed that most parents would have a game-plan in their minds as to how they intend to socialise very young children to prepare them to take their place in the digital world without succumbing to well-publicised risks.

This paper explores the experiences of digital parenting of 12 Australian families, and 9 British families, with children aged 0-5. It adopts a children's rights context (UN Convention on the Rights of the Child, 1989) (Livingstone & Third, 2017), and interrogates issues of access, engagement, risk and the sense of parental control over children's technological interaction. The data underpinning this paper was gathered in family-based investigations and interviews in an ethnographic setting involving two researchers, one of whom engages principally with the parent(s), while the other focusses on the child(ren).

The conceptual foundations for the paper are derived from consideration of Bronfenbrenner's (1979) ecology of human development; Lave and Wenger's communities of practice (1989); and, Bandura's social cognitive theory (1986). These frameworks position children within nested environments, with the family circle having the principal impact upon children's early digital literacies. It sees parents as collaborating and sharing in communities of practice, but it argues that most parents engage in just-in-time digital parenting, rather than planning ahead to create a thought-through basis for the digital life of the future teen or young adult digital citizen.

Today's generation of parents necessarily draws upon their own practices with digital media when modelling and communicating media use to their children. There is evidence to suggest that even when parents have a clear idea as to how they would like to approach opportunities and challenges, the discussions in the public sphere, the daily routines with their child, and the judgements they make of others' digital practices, all influence the trajectory of their digital parenting making it more difficult to steer a firm course. At the same time, few parents seem to be prepared for the problems that arise in children's digital engagement (for example, bullying on social media, exposure to pornography etc.), because of their just-in-time approach. Consequently, parents who may have a very clear commitment as to the kind of education that their child will have, are less able to deliver the early digital literacy experiences that might underpin their child's development as an autonomous media user in command of his or her media habits and practices.

(Deep) Mediatized Family Life: The Role of Media in Parent-Child Interaction

Claudia Lampert, Marcel Rechlitz, Hans-Bredow-Institut, Germany, Rudolf Kammerl and Jane Müller, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

Media play a special role in socialisation because they are present from the very beginning and they are at-

tendants in all stages of life (Bachmair 2007; Krotz 2016). Children grow up in a multimedia environment that is becoming more and more complex, convergent, and personalised (Holloway/Green/Livingstone 2013). Children themselves play an active role, as they choose the duration, purpose and type of media usage within the available media ensemble more and more independently. Nevertheless, the composition of the ensemble as well as rules and expectations are socially co-determined. The appropriation of media, media content, functionalities etc. takes place in different social contexts and against the background of both individual living conditions and parents' media habits and educational concepts. In our project we investigate the role of media related communication and negotiation processes for children's socialization and everyday family life.

Against the theoretical background of the concept of 'communicative figurations' we focus on the consequences of deep mediatization (e.g. Hepp et al. 2017) for children's socialisation. In this concept, social domains are seen as communicative figurations which can be characterised by (1.) Actor constellation (e.g. family members), (2.) frames of relevance (kind of central topics, in this context the question of belonging and distinction), and (3.) communicative practices (which are linked to special available media within a social domain, *ibid.*). In a qualitative panel study with two cohorts of children between 6 and 11 years we have a closer look on children's media repertoires (Hasebrink/Domeyer 2012), and how children use digital media for belonging and distinction processes within their families. For this purpose, we conduct a two times (in autumn 2018 and in 2019) photo elicitation interviews with children (using a laying technique) and additional qualitative interview with one parent. For data analysis we will conduct a qualitative content analysis as well as case studies.

At the conference we would like to present the theoretical concept und methodological approach and to provide first results of the first wave of data collection on role of media for parent-children-interaction with focus on the younger cohort.

2.3 Individual papers

Chair: Jon Wargo, Boston College, USA

Room: Graphene 1

Reading and Reproducing Fairy Tales with a Critical Lens

Tolga Kargın, Erol Duran, Sacide Güzin Mazman Akar, Uak University, Turkey

This study is a qualitative study that analyzes young children's (7 – 8 year-old) digital and critical litera-

cy engagements in four elementary schools in Usak province of Turkey. According to the new definition of literacy, every single item even human beings are considered as texts. In the process of reading a text and/or composing a text, lots of modes (image, posture, movement, sounds, gaze, gesture, speech) that we use in everyday life are used at the same time (Gee, 2010; Kress, 2003; Knobel & Lankshear, 2007; Lankshear & Knobel, 2006). Therefore, when we think about the new definition of literacy, in addition to reading and writing printed texts, texting, video making and video sharing, photoshopping, blogging, playing video games, commenting in social media, tweeting, podcasting, and the other ways of getting in touch with people in digital networks are considered as literacy practices (Wohlwend, 2013). In this respect, in this study, we led the children use the Puppet Pals iPad application to recreate the well-known fairy tales (e.g., Cinderella, etc.) they recently read and found problematic. In this process, however, it was expected from the children to read and examine the tales based on the critical literacy guideline (Lewison, et al., 2002), and as a product of critical writing, it was expected from them to create new tales in the digital platform by using similar characters and plot as an answer to our "How would this story be a better story?" question. In this study, which synthesize the understandings of digital literacy and critical literacy in a unique way, children both produced a digital product in accordance with the new definition of literacy and this digital product had the quality of critical literacy since it was produced by changing the original fairy tale to make it better (fairer) after reading the original one. This study was carried out in each classroom separately, and in each classroom Turkish lesson hours (10 hours per week) have been used for two weeks for this study. In the data collection process, the second and third graders in those four Turkish schools have been visited in their classrooms while they were recreating the fairy tales in a digital platform with a critical lens, and the researchers took field notes, photos and video records of the student interactions. The collected data have been analyzed by using Mediated Discourse Theory (Scolton, 2001; Scollon & Scollon, 2004) procedures in Dedoose qualitative data analysis software. The findings of this study will be discussed in the conference with small chunks of videos from the students' products.

Joyful Interaction in Early Childhood Multiliteracies Endeavours

Alexandra Nordström and Kristiina Kumpulainen, University of Helsinki, Finland,

This paper argues that joy is an important feature of children's authentic engagement in educational activities mediating their learning of multiliteracies. Yet, little attention has been directed to researching and

understanding the social contexts that create opportunities for children to engage in their multiliteracies learning activities with joy. Moreover, how to conceptually and methodology address joyful interaction in children's literacy practices urges further research insights and research methodologies. Our paper addresses these research gaps in current knowledge by drawing on an ethnographic case study on children's (6 to 7 years old) engagement in a creative and multimodal literacy project in a Finnish ECE setting. The paper illuminates how children's joyful interaction manifested during the course of their creative and multimodal literacy endeavours, and the pedagogical conditions of its emergence. This paper hence illuminates multiliteracies pedagogy that can create opportunities for children's joy in engaging and learning with and from literacies.

The paper includes a brief overview of the role of emotions in literacy learning and education, as well as a review of recent research knowledge on pedagogies that have potential to support children's joyful interaction in their literacy learning.

The theoretical framework of this study is based on Vygotsky's (1978) theory of children's intellectual and emotional development, enriched by Roth's and Jor-net's (2013) theory of experience. In this framework, joy is considered as a social construction that is created in interaction with others in social contexts, not as an individual attribute. Following the work of Huf-nagel & Kelly (2017) we introduce our logic of inquiry to researching and understanding children's joyful interaction in their multiliteracies learning endeavours by attending to the interactional, contextual, intertextual, and consequential aspects of children's emotional expressions in their ongoing social activity. In this approach, particular research attention is directed to semantics, contextualization, and linguistic features in children's interaction in situ addressing four dimensions of joyful interaction.

Drawing on illustrative examples from our data, we aim to make salient the nuanced nature of children's joyful interaction and the pedagogical conditions for its emergence. These illustrative cases also make visible how researching and understanding children's joyful interaction is a powerful gateway to understanding children - their experiences, worldviews and orientations to literacies - all of which account for their interactions and learning of multiliteracies. Our work has also implications for researching and understanding children's joyful interaction in the teaching and learning of multiliteracies.

Gender in digital literacy and play. Icelandic perspective

Anna Elísa Hreiðarsdóttir, University of Akureyri, Iceland

According to the Icelandic National Curriculum for Preschools, equality is one of the fundamental pillars of education and states that critical examination is an important part of equality education. Established ideas in society influence children's ideas and views and has impact on how they see their possibility and limitations based on gender.

This lecture presents findings from a research as part of Horizon 20/20 researcher network MakeEY, Makerspaces in the early years: Enhancing digital literacy and creativity. The research has received funding from the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant agreement No 734720 and The University of Akureyri Research fund.

The aim of the study was to explore how five-year-old children approached combination of digital technology and creative materials. Other part of the study was to look through gender lens how the digital affected children's play world and the interaction between them. Five boys and four girls from the same preschool participated in six workshops built on the ideology of makerspaces; the children had access to all kind of creative materials, Lego blocks, Go-pro camera and Ipad. They worked on creating their own characters and learned to program a robot (Blue-Bot) through play. Part of the project was to create stories and scenes including both the characters and the Blue-Bot. Data was gathered through photographs, video and audio recordings, participant observations notes and interviews with teachers and children. The data was analysed from three perspectives; interaction, creativity and play, and gender.

Findings indicate that gender difference is not prominent in the children's interest, success or skill. Children of both sexes showed skills in programming and both groups had difficulties. However, we could see difference in how boys and girls used the space and how they select tasks or used the Blue-Bot in their play. None of the girls characters were princesses, but almost all boys draw superheroes. Therefore, one could conclude that teachers should be alert and notice how gender can influence children's play and learning with the aim to develop equality and gender education in preschools.

2.4 Individual papers

Chair: Cassie Bronwell, University of Toronto, Canada

Room: Conference Room 2

Play Technology with 3-5-year Old Children in a Hospital Setting

Valentina Andries, University of Edinburgh, UK

Paediatric hospitals have been modernising in recent years with the aim of becoming more childfriendly spaces in which children can be helped to feel less distressed by providing encounters with familiar technology. The aim of this ESRC-funded collaborative PhD is to explore how digital technology can support social play among children aged 3-5 in collaboration with the new children's hospital in Edinburgh, to open in late 2018. The majority of the patients in the new setting will be hospitalised in single rooms, rather than conventional multi-bedded wards, leading to a risk of children feeling lonely or anxious in an alien hospital environment. A bespoke Bedside Environment system will be implemented in the majority of the rooms, giving children the chance to access content via an iPad platform connected to a smart TV. Hospital practitioners have expressed concerns regarding such developments, believing that technology may further increase isolation. In order to address such concerns and to enable the children to make meaningful use of hospital play technology, I have designed an iPad game prototype. The game targets the facilitation of social play among 3-5-year olds, especially aimed at the children who spend longer than two weeks in the hospital, while not excluding the shorter-term patients. We are building the game for the hospital iPad platform, working within the NHS and GDPR restrictions. The app is being built on the idea of providing the children with virtual pet characters that they can play with, care for and share in the hospital space. The app includes a narrative element, giving the children the opportunity to create a story with the help of a pet character, Lolli the AstroSheep that ends up in outer space. They can find out facts about different items that might look a bit strange (e.g. microscope, robotic arm etc.), as well as go underwater to explore where the Princess Lolola squid resides and 'play house'. A participatory approach to design has been adopted. In this study, children's participation as informants in influencing the design outcome has been both direct and via proxies such as parents and play specialists. Fictional inquiry has been employed in game design workshops at the stage of the initial prototype development. The app will be evaluated in a series of studies, including game testing workshops, play sessions with individual children, focus groups with play specialists and observations of stakeholders interacting with the app.

Early year's practitioner beliefs about digital media: from pedagogical incompatibility to new pedagogy

Charlotte Vidal-Hall, University College London, UK

Digital technologies permeate virtually all aspects of young children's lives, but their integration into early years classrooms remains problematic. Key skills for later learning and life are developed in the early years

of education and in a rapidly developing technological world these skills include proficiency in digital literacy. While early years practitioners have a strong pedagogy to support children's learning across the curriculum, they find this more challenging when integrating digital technologies. Their pedagogical skills have not yet been transferred to learning with digital technologies.

A key factor in the uptake of digital technology is teacher beliefs. One in four practitioners believe digital technology does not have a place in the early years (Billington, 2016). Practitioners face the challenge of finding ways to navigate the tension between beliefs and practice and apply their pedagogical skills and expertise to learning if children are to become digitally literate. This presentation reports research that addressed practitioner beliefs about digital media and pedagogy in relation to the use of digital technologies in the early years classroom. The theoretical framework for the study combined sociocultural theories of learning with activity theory, and literature on classroom learning ecologies, to conceptualize early education settings as sites for teaching and learning with digital media. The study used educational design research (EDR) to collaboratively design and implement a naturalistic, classroom-based intervention over the course of one school year.

Findings suggest that for children to develop the operational, critical and cultural dimensions of digital literacy (Sefton-Green, Marsh, Erstad, & Flewitt, 2016), teachers need to be present for some time, although not all the time, to work alongside children when they are using technology during free play and teacher directed activities. Rather than suggesting there is one 'ideal' pedagogical approach to achieve the integration of diverse technologies into early learning, this study found that a core dimension of successful and enduring practice is the creation of a reflective and discursive space for teachers to reflect on changing practice and how technology can be incorporated into the existing classroom learning. The findings point to a need for early years teachers to engage with ongoing reflection and dialogue around beliefs about the presence of digital technology in early years settings and the ways in which children engage with technology.

2.5 Individual papers

Chair: Julia Gillen, Lancaster University, UK

Room: Graphine 2

Digital literacy in early childhood education – policy, strategies and evaluation: Austria and Germany in comparison

Sascha Trültzsch-Wijnen, University of Salzburg, Austria

Today use of digital devices is part of everyday life starting in early childhood, aged 2 to 3 (Chaudron et al. 2016, Cristia & Seidl 2015, Bedford et al. 2016, Semmelmann et al. 2016). Young children grow up in a mediated or mediatised environment (e.g. Hepp et al. 2015, Livingstone & Lunt 2014), in a phase of 'deep mediatisation' (Hasebrink & Hepp 2017) – meaning in families with elaborated cross-media practices of both children and parents.

Therefore media education with regard to digital literacy needs to start in early childhood. In Europe the focus of discussion moved from media literacy to digital literacy in the last years (see Trültzsch-Wijnen et al. 2017) particularly since the recent EC policy recommendation (2016). However, approaches and adaptations depend on cultural, societal, political, pedagogical, and labour market contexts of different countries and cultures (Donoso & Wijnen 2012, pp. 2-4) and even though the general idea of digital literacy is similar, a large variety regarding the curricular implementation and the transfer into pedagogical practice can be observed. The presentation explores these interrelations between sociocultural aspects, academic discourse, policy, educational strategies and their evaluation, by comparing Germany and Austria – neighbouring countries with different educational systems: While in Germany the federal states are responsible for educational politics, Austria has a centralistic

educational system. At the same time both countries have a shared academic discourse of media education taking the latest digital literacy recommendations into account. The presentation will discuss the implementation of Austria's newest digital literacy policy (released 2017, see Trültzsch-Wijnen 2018) and similar approaches in Germany's federal states (recently 2016, federal recommendation KMK 2016) by referring to best practice examples. Beside these strategies also didactic concepts and evaluations for the youngest generation will be discussed. It will be questioned if and how digital literacy is promoted by these new policy strategies and critical factors for successful digital literacy education in early childhood contexts (kindergartens and primary schools) will be identified by focussing on the role of the teachers (training, motivation, habitus etc.)

Has new “vocabulariesm” shaped early childhood literacy in Iceland?

Kristín Dýrfjörð, University of Akureyri, Iceland

Over last decades ideas that have been traced to neoliberalism have found their way into the forefront of the early childhood education in Iceland, with its em-

phasis on austerity, accountability deregulations and so on. This has affected public policies and how curriculum is carried out in preschools.

Icelandic preschools have over last four decades gone from being simple and homogenous to polymorphic and maybe back to become homogenous, grounded in what Peter Moss has named “hegemonic globalization”. In Iceland as in some other countries the tendency seems to be to subside early childhood education to simple formulas and technicality, with pedagogy in danger of being reduced to manuals and cookie cutter programs based on market solutions instead of a shared dialogue of professionals. This new discourse that has gained traction in Iceland has caused a power shift away from educators and toward others, such as policymakers, educational businesses, and other professions that were previously on the sidelines of preschools.

As a way of redefining the world, neoliberals have taken to Foucault's understanding of how discourses can be used to control and govern, how one “truth” can replace another and become the new regime. In the daily life this done deviously by developing new vocabulariesm with the aim, to change public discourses; change how we think and act. This change of discourses and truths has gone hand-in-hand with new language, that of “educationalization” and attention to academic skills such as reading, writing, and math, which has led to pedagogical changes with in the preschools in how the curriculum is carried out with children. For many preschool teachers, learning through play, empowerment, and children's agency is being swept out to implement a new regime based on literacy and tests that aim to prepare the future workforce to be adaptable and disciplined.

The aim of the paper is to look at literacy policies for the preschool in three municipalities in Iceland through the lens discourse analyses and from the point of critical theory. The aim is to compare similarities and differences to investigate if there are in reality traces of impact of educationalization” and academic skills in the official policy documents and how if so, how those have impacted the preschool practice.

Young children's translanguaging practices on social media: the case of Chinese immigrant families' uses of WeChat

Sumin Zhao, University of Edinburgh and Rosie Flewitt, UCL Institute of Education

The rise of social media has created new opportunities for young children in immigrant families to maintain their heritage language, literacy and culture

through online contact with distant family and friends. In this paper, we bring together the multimodal social semiotic (Halliday, 1978; Kress & Van Leeuwen, 2001) and translanguaging lens (Li, 2017) to understand how emergent bilinguals develop rich language and literacy repertoires as they select features from their emerging bi-lingual repertoires and blend these with the multimodal features available in social media. We focus on the translanguaging practices of young Chinese immigrant children when using WeChat—a popular Chinese social media platform. Reporting on a study of 9 immigrant families of differing socioeconomic backgrounds in southeast London, the paper focuses on one case study of two brothers aged 6 and 8 years, with mixed Chinese (mother) and Portuguese (father) immigrant heritage. Specifically, we look at online exchanges between the brothers and contacts in their mother's WeChat network. Through fine-grained multimodal analysis of these exchanges, the paper illustrates the multimodal, translanguistic, polyadic and interpersonal nature of the brothers' WeChat interaction. The findings address a gap in research knowledge by illustrating how social media can act as transnational literacy sites that enrich opportunities for young children's emergent translanguaging repertoires and translanguaging practices.

2.6 Individual papers

Chair: Guy Merchant, Sheffield Hallam University, UK

Room: Pioneer room

Free Apps – Parents, what are you opening the door at?' – Personal data and privacy risks in children's mobile apps.

Stephane Chaudron, Dimitrios Geneiatakis, Ioannis Kounelis and Rosanna Di Gioia, European Commission, Joint Research Centre

Recent studies on young children and digital technology (1) show that frequently parents let children happily play with their personal digital devices, being smartphones or tablets. Parents are taking advantage of the attractiveness and availability of videos, games, apps to use them as pacifier or nanny when they need their children to be calm and engaged in a "safe" and quiet activity. Interviews of families show also that most parents choose free apps versus paying apps for this purpose. By doing so, what are parents opening the door at?

Free Apps business model works on the basis of incentives. Typically, customers receive freely access to a service in exchange of exposure to advertisements and/or permission to access personal data such as contacts details, photos, recordings, geolocalisation,

digital accounts, social, credit cards, e-mails, phone numbers, etc. Most of the time, customers have little margins to manoeuvre, either they accept the condition and can use freely the app or they do accept and neither can access the service. One could believe that payable apps provide better protection of personal data and privacy. Beyond believes what are the facts?

Our study tends to quantify and identify the potential of intrusiveness in user's privacy of children's mobile apps, being them free or not. Our methodology builds on gathering in an automated way children's apps via well-known stores, and identifying app's intrusiveness as far as apps' users (children or parents) private sphere is concerned. To do so we rely on the apps' descriptions provided in the corresponding store as well as in their built-in characteristics (e.g. permissions, content providers, etc.) in order to deduce whether personal data can be exposed or not. Our analysis allows firstly to highlight some personal data and privacy risks of apps used commonly by young children and their parents. It then enables us to discuss the level, the quality and the accessibility of information provided by the app stores themselves. It concludes on the need to raise awareness on informed use of apps and on the need of building information and data literacy (2) among parents and children.

The appearance of literacy: touchscreen tablets in the early years

Cathy Burnett and Guy Merchant, Sheffield Hallam University, UK

iPads and other touchscreen tablets are now commonplace in the lives of many young children and their communicative possibilities have implications for how we think about early literacy. There is however an understandable uncertainty about how to integrate tablets in early years' provision, about the sort of literacies involved, and what might constitute an appropriate adult role in their use. In contributing to such debates, this paper aims to examine how existing assumptions about literacy can frame - and limit- understandings of new communicative practices generated through research and practice. Drawing on data from a study of iPads in one early years setting we use a sociomaterial perspective to unsettle habits of noticing that are ingrained in current literacy practice and research. As we have explored elsewhere tablets become multiple things in classrooms, so the point at which they become texts, or at which activity appears to be literacy-like, is worth noting. To this end, our analytical process involved approaching literacy as a social-material-semiotic encounter through tracing the production of text with iPads and recording what we deemed to be the appearance or disappearance of literacy. Our interest was not

so much to debate what literacy is or might be, but to focus on some examples of what might be literacy-like, and in doing so to interrogate the politics of what appears as literacy as tablets enter early years settings. We draw on stories from our study to expand our ideas using a tripartite approach that considers the appearance of literacy firstly in terms of emergence (how it seemed to take shape), secondly as semblance (what it seemed to look like) and thirdly as performance (how it was consciously or unconsciously enacted). This work seems to be particularly important at a time when conceptualisations of literacy are being challenged in response to diversifying communicative practices, and when the appearances of literacy may, or at least could, look quite different to those that we are used to noticing. If we are to be open to the possibilities and challenges of changing communicative practices, then we need to be aware of the ways in which our habits of noticing are helping to frame our understanding of such developments.

The place of ICTs in pre-school

Leslie Haddon, London School of Economics, UK and
Lelia Green, Edith Cowan University, Australia

Ten years or more years ago researchers on ICTs in pre-school settings, especially in the UK, noted there was limited adoption of and staff support for these technologies. This in large part reflected the staff's own limited confidence in using technologies, some opposition to children's use and a lack of appreciation of some of the pedagogical benefits of using such technologies. This paper, drawing on recent Australia-UK qualitative Toddlers and Tablets project, aims to further our understanding of the extent to which this has changed. One main factor is that carers are aware that even young children now use many ICTs at home, especially with the arrival of touchscreen interfaces. Hence, for example, children did not have free reign to use technologies in the nurseries that were researched. Children's use was very supervised since otherwise the children would compete to use ICTs and try to replicate what they did at home, whereas staff wanted to persuade them to try out new things. There would appear to be more ICT use in the pre-school compared to the earlier era outlined above: some carers even brought their own tablets to the nurseries for the children to use, there was more awareness of educational benefits and some ambitions as regards future possible activities with ICTs. That said, for the most part staff still did not prioritise teaching children about using ICTs. Because of the knowledge children already brought from the home, it was easy to achieve the rather low curriculum targets that had been set. Moreover, the carers were more interested in giving children experiences they did not have at home - in this respect, specifically 'learning to use' ICTs was already 'covered' in the children's home

life. Besides these professional judgements and priorities, reflecting some wider discourses about ICTs, pre-school staff were also sometimes critical of parents using ICTs to pre-occupying children, they observed that parents were sometimes too pre-occupied with devices like smartphones themselves and they were concerned that sometimes children's use of ICTs outside the pre-school could have a negative effect on children's sociability. While there was some interaction between parents and children, this (still) did not extend to discussing children's ICTs use at home or in preschool. In fact, parents were sometimes surprised at ICT use at pre-school, given they had not taken that into account when deciding how much screen time their children should experience overall.

13.00 - 13.55 Lunch

Room: Pioneer Room

14.00 – 14.45 Keynote B: The Role of Talk, the Body, and Digital Tools in eBook Composing

Chair: Julia Gillen, Lancaster University, UK

Presenter: Deborah Wells-Rowe, Vanderbilt University, USA

Room: Pendulum Suite

In this talk, I explore the ways that teachers and 4-year-old emergent bilinguals used iPads, digital cameras, and composing apps to create multimodal, multilingual eBooks. I focus on the ways embodied activity and talk supported the emergence of digital tools and texts as boundary objects allowing teachers and children to communicate and create across generational, linguistic, and cultural difference.

14.50 – 16.05 Parallel Session 3

3.1 WG2 Symposium - Early years and primary teachers' digital literacies, biographies and professional practice

Chair: Stavroula Kontovourki, University of Cyprus, Cyprus

Room: Cotton Theatre

This symposium discusses findings from a cross-country interview inquiry, initiated as part of the activities of Working Group 2 of the COST Action IS140 "The digital literacy and multimodal practices of young children" (DigiLitEY), to examine the connection of teachers' digital literacies and biographies to their professional practice. From a methodological perspective, the inquiry is based on qualitative research methods, with individual, semi-structured interviews

utilized as the primary method for data collection. A protocol was collaboratively developed and translated into respective national languages to facilitate discussion with approximately 80 teacher-participants from 8 countries (in alphabetical order: Cyprus, England, Germany, Greece, Poland, Portugal, Romania, and Slovakia). Thematic analysis consisted of multiple readings of interview transcripts and coding of analytical memos translated in English to allow cross-country comparison. Distinct papers present key themes from this analysis to discuss the contingency of teachers' experiences with/of digital literacy, and the similarities across local contexts especially as those are framed by discourses of appropriateness and risk relating to (early years) schooling, children, and pedagogy. The symposium thus contributes to debates on reconceptualizing early childhood literacies as also potentially digital, by considering teacher experience and identity—in its divergence and convergence—as key to the endeavor.

Meanings of the “digital”

Cathy Burnett and Karen Daniels, Sheffield Hallam University, UK, Stavroula Kontovourki, University of Cyprus, Cyprus

This presentation explores the different conceptualizations of digital literacy in teachers' descriptions of their own and their children's digital literacy practices. The different meanings of the digital are discussed in connection to the varied interpretations of digital tools, digital media, and new technologies, which were employed in teachers' descriptions of their engagement with the digital over the course of their lives and in their classrooms. Meanings of the digital also emerged in teachers' descriptions of young children's meaning-making at home and in school. Central in these definitions was the materiality of the digital; sometimes asserted, others ignored, and yet others challenged. Exploring also teachers' feelings and emotions, the presentation links both varied definitions and the (non)materiality of the digital with discourses of appropriateness and play in early childhood learning.

Digital tools and media in teachers' personal lives

Eufimia Tafa, University of Crete, Greece and Zuzana Petrova, Trnava University, Slovakia

The presentation focuses on teachers' narrated experiences of digital tool and media use in their personal lives. Focusing on teachers' references to such use at different points of their lives, the presentation connects the personal to the gradual expansion and introduction of new technologies and discusses how this might be indicative of evolving (digital) childhoods. It further identifies particular tools and prac-

tices in which teachers engage for personal reasons, while concurrently considering teachers' reports that personal time conflates with the use of digital technologies for professional purposes. Capitalizing on these, presenters argue that there are both continuities and discontinuities between teachers' accounts of using the digital in their everyday life and in educational settings, which open up the discussion to the interconnectedness of the personal and the professional.

Digital tools and media in teachers' professional lives

Gudrun Boehnke-Marci, Tatjana Vogel, Technische Universität Dortmund, Germany, Margarida Lucas - Universidade de Aveir, Portugal, Izabela Jaros - Jan Kochanowski University, Poland

The purpose of this paper is to present teachers' professional use of digital tools and media in educational settings. Teachers' accounts from different countries and contexts are analyzed for the different ways in which digital technologies and media enter the classroom. It is thus attempted to, first, identify profiles of teachers as per the degree and type of digital media use in their classrooms; and, second, connect that to teachers' broader understandings of early years' pedagogical practice. Bringing these together, this presentation sheds light to the connections between teachers' instructional decision-making and sense of professional-pedagogical role.

Digital literacy and teachers' professional learning

Vitor Tome, Universidade do Algarve, Portugal, Maria José Brites, Universidade Lusófona do Porto, Portugal and Glória Solé, Universidade do Minho, Portugal

This presentation examines the types of professional learning that facilitate teachers' engagement and utilization of digital media, tools, and technologies in educational settings. It focuses both on teachers' reports of professional development provided to them, including guidelines and supports by official entities and organizations across countries, or sought for by them (e.g., teachers' voluntary participation in focused educational programs); and, on teachers' description of suitable professional learning. It thus compares and contrasts teachers' lived experience and desires or demands as learners of/digital literacy, and concludes with suggestions in regards to how such learning would be most meaningful within and across contexts.

Digital literacy in constructions of children and families

Anca Velicu, Romanian Academy · Institute of Sociol-

This presentation expands the gaze beyond teachers as users of digital technologies to examine how they describe how these enter their relationships with other social actors including children and their families. Working on a dual plane, the presentation (a) provides insights in the ways in which teachers conceptualize children's engagement with digital technologies inside and outside formal learning spaces, and (b) describe how such technologies might render significant in teachers' relationships with parents. Discussing the fluidity and unavoidability of the digital in children's lives, teachers veer between building upon what children do and providing "balance" in their use of digital tools and media. They concurrently construct different relationships between home and educational settings, as they report to utilize to both learn from and report to parents. This leads to a discussion of both the contradictions and the particularities of digital practices, especially as those pertain to constructions of childhoods and home-school relationships.

3.2 WG 4 Symposium - Researching the Internet of Toys

Chair: Giovanna Mascheroni, Università Cattolica del Sacro Cuore, Italy

Room: Pendulum Suite

The panel builds on the findings from our work on the Internet of Toys (IoToys) conducted within the WG4 of COST Action DigiLitEY in order to discuss key methodological and theoretical challenges for future research in the field. When we first approached IoToys as a research object, they were far from being commonplace in young children's lives. Yet, we identified a number of issues that configured IoToys as an interesting object for media and communication, sociology and education scholars: the emergence of connected play practices at the intersection of online/offline, digital/non-digital, material/immaterial play, local/global; the relationship between children and social robots; and the dataveillance and monetisation of children's personal data. The panel reports on a qualitative content analysis of media and commercial discourses around connected playthings. Media representations play an important role in shaping shared imaginaries around emergent technologies; similarly, commercial discourses attempt to anticipate ideal uses of technological artefacts by influencing expectations and understandings of technologies. Two main discursive strategies emerged: a discourse of risks and responsabilisation which assumes children as vulnerable subjects and parents as individually responsible for their children's well-being; and a complementary "investing in children's future" framework which emphasises the educational opportunities of

internet-connected toys. The analysis, then, informs future research into parental and children's imaginaries and practices around IoToys.

The media representations of IoToys – implications for public understanding and children's rights

Tijana Milosevic, University of Oslo, Norway, Claudia Lampert, Hans Bredow Institute, Germany, Christine Trueltzsch-Wijnen, Salzburg University of Education, Austria

The growing use of "smart" toys has made it increasingly important to understand the various privacy implications of their use by children and families. This presentation provides a synthesis of available research on children's privacy in the context of data collection for commercial purposes. It outlines a relative paucity of research on this aspect of privacy, especially with respect to very young children (under eight). The overview of the literature is followed by a case study of how the risks to children's privacy, posed by the commercial data collection of producers of "smart" toys, were represented in the media. Relying on a content analysis of media coverage in twelve European countries and Australia collected during the Christmas season of 2016/2017, and reporting on a follow-up study in Germany and Austria during the Christmas season of 2017/2018, our presentation illustrates how the issue of children's privacy risks was dealt with in a superficial manner and discusses the implications of such coverage for public understanding of this issue and children's rights.

The constantly-entertained child, the robotic friend and the guilty parent: Representation of IoToys in ads and commercial discourses

Patricia Dias and Rita Brito, Universidade Católica Portuguesa, Portugal

As our society transitions to the Internet of Things, toys are becoming smarter. The IoToys includes one or many of the following features: internet connectivity, human-like interaction, coding, sensorization, automation, responsiveness, self-learning, artificial intelligence.

Families are adopting and domesticating these smart toys, and the first contact is often through media. Media discourses vary deeply whether they are journalistic, user-generated, or commercial. This communication combines findings from two studies. The first is a qualitative content analysis of a purposive sample of 30 adds, YouTube videos, and brand websites concerning the main smart toys in the market by the end of 2016 in Portugal. The second consists

of qualitative interviews to a purposive sample of 22 Portuguese tech-savvy and high-income families, as these are more likely to own smart toys. Our findings reveal that commercial discourse is directed mainly at children, and offers two gratifications: constant entertainment and company, presenting smart toys as “robotic” friends. However, it also subtly addresses parents, associating smart toys to learning, safety, well-being, and good parenting. Thus, some parents feel guilty for not purchasing smart toys, but on the other hand are reluctant, as they consider them expensive and are sceptical about their pedagogical potential.

The creative industry of smart toys

Vilmant Liubinien, Kaunas University of Technology and Ana Jorge, Universidade Católica Portuguesa, Portugal

While technology for children has been promoted through “the ideologies of playing to learn, and the need for lifelong learning from birth to ensure future success” to parents (Nixon & Hateley, 2013: 31), by markets and states, toys have also integrated more and more technology. At the same time, toys receive ever more symbolic content and narratives and play itself has been mediatized with the computer and the internet, “invested with consumer values” (Hjavad, 2004: 60).

As other global technologies, the production/consumption of smart toys differs across the world. This presentation discusses the implications of the structure of those differences in terms of local linguistic and cultural possibilities, combining the framework of the political economy of children’s media and leisure with the cultural and creative industries approach in the context of the increasing commercialisation of children’s culture. The analysis draws on Internet of Toys project, linguistic analysis of smart toys’ websites, analyses of start-up case studies (Lithuania and Portugal) and secondary data on children, technology and digital literacy. While the production and promotion of smart toys are heavily reliant on global market logics, national and European incentives to software companies are not motivated to support smaller linguistic cultures.

Hybrid methods for hybrid play

Giovanna Mascheroni, Università Cattolica del Sacro Cuore, Italy and Donell Holloway, Edith Cowan University, Australia

The last presentation examines the implications of the conceptual issues that IoTs mobilise - datafication and dataveillance, robotification, and digital materialities - from the viewpoint of their implications for research. First, we conceptualise IoTs as articulated

in three interrelated dimensions: 1) its materiality as a technological artefact and a physical toy; 2) the set of users’ (communicative and/or play) practices; and 3) the data collected, generated and communicated by the connected toy itself, which feed into dataveillance as the dominant business and social model. As a result of the triple articulation of these new playthings, connected play is actualised as a complex entanglement of the digital and the material that is always socially situated and contingent. To account for the complex and varied ways in which connected toys, children, adults and media infrastructures interrelate and interact to form systems of meaning and ensembles of technologies and agency, we draw on two epistemological approaches – phenomenological and non-representational – and propose an ethnographic methodology that takes into account the sociocultural context, materiality and symbolic dimensions of connected toy use.

3.3 WG3 Symposium - Reconceptualizing Book Sharing with Young Children in a Digital Era

Chair: Adriana Bus (Vrije Universiteit, The Netherlands) and Natalia Kucirkova (University of Stavanger, Norway)

Room: Graphine 2

Overview of the symposium

Young children are exposed to a variety of digital media every day, including computers, tablets, gaming consoles and smartphones. These differ from traditional broadcast media in that they provide children with an interactive rather than passive experience. Although much of children’s use is for entertainment, the market for electronic storybooks for home and school that have an additional instructional goal is also increasing. This has raised concern that digital books will not only add to daily screen time, but distract from the story and interfere with comprehension and acquiring pre-reading skills. Alternatively, because e-books are delivered on popular mobile devices, they might engage and motivate children to read more, provide benefit from built-in reading aids, and call attention to important story information.

In this symposium, three international experts on children’s digital reading will present latest findings that outline main themes in the discussion and research concerning digital book reading in early childhood. Mary Courage will discuss her research comparing paper book reading with digital book reading emphasizing the effects of the books on children’s engagement and adult-child interaction. Adriana Bus will discuss the special role of interactivity in digital books and how this can be realized

without distracting children's attention from the core activity, comprehension of the story. Natalia Kucirkova will focus on studies that move away from paper versus digital comparisons and outline how the sociomateriality framework might help us reconceptualize early childhood book reading.

Young Children in a Digital World: Costs and Benefits for Learning and Development

Mary Courage, Memorial University, Canada

Our research group has conducted a series of experimental studies on the effects of reading e-books compared to traditional paper books to 2- to 5-year-old children. A basic finding with the older children was that when they listened to two carefully matched stories, one in paper and one in electronic format, they were more attentive to, and engaged in the e-book. However, their story comprehension and recall did not differ across the two book formats. The important adult-child interaction was diminished in the e-book condition with less talk about the story and more about the device itself. This suggests that any disadvantage from a reduction in adult-child dialogue in the e-book condition might have been offset by the greater attention and engagement that the e-book elicited. New data from 2- and 3-year-old children using electronic books and puzzle tasks will also be discussed as will the role of cognitive load, children's executive functioning and their language proficiency in learning from digital media.

Promising Interactive Formats of Digital Books

Adriana Bus (Vrije Universiteit, The Netherlands) and Natalia Kucirkova (University of Stavanger, Norway)

Due to technology-enhancements digital books function in different ways from paper and may thus offer a new and unique perspective on expanding indispensable and valuable book reading experiences. Research should highlight what matters in these books and what will take us further in promoting literacy. From reviews comes evidence that technology-enhanced books can be more supportive than paper (Zucker, Moody, & McKenna, 2009), particularly for children from families where much of the child's time is spent in absentia from high-quality materials for and interactions supportive of language and literacy development. A main concern may be that many digital books found on the commercial market are targeted more towards amusement. They emphasize multimedia, colours, sounds, and graphics, but they are not necessarily suitable for promoting young children's language and literacy. It will be argued that interactivity in digital books can be an opportunity to engage

children more deeply with the thematic content, while maintaining "the integrity of the story" (Teale & Yokoto, 2014). She will show alternatives for playful elements that provide users with opportunities to engage more deeply with the story content which would promote children's story comprehension (Sargeant, 2017). Due to technology-enhancements digital books function in different ways from paper and may thus offer a new and unique perspective on expanding indispensable and valuable book reading experiences. Research should highlight what matters in these books and what will take us further in promoting literacy. From reviews comes evidence that technology-enhanced books can be more supportive than paper (Zucker, Moody, & McKenna, 2009), particularly for children from families where much of the child's time is spent in absentia from high-quality materials for and interactions supportive of language and literacy development. A main concern may be that many digital books found on the commercial market are targeted more towards amusement. They emphasize multimedia, colours, sounds, and graphics, but they are not necessarily suitable for promoting young children's language and literacy. It will be argued that interactivity in digital books can be an opportunity to engage children more deeply with the thematic content, while maintaining "the integrity of the story" (Teale & Yokoto, 2014). She will show alternatives for playful elements that provide users with opportunities to engage more deeply with the story content which would promote children's story comprehension (Sargeant, 2017).

Promising Personalized Features of Digital Books

Natalia Kucirkova, University of Stavanger, Norway

This paper draws on Johri's (2011) framework of socio-material assemblages to examine the ways in which researchers conceptualise children's learning with digital books. A review of recent studies in the area shows that children's reading has been historically studied in relation to the social and material features of children's books. The socio-material dichotomy has been continued with digital books and children's reading on screen. It is suggested that the compartmentalized structure of social/material approaches to the empirical research of children's digital books reflects historical epistemological dualities in the research of learning technologies. A sociomaterial perspectives goes beyond technological or social determinism and could advance the conceptualisation of time and space in future empirical studies. It is argued that this focus could significantly contribute to reconceptualizing children's early literacy.

3.4 Individual papers – 3 papers

Chair: Guy Merchant, Sheffield Hallam University, UK

Room: Conference Room 2

Learning from Screen Media in Early Childhood: A longitudinal study of Dana from 12 to 36 months of age

Yehuda Bar Lev and Nelly Elias, University of the Negev, Israel

Dramatic changes have taken place in early childhood media use over the past few years. Infants and toddlers not only watch television but also use touch-screen interactive media as an increasingly significant part of their entertainment, information, education and play worlds. At present, most studies on this topic are based on laboratory experiments and parental reports rather than field-gathered evidence and are cross-sectional rather than longitudinal. As such, we still lack a thorough understanding of digital media use during this critical period of child development and the touchscreens' contribution to children's learning.

The present study attempts to fill gaps by being the first to examine the long-term screen learning process in early childhood in the child's familial environment. Specifically, it focuses on the process of screen-aided acquisition of a second language by a young girl (here called Dana) who was 12 months old at the beginning of the study and three years old towards its end. The family was selected for in-depth analysis because of the great emphasis that Dana's mother placed on use of screen media (and a smartphone in particular) to support her daughter's learning of English as a second language. During the study, we followed Dana's development and the shaping of her media habits by conducting observations at Dana's home and in-depth interviews with her mother.

The research findings reveal the complexity of touch-screen use in early childhood. Most importantly, Dana's case demonstrates the limitations of this use, especially when it is not accompanied by appropriate parental mediation. The study's findings show that use of a smartphone for learning purposes without the mother's instructive mediation was barely able to advance Dana's acquisition of the English language, that was limited to phonetic elements only. In other words, Dana's learning process lacked parental "scaffolding" (Vygotsky, 1978) aimed at enhancing the child's cognitive abilities in general and the development of language skills in particular.

Moreover, the findings show that with her mother's encouragement, Dana acquired highly problematic smartphone use habits (e.g., long bedtime viewing of loud clips with fast cuts and blinding colors) that

could be harmful to her health and development. Hence the research findings call for increasing media literacy among parents of infants and toddlers who need to know how to support the development of appropriate media habits among their young children.

Mothers' and Children's Differing Beliefs about Digital Play

Laura Teichert, University of British Columbia, Canada

The definition of literacy shifted in the 21st century from print-based skills of reading and writing to recognizing the multiple modes people draw from to make meaning of their worlds. Central to this reframing of literacy is the increasing use of digital technology as now even the most modest levels of digital literacy are needed for adequate participation in western society. Digital and media literacy is now embedded in curricula across Canada (e.g., BC's New Curriculum, 2016; The Ontario Curriculum, 2006; Nova Scotia, 2015); yet, the use of digital tools by very young children remains a contentious issue (Canadian Paediatric Society, 2017; American Academy of Pediatrics (AAP), 2016). Despite research arguing for children's digital activities to be valued as a form of play (Edwards, 2011; Plowman & McPake, 2013; Wohlwend, 2013), an oft cited reason for recommendations urging parents and educators to limit digital tool use is young children's need for "hands-on exploration and social interaction with trusted caregivers to develop their cognitive, language, motor, and social-emotional skills" (AAP, 2016, p.1) in the form of play. This paper reports on a year long case study of three young children's access to and use of digital technology in their homes before, and as they transitioned into, kindergarten. Data was collected using qualitative methods, including semi-structured interviews, participant observations and photographs. Findings from this study showed a tension for focal mothers about whether to include digital tools in their children's repertoire of activities in the home. Both mothers discriminated between children's play and digital spaces, discounting video games and other digital activities as play. They devalued digital activities, believing that too much exposure to digital tools would result in children becoming "addicted". The children, however, considered their engagement with digital tools to be play, moving seamlessly between digital and non-digital activities, particularly during narrative play (e.g., watching a video on an iPad and transitioning to a chalk board to create alternate story lines for the video's characters). They did not experience tension between print and digital tools, engaging fluidly with a variety of tools to understand their worlds. Therefore, digital texts can be considered mirrors or extensions of non-digital texts, thus complimenting them and not competing with them. There is a need

to appreciate children's digital play and its role in children's understanding of their social worlds.

Parental mediation of digital media use in young children in Slovakia

Pavel Izrael and Juraj Holdoš Catholic University, Slovakia

The changes that have taken place in technology, communication and media environment have led to significant shift in everyday family practices. Toddlers and preschoolers are introduced to mobile technology at an early age, with many of them using touchscreens on mobile phones or tablets on a daily basis. Children's preferences towards a specific device or media platform may vary depending on media availability in households, yet, when tablets and smartphones are available, they tend to prefer them for their multifunctionality and sense of autonomy that their ownership gives them.

The presented paper focuses on the issue of parental mediation of digital media use with children under eight. Research on parental mediation in Slovakia is scarce and for this age group almost non-existing. The authors' aim is to identify parental mediation strategies applied by parents in relation to use of digital devices in families with young children. The research theoretically draws on parental mediation constructs proposed by Nathanson (2001), Valkenburg (1999), Livingstone and Helsper (2008) and Nikken and Jansz (2011) as well as methodology applied in EU kids online research. The research is built on data gathered from sample of parents (N = 130) of children aged 5 – 8. The research objective was to identify mediation strategies, their occurrence and correlates of such practices. Among correlates were included religiousness, socio-demographic and media-related factors. The results show that parents apply enabling mediation most frequently, followed by technical mediation and monitoring. In addition, they restrict and supervise many media-related activities. The least restricted activities are watching videos and using the internet for school homework. Only few factors were confirmed to correlate with mediation strategies. There was positive correlation between restrictive mediation and perceiving the internet as a risk. The more negative attitude to the internet, the more restrictive approach of a parent. In addition, parent's media competences were related to some mediation strategies, suggesting that the higher the competence the more frequent use of a given mediation strategy.

3.5 Individual papers

Chair: Julia Gillen, Lancaster University, UK

Room: Graphene 1

Movement, meaning and affect; the stuff childhood literacies are made of

Karen Daniels, Sheffield Hallam University, UK

Accounts of early learning often present children as vibrant learners and open-ended, play-based approaches to early learning in classrooms are often seen as facilitating and extending children's diverse pathways to literacy. In this presentation, I draw on episodes of data from an ethnographically informed research study examining a class of four and five year-old children's ongoing activity moment-by-moment in an Early Years setting in England. Following children, as they followed their interests during 'free flow' time in continuous provision, I utilised combined techniques of observation, multimodal analysis and mapping of children's bodily movements. In this way I was able to examine the ways in which patterns of bodily movements played out in direct and ongoing relation to the emergence of children's literacy practices.

Some areas of the classroom were more open to negotiation than others and classroom tools, materials and furniture certainly had sanctioned uses, informed by pedagogical goals. This gave rise to the consideration of three dimensions that shaped meaning making in often surprising and unpredictable ways: the norms, routines and pedagogical practices of the classroom; the materials children encountered; and children's bodily movements. Children's literacy practices emerged from children's ongoing activity, were intricately shaped by these three dimensions and led to the production of child-generated sites of interest that facilitated their collective participation.

The study drew acute attention to the ways in which children's spontaneous and experimental movement was critical to the meanings made as children continually re-purposed, re-shaped and re-imagined the classroom materials and spaces around them. Three prevalent collective movement/interest formations that were intricately connected to child-produced meanings emerged from my close observations of children as they followed their interests. Child produced meanings were at the same time generated by and generative of the dynamics and patterns of children's movements and this created affective atmospheres that appeared to propel the further production of meaning.

I argue that the role of spontaneous and ongoing movement and the ways in which this gives rise to literacy practices is an area for further investigation and suggest that focusing on movement can heighten researchers' and practitioners' awareness of the ways in which the spatial and material organisation of settings can radically shape children's literacy practices. Furthermore, attention is drawn to literacy as the ongoing and contingent production of practices

in a way that counters conceptualisations of literacy as sedentary and pre-determined.

Young Children's Explorations of Environmental Literature through Makerspace

Anne Burke, Memorial University Canada, Canada

This paper recounts a study focused on maker literacies designed through socially imaginative makerspace learning opportunities in a Canadian Early Learning Classroom. Young children ages 4-8 explored how creative sustainability play-based approaches, drawing from engineering, ecology, maker literacies and entrepreneurship, could develop collaborative solutions for open ended environmental problems. This project looked at new knowledge and systems around sustainability through the eyes of children within Simon Nicholson's theoretical framework of 'Loose Parts' with environmental children's literature, makerspace tools, and environmental ethics to help children address global warming and the conservation of global oceans and animals. The study spanned a two-year period, engaging the digital literacies of young children. Pre-service teachers played a pivotal role in this project, playmaking with young children through a hands-on investigation in sustainability and global citizenship. Preservice teacher responses to the project showed how they realized that creativity of children can be idealized through materiality, and regenerated into a digital multimodal creation when time and space was given for tinkering. The project encouraged the flourishing of a literacy of possibilities for student teachers and observed play-based civic engagement and agency. Importantly, this study realizes an opportunity for additional study, as sociocultural frameworks around maker literacies and creativity in community spaces can be shared to extend learning beyond the classroom setting.

Young children take roles in digital play

Elyna Nevski, University of Tallinn, Estonia

Today's infants and toddlers often grow in media-rich homes and are increasingly surrounded by a wide range of smart devices (e.g. touchscreen tablets, smartphones) and media content (such as videos, games, applications). Empirical studies (Holloway, Green & Livingstone, 2013; Kalmus 2013) suggest that toddlers' use of touchscreen devices is largely influenced by "important others" – parents and older siblings. Thus, parents and older siblings have a significant impact on toddlers' digital play (e.g. time, content, location).

My presentation is based on the results of ethnographic case study, which explored the digital play

between two sisters (21 and 54 months old), over a nine-month period. I use the Bronfenbrenner's ecological system theory and its extension (techno-subsystem) to explore the young children (0-3 years of age) digital play.

According to the typology of possible roles while children using technological resources (Arnott, 2013; Ljung-Djårf, 2008), my findings reveal that the toddlers can take different roles in digital play – 1) owner 2) active participant 3) passive spectator 4) leader. The results indicate that the older sister makes a significant difference when she plays with her own or younger sister's touch screen tablet. Sometimes older sister use her physical strength to push the toddler away, whereupon the toddler often started to cry to bring the parents' attention to the injustice that had occurred. Oftentimes the sisters' joint book reading sessions turned into joint mixed media experiences, they searched for the songs on YouTube and played them on TV, often dancing and singing along.

16.10 – 16.25 Coffee

Room: Pioneer Room

16.30– 17.15 DigiLitEY Management Committee Meeting

DigiLitEY Management Committee members only

Chair: Jackie Marsh, University of Sheffield, UK

Room: Cotton Theatre

18.30 Wine reception and Buffet Dinner

Room: Pioneer Room

Friday 8th March 2019

9:00 – 9.45 Keynote C: Making Noise! Toward a 'Sound' Theory of Young Children's Making

Chair: Guy Merchant, Sheffield Hallam University, UK

Presenter: Jon Wargo, Boston College, USA

Room: Pendulum Suite

Taking an ethnographic ear to young children's play, this talk explores the audible contours of 'noise' in early making. Examining the sonic dimensions and vibratory signs that remain silenced in maker scholarship, this presentation works through a series of repeated and embodied listenings. In doing so, it examines how sound – as a modal resource for design and material quasi-object – stitches together the social while amplifying new pathways for tuning in to young children's literacies. To facilitate this demonstration, the presentation draws on data from a longitudinal multi-sited study of young children's (ages 3-7 years old) making. These side-by-side analyses of children's 'noise,' refracted through the twin-lenses of multiliteracies and feminist new materialisms, work to develop a sound theory for young children's making. Sound, here, is configured as an object to think with. Disrupting linear notions of multimodal design in early literacy, this talk registers early making in a new key.

9.50 – 11.05 Parallel Session 4

4.1 Symposium - A day in the life: developing innovative methodologies to research literacy, multimodality and resilience in diverse locations

Chair: Julia Gillen, Lancaster University, UK and Catherine Ann Cameron, University of British Columbia, Canada

Room: Pioneer Room

This symposium discusses the Day in the Life research methodology designed to investigate thriving, which began with a focus on early childhood. Projects employing the Day in the Life methodology are united by use of video and other participatory methods.

The original project studied thriving of two-and-a-half-year old girls in Canada, Italy, Peru, Thailand, Turkey, UK and USA, enabling substantive foci to emerge from the visual data, such as their embodied use of space and literacy (Gillen and Cameron, 2010). Later the methodology was used in the Negotiating Resilience Project to explore the resilience of youth in diverse global settings; in an international study of

independently-living older adults, and in the DigiLitEY programme to investigate the place of digital technologies in the lives of European children under 3.

In this symposium we focus particularly on the "A day in the Life: transition from home to school" project. We will describe the evolving, adaptive research design, reflect on and share particular challenges and insights that shed light on literacy and multimodal practices in these children's lives. We place particular emphasis on the enriched views of young children we make available when we explore their experiences and adaptations in the ecologies of both home and school.

Adaptation of the Day in the Life Methodology to Study Young Children in Transition to School

Catherine Ann Cameron, University of British Columbia & University of New Brunswick, Canada

Our quasi-ecological visual methodology films one Day in the Life (DITL) of thriving participants in diverse locations around the globe during different periods of development. Visual data are supported by interviews with participants, family members and teachers, by environmental sketches, elicited photography and follow-through exchanges.

In the current study the children in transition to school were nominated by their teachers as "doing well". Recruitment involved visits to home and school, providing details of visual-research procedures, and ensuring fully informed consent. The Day in the Life filming commenced in the children's homes early in the morning, then captured the full school day and followed them home for the rest of their waking day. A half-hour compilation that represented events of the Day was used to elicit parent, child & teacher reflections. Data were shared with the entire international team who consulted on theme selection, analysis & dissemination, grounded in the rich corpus of data.

I finish this paper by reflecting on some of the particular methodological and ethical challenges of this project and the rewards of the international collaborative work that has resulted in an Italian translation of the toddler research (Gillen & Cameron, 2015) and now an international collaboration on the transition to school research in Portuguese (Stella & Cameron, under review).

Behind the Scene: Reflections on Researchers' Experience Capturing Audio-Visual Data during a Day In The Life

Nora Didkowsky, Dalhousie University, Canada

Audio-visual materials can be rich and effective me-

dia for demonstrating dynamic social interactions and processes. Increasingly however, researchers are becoming aware of the need to pay attention to the site of production and its influence on visual discourses. Research visuals are products of human decisions, and therefore require an analysis that goes beyond the visual text itself to take context into account (Banks, 2001). In this paper, we reflect on the experience of capturing Day In The Life (DITL) audio-visual data in quasi-ecological settings from the researcher's perspective. Due to the often spontaneous nature of the participant-directed Days, as researchers we often needed to make unexpected filming or other decisions. This paper provides examples of situations and instantaneous decisions made while filming the DITL. We give an account of how our training as DITL researchers, the equipment we utilized, the social and physical environments in which the filming occurred, decisions about sound, lighting and compositionality, unanticipated ethical quandaries in the field, and participants' reactions to the camera, all played essential roles in the visual data co-created with participants.

Transcription as a dynamic craft in the A day in the Life methodology: Insights into the development of understandings of citizenship in a five-year-old's transition to school

Julia Gillen, Lancaster University, UK and Catherine Ann Cameron, University of British Columbia, Canada

In this paper we illustrate and reflect on how the Day in the Life methods enabled us to devise and combine approaches to transcribing and presenting data from a specific day of a five-year-old girl of Indo-Canadian heritage (Gillen & Cameron, 2017). In the video data we found connections between the multimodal meaning-making practices of Suhani across two encounters in one day, the first in 'mat time' at a kindergarten and the second at afternoon tea with her family. In the first the teacher reads aloud to a group, introducing them to the history of beavers as symbols of Canada. Later, at afternoon tea with her grandparents Suhani demonstrates her close attention to the teacher's multiple modalities while also finding her own ways of bridging gaps in her understandings, drawing on family and media discourses.

We explain how we approached this data by drawing on linguistic ethnography (Creese, 2008) enriched by a multimodal approach to studying the co-construction of familial narratives (Cameron and Gillen, 2013). We illustrate our three approaches to transcription used in the study that respond to the suggestion by Copland & Creese, (2015: 196) that transcription should be "fit for purpose" and "provide the level of

detail required for the job they have to do". We conclude by briefly demonstrating the insights that were gained from holding transcription as a dynamic craft.

Becoming literate across contexts: Drawing practices in the school and at home through the lens of a quasi-ecological methodology

Giuliana Pinto, University of Florence, Italy, Anne Hunt, University of New Brunswick, Canada, Claudia Stella (Mackenzie University, Brazil, Catherine Ann Cameron, University of British Columbia, Canada

We adopt a view of literacy, referred to as 'new literacies' or 'multiliteracies', assuming that individuals construct knowledge from multiple sources and representational modes by means other than traditional reading and writing, including linguistic, visual, audio, spatial, and gestural ways of meaning-making (Gee, 2014). Young children's drawing is a valuable means for providing multimodal learning opportunities (Anning and Ring, 2004; Kress, 2008), in literacy practices in and out of school. Our sociocultural framework examines the social context (e.g. students, parents, teachers, community) to understand drawing practices as constructed, negotiated, and multiple.

We report on the drawing experiences of four thriving children in their first year of primary school in Italy, Canada and Brazil, applying the 'day in the life' visual methodology and we analyze them in the context of extensive interview and field-note documentation. All spontaneous drawing activities in the contexts of participants' school and familial daily lives were documented. We show how drawing experiences in and across different contexts are complex and multilayered, and how drawings are used collaboratively by children, teachers and family as powerful meaning-making tools. The drawing experiences we document afford access to the rich repertoire of children's pictorial language in the natural flow of everyday experiences, leading to new ways of understanding their experiences as well as their meaning-making through symbolic representation.

Shared book reading at home and in school: supporting successful transitions

Anne Hunt, University of New Brunswick, Canada

Transition to school brings many new challenges (Cameron et al., 2016). Children who are used to the flexible routines and one on one attention of the home now must adapt to a learning environment that is regulated, shared with others, and often decontextualized. For Ali, the child we follow for a day, the transition is complicated by his situation as a newcomer

to Canada. On school entry he and his family - mother, father and ten year old brother -, had only been in the country for nine months, having immigrated from Dubai. The home language is Farsei. However, both parents have encouraged Ali and his older brother to use English when speaking with the DITL team. Ali is also enrolled in English language classes at the school. His parents attend language classes at the Multicultural Centre.

Ali was nominated by his teacher as making a successful transition to school. In our day with him we see evidence of his sense of power, knowledge, connectedness, worth and vitality. The focus is on two events, a story read by the teacher to the class, and Ali and his mother reading a book that has been sent home from school. We examine Ali's active contributions in both environments

4.2 Symposium – Modes, Making, and Materialities: Exploring the potential of materialist and maker research for reconceptualizing early childhood literacies

Chair: Jennifer Rowsell, Brock University, Canada

Discussant: Jackie Marsh, University of Sheffield, UK

Room: Cotton Theatre

Building on momentum for materialist and maker perspectives on literacy research (Kuby, Gutshall-Rucker, & Kirchhofer, 2015; Kuby & Rowsell, 2017), this symposium thinks about the stuff, materials, artifacts, and ephemera that exist within research sites and their significance in moving literacy studies into expansive and potentially activist stances on meaning making. Drawing on work such as Rosi Braidotti's *The Posthuman* (2013), we delve into the possibilities that posthuman thought offers to research, communities and literacy research. Braidotti, among others, delves into the possibilities for human thinking as being with, and we seek to bring forward this call for literacy researchers of being with materials and making with materials across educational contexts. Complementing a posthuman gaze, maker-oriented, DIY spaces (Wohlwend & Peppler, 2015) offer an ideal lens for material/immaterial work. To this end, we bring together researchers across four studies in Netherlands, United States and Canada to deconstruct how maker and posthumanist perspectives have the potential to open horizons to build communities of active learners. The four papers along with the Discussant's (Jackie Marsh) framing of key issues align well with the theme of the conference.

An Educraftivist Manifesto: Building a language of description for maker

pedagogies

Mark Shillitoe, Maker Educator, Netherlands and Jennifer Rowsell, Brock University, Canada

An answer to the call for reconceptualizing children's pedagogies in the face of the digital age have been makerspaces and maker approaches to learning and teaching (Peppler, Halverson, & Kafai, 2016; Medina & Wohlwend, 2016). Although there is certainly a growing repository of research and theory on the maker movement and makerspaces (Marsh et al, 2017), there is less understanding about specific pedagogic components of maker work and the field needs a more robust language of description for what happens when children 'make' across formal and informal contexts. In this presentation, we feature data from two research studies that share the same three burning questions: How do materials affect knowledge? Why make art from everyday things? And, What comes first, the material or the idea? In an effort to theorize making as a literacy event (Heath, 1984), we focus on terms and ideologies that bring to the surface ontological and epistemological strands at work during makerspace activities. Framed around the three burning questions, we have documented children's crafting, hacking and tinkering in primary-junior classrooms in the Netherlands and Canada to finetune how researchers theorize the properties and processes of maker work. Both researchers are involved in a large European Union Horizon grant led by Jackie Marsh entitled MakEY and as a maker researcher-educator and a multimodal scholar, we foreground case studies based on our fieldwork to finetune concepts and ideologies that circulate within makerspace theory but that still remain opaque. Case studies explore such concepts as material knowledge; what if thinking and being; the art of maker inquiry; educraftivist approaches; and sense-laden materialities. To avoid romanticizing the notion of making, we push against some of the maker rhetoric around studentcentred learning and creativity to explore ways of rethinking existing hierarchies in classroom contexts and the implications of such rethinking work for practice and theory.

Literacies in Motion: Reading Toys in Toddlers' Wandering and Wobbly Go-Pro Videos

Karen Wohlwend, Indiana University Bloomington, USA

The concept of literacies in motion enables seeing children's play interactions as readings and makings with toys' embedded action texts (sedimented identities; modal meanings, cultural expectations; media narratives (Wohlwend & Peppler, 2015). Young children's interactions with a Doc McStuffins exhibit in a

US Midwest children's museum shows that play produces action texts when children combine toys, bodies, and space to enact pretend scenarios in mobile and momentary texts that leave no visible trace. Using multimodal methods informed by feminist materialisms (Thiel, 2015), we track and unpack young children's interactions with toys, bodies, and space to understand making in playspaces such as playgrounds and museums where the products are pretend and produced by moving bodies, rather than by transformation of consumable materials into artifacts. Using video analysis software, we analyzed first-person video data (e.g., chest-mounted Go-Pro cameras that children wore as they played and handled toys in a pretend clinic in a Doc McStuffins children's museum exhibit). Nexus analysis (Scollon & Scollon, 2004; Wohlwend & Peppler, 2015) tracked children's movements, talk, actions, and movement with museum materials, extending a conception of pretense with toys as transitory texts that leave no trace but are nonetheless highly significant to children.

Making Sounds or 'Sound' Making? Tracing Making Across Children's Atmospheres of Play

Jon Wargo, Boston College, USA

Working at the axis of radical empiricism (James, 2003) and posthuman perspectives on literacies (Author, 2017; Hackett & Somerville, 2017; Kuby & Rucker, 2015; Thiel, 2015; Zapata & Van Horn, 2017), this paper enters into conversations concerning what constitutes 'sound' making for young children. Interrogating making "in the complex field of conjunctions opened up by the transitions in experience" (Manning, 2016, p. 64), this paper traces the sounds of making across children's atmospheres of play. It discusses how composing with sound highlights dimensions of more-thanhuman relationality, reciprocity, and plurality with the environment (Merewether, 2018; Nxumalo, 2018; Taylor, 2017; Todd, 2016). Drawing on data from a larger longitudinal study exploring children's making, it thinks with new materialisms (Coole & Frost, 2010; Dolphijn & van der Tuin, 2012) and sound studies (Gershon, 2013; Goodman, 2010; Schafer, 1993; Voeglin, 2010) to examine how children compose atmospheres with/through sound. Atmospheres - turbulent amalgams composed of air-body-matter - "designate the sense of the shape of forces as they make a felt difference across and within bodies, both human and nonhuman" (McCormack, 2014, p. 607). Thus, the relational assemblage of children's play is read here as an atmospheric text, one that will be questioned to examine what making is configured 'sound' and what forms are rendered negligible.

4.3 Individual Papers

Chair: Guy Merchant, Sheffield Hallam University, UK

Room: Graphene 1

Markers and aesthetic potential of interactive storybooks

Gabriella Daroczi, Eötvös Loránd University of Budapest, Hungary

In this world of digital games that offer interaction and are based on „crossing two worlds“, it is of utmost importance that, on the one hand, adult members of our contemporary society see the difference and differentiate between interactive storybooks and digital toys which do not offer narratives.

On the other hand, they should not place the Gutenberg and Neumann galaxies into competitive position. They require different types of presence: the first needs reception, which notion has been researched thoroughly up to this date, the latter involves active participation.

The focus of the analysis of interactive storybooks mentioned in my presentation is the ways of representation of this medium: verbal, written or iconic symbology of narratives and their structures; the relationship between game and narrative; the description of the offered participation and empathy by these applications; as well as a child's medially initialized imaginative activity. The aim of my presentation is to indicate that the threat to the future of reading cannot be derived solely from medial basis.

Our hypothesis is that that interactive storybooks broaden and strengthen the path of signification on their own procedures. Children become participants in the stories as the result of performance elements. The feeling of empathy might become a deeper experience since interactions emphasize the present tense of the events. On the other hand, the basis of cognition is more strongly embedded physically. However, the participants "have to have several special skills" regarding cognitive abilities which have been activated in an interactive environment.

Children's Collaborative Multimodal Digital Stories

Marianne Undheim and Trude Hoel, University of Stavanger, Norway

When groups of young children (4-6 years old) are designing multimodal digital stories together, they are collaborating, both with their peers and with their teacher. Still, we know little about how the story evolves through such collaborative design processes, and what actually contributes to the development of a common digital story. The focus in this paper is to

explore how groups of children and a teacher collaborate and design multimodal digital stories, with a special focus on the narrative development during the process. The research question is: “What contributes to develop the story when a group of children and a teacher collaborate and design a multimodal digital story together?”

Literature reviews have revealed some previous research where young children are designing multimodal digital stories based on inspiration from fairy tales, music, visual art or media (Bratitsis et al., 2013; Fler, 2014, 2017; Hesterman, 2011; Leinonen & Sintonen, 2014; Letnes, 2014). In most of these studies, each child is making his/her own story, individually or in pairs, thus there is a need for more research on children designing multimodal digital stories in groups, which is a preferred form of work in many kindergartens.

In order to explore the collaboration processes and reveal key contributors to the multimodal digital story, this study draws on narrative theory (Bruner, 2003) and multimodal communication theory (Kress & Selander, 2012) as the theoretical framework.

The research's methodology is qualitative, with a two-case study and narrative research approach, focusing on contemporary events. In each case a group of six children collaborate and design a multimodal digital story together with their teacher, based on inspiration from dialogue based reading of a picture book-app. The data material consists of field-observations and interviews with both teachers and children. Trust, loyalty and confidentiality have been essential in the interaction between the researcher and participants, and has been taken into account and reflected upon through the entire process.

The development of the narrative during the design process, from the first inspiration to the finished product, is the focus of the analysis. Preliminary findings indicate that children's motivation, group interaction, and children's and teachers' experience with digital technology, are important contributors to the development of the story. The research findings will be a contribution to knowledge about creative and collaborative use of digital technology with young children.

Young Children's Learning Modes in a Digital Sphere

Lena Lee, Miami University, USA

In many societies, young children often use digital media technology (e.g., iPods, iPads, and game applications [apps]) as one of their dominant play experiences to acquire new knowledge and ideas, as well as begin to understand the world around them. Young

children can develop their own knowledge and learning skills by playing with digital media appropriately (e.g., Carr, 2012; Clements & Sarama, 2007; Donohue, 2015; March, 2016; McGowan & Smith, 2013; McManis & Gunnewig, 2012; Pegrum, Howitt, & Striepe, 2013).

Considering the relatively new way of children's play and learning, the research starts by taking Deleuzian theoretical framework. Specially, it is grounded with the two notions more significantly: one is that of assemblages (Deleuze & Giattaro, 1987) with which children and their learning can continue to transform through themselves, the others, and environments. The other is image of thought (Deleuze, 1994) where a traditional or assumed image of thought on young children can lead or/and influence what is true for and what is concerned about the image of thought on children. As a result, I attempt to understand young children and their own learning process with digital media not only as individualistic, but also holistic, coherent, and relational by means of this research project.

This research project the paper discusses will be to ponder upon the pedagogical need for child-centered, culturally responsive, and reflective learning with digital media at school as one of major resources for children. It is also aimed at promoting the meaningful learning experiences of low-income preschool children with digital media, who are often marginalized in many societies. The research project is conducted in three preschool classrooms which are located in an urban city of an American Midwestern area. The preschools have all children who received a 100% free meals and these classes are racially, ethnically, linguistically diverse. A total of 45 students (aged 3-5 years old) participate.

This paper presentation will discuss how young children explore digital media—namely an iPad—in their classes. In particular, it will emphasize in what ways these children use the iPad, when their peer discussions occur, and what types of learning they explore. The iPad has two different types of apps including educational content apps and openended apps. It is placed in their free choice/learning center time through the semester. The research project is in process now, and thus the exact findings will be shared at the conference. In spite of this, this presentation can be significance to understand young children and their contemporary uses of digital media in a more in-depth way by providing valuable discussion about young children's learning modes in a digital sphere.

4.4 Individual Papers

Chair: Lisa Kervin, University of Wollongong, Australia

Room: Conference Room 2

Supporting Spanish in the English-dominant Classroom: Digital Tools Mediating Second-graders' Heritage Language Use

Lindsey W. Rowe, Ohio State University, USA

In the United States, classrooms are becoming increasingly culturally and linguistically complex, often serving students who speak a variety of heritage languages. Despite the linguistic diversity of these emergent bilingual students, many schools operate under restrictive English-dominant, monoglossic language ideologies and policies that position English as the only valued or appropriate language of schooling. And yet, research indicates bilingual children who learn in environments where translanguaging (the flexible use of different named languages) is promoted, are more likely to have positive views about their identity and perform better academically in both languages. Research is needed, then, looking at ways to mediate students' heritage-language use in English-dominant spaces. This study addresses this need by considering the possibilities of using digital tools to support students' heritage language use while composing multimodally. Specifically, it answers the question: How do emergent bilingual students draw upon available digital tools to compose bilingual, multimodal texts? Data were collected using ethnographic methods in one second-grade classroom in the United States during one school year. The researcher engaged in participant-observation as she worked with a small-group of Spanish/English emergent bilingual students, inviting them to use digital tablets to compose bilingual, multimodal eBooks which included images, written text, and audio recordings. Data sources included audio/video recordings of these composing events, semi-structured interviews with students addressing their language and composing practices, and collection of students' digital texts. Data were analyzed using inductive methods, initially coding for mediating social factors that supported the use of Spanish in student interactions, then examining the specific types of technology that mediated Spanish-use and the ways students drew upon the affordances of these digital tools to support their heritage language use. Findings indicate that students creatively drew upon multiple digital tools to compose bilingually, with three specific tools seeming especially helpful for mediating Spanish-use: the capacity to add oral audio recordings to digital texts, the ability to insert specific emojis into texts, and the use of the Google Translate application to support heritage language translations. The affordances of these digital mediums for supporting students' heritage language use are shown through close analysis of three interactions as students used each digital tool. Challenges that arose are also discussed, such as recognizing the lim-

itations of translations produced by Google Translate. These findings highlight the potential, and challenges, for using digital tools to mediate students' heritage language use, even in English-dominant spaces.

Teachers' beliefs towards digital literacy and multimodal learning in early childhood – a qualitative study about epistemic awareness

Gudrun Marci-Boehncke and Tatjana Vogel, Technische Universität Dortmund, Germany

The competent use of Information and Communication Technologies (ICT), as well as the promotion of Digital Literacy, had become crucial topics in international scientific discourses on the one hand and in recent school development on the other. International, as well as national studies (e.g. [1], [2]) show that especially Germany's teachers are relatively reserved appreciating the potentials of digital media in class. They consider digital media as means for administrative purposes, in foreign language classes and as a challenge for top-performing pupils - but they concede just little potential for the support of rather poor performing pupils or even those who would need inclusive schooling. One factor that influences the teachers' use of technology in class is the practice of ICT. Recent studies ([3], [4]) emphasize its relevance for teachers' attitude towards digital media and their use in class. However, there is another factor, which seems to influence digital media use. Practice does not seem to be a sustainable guarantee for the implementation of digital media. Although teachers were trained in workshops they fail to implement digital practice in class ([5],[6],[7],[8]). Blackwell, Lauricella, and Wartella [9] had emphasized the influence of teachers' attitude and confidence as decisive factors for being digital in class. As part of the EU Project DigiLitEY Cost 141010, this paper refers to an international survey of overall 80 in-service teachers from eight countries. We took the primary-school teachers interviews with internationally standardized interview questions. For Germany, we participated in eight qualitative teachers-interviews of four primary schools. With the help of content analysis, based on MAXQDA, and the use of invivo-coding, we wanted to find out more about their knowledge as regards a possible theory of teaching as well as their theory about media that relates to their school practice. Epistemic as well as epistemological knowledge has been described as factors for efficient learning ([10], [11]). Moreover, we wanted to know in how far the teachers show an incorporated theoretical knowledge of digital reading and reading education as well as an understanding of mediatization ([12], [13], [14]). In our analysis, we examined the teachers' reflectivity and orientation towards future challenges [15].

The content analysis shows that it can be rather explained by a kind of professional self-perception or ethics that leads to a distant reflexion of one's role and responsibility for the next generation. This paper will discuss this theoretical background, the methodology of our study as well as its detailed content analysis of the data from Germany.

Results from a survey about forming digital literacy at Bulgarian primary schools

Lubomira Parijkova, University of Library Studies and Information Technologies, Bulgaria

I'll present some results from Bulgarian project that I'm participating in – "Digital Competencies and Media Education at Pre-school and Primary School Age" (DN 05/8 14.12.2016). The working package that I lead is about an interconnection between reading and formation of digital literacy of pupils of primary school age. It has been analyzed a connection between reading literacy and digital technologies. In the first stage of the project my team has done three types of polls – for students (priority from fourth grade), for parents and for teachers. Based on preliminary investigations and on an acquainting with literature on the problem in Bulgarian and English languages it has been developed a toolkit that is integrated in the questionnaires.

The questions about reading and digital activities were addressed to 637 students from the third or fourth grade of 11 Bulgarian cities, from all types of settlements in Bulgaria – capital, very large cities (with a population of over 200 thousand), large cities (with a population of 100 thousand to 200 thousand inhabitants), middle-size cities (with a population of 30 thousand to 100 thousand inhabitants), small towns (with a population of 10 thousand to 30 thousand inhabitants), very small towns (with a population of less than 10 thousand).

This article will present the results only for key participants for our COST project – up to 8 years old students. 3% of the interviewed children are at the age of 8 years old. They are 20 students from the first grade – 7 boys and 13 girls from 8 Bulgarian towns. All 20 students study at school information technologies.

The research describes how these students operate with digital technology, how often they use it, when they start use it, etc. The questions in section Digital literacy are based on these criteria: information processing; content creation; communication; problem solving; safety of self assessment grid for digital competence (Europass). 10 students have defined themselves as Basic user; 5 of 20 have defined themselves as independent users and the other 5 as proficient users. It is very interesting that the youngest participant of the investigation said that he has Proficient level

of digital competency. That means that children cannot really do a self-assessment, unfortunately. There is also question about digital devices that children's families own. The article also presents a comparison between students' assessment of reading and digital technology. It is not surprise that children use digital technology for playing games and that gives them pleasure.

Valuing Young Children's Signs of Learning: Observation and Digital Documentation of Play in Early Years Classrooms

Kate Cowan and Dr. Rosie Flewitt, University College London, UK

In early childhood education, observations of play have typically been documented in paper-based formats (e.g. scrapbooks, written notes, printed photographs) as part of assessment practices. However, there is a growing trend towards the use of commercial software to record learning in digital formats, where video, audio, photographs and writing can be combined. These multi-media forms of 'digital documentation' are significantly different to traditional paper-based practices. They offer the potential to create multimodal texts that represent children's multiple signs of learning in new ways, and the possibility to share these texts with parents and children themselves. However, the current lack of research-based guidance regarding digital documentation risks practices being shaped by commercial drivers rather than by child-centred learning theories.

Drawing upon a multimodal social semiotic perspective on learning (Kress, 2010; Bezemer & Kress, 2016), this presentation will report the findings of a one-year project funded by the Froebel Trust. The research worked with educators to develop an early childhood pedagogy of observation, documentation and assessment that brings Froebelian principles of the 'uniqueness of every child's capacity and potential' and 'holistic nature of development' to documentation practices in contemporary early years settings. Fieldwork included case studies of children aged 3-5 years living with disadvantage and/or in the early stages of learning English in three diverse multicultural kindergartens in London. A multimodal ethnographic approach (Kress, 2011; Jewitt, 2014) was used to offer multiple perspectives on the day-to-day lived experiences of observation and documentation. Video recordings, examples of documentation, interviews with educators, parent questionnaires and video-prompted discussions with children provided diverse insights into observation and digital documentation in practice.

Recognising that children's learning through play is

often expressed in subtle ways, through silent actions and interactions as well as through language, this research highlights the potentials and constraints of practitioners' diverse approaches to observing and documenting play in contemporary early years settings. The findings draw attention to which signs of learning are typically privileged in early childhood education, and which aspects of children's learning may often pass unnoticed and undocumented. The study highlights the insights multimodal texts can offer into children's lived experiences, whilst recognising a number of challenges presented by new digital forms. The study argues for respectful use of observation and digital documentation which values all children's subtle signs of learning, at a time when early years assessment is under particular debate.

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4.5 Individual Papers

Chair: Jackie Marsh, University of Sheffield, UK

Room: Graphine 2

Estonian mothers' experiences with digital kidnapping

Andra Siibak & Keily Traks, University of Tartu, Estonia

Scholars (e.g. Brosch, 2016) acknowledge that today's parents are facing more unique parenting problems than previous generations. In fact, it has been suggested that, on top of the parents' existing work and family responsibilities, present-day parents also need to "work a third shift" to negotiate their children's digital footprints (Ammari, Kumar, Lampe and Schoenebeck, 2015).

Studies suggest that sharing the joys and challenges of parenthood and documenting children's lives publicly have become a social norm in the social media era (Clark et al 2015; Blum-Ross & Livingstone 2017; Lipu & Siibak, forthcoming). In fact, according to the findings of the AVG survey (2010) carried out in the US, Canada, Australia, New Zealand, Japan, France,

the UK, Germany, Italy and Spain, 81 percent of children under the age of two already have some digital footprint created by their parents. At the same time, active sharenting of young childrens' photos may sometimes also lead to unwanted consequence, for example, incidents of "digital kidnapping" i.e. a stranger steals photos of a child online and reposts them online.

Semi-structured individual Skype-interviews with Estonian mothers who had fallen victims of digital kidnapping (N=14) will be carried out during autumn-winter 2018 to explore mothers' reflections and experiences related to "digital kidnapping". We aim to explore how the mothers had found out about the incidences of "digital kidnapping", how they reacted upon the situation and how their experience did influence their overall social media usage and sharenting practices. In our presentation we will introduce the preliminary findings of the study and aim to propose of typology of "digital kidnapping".

Reconceptualising early childhood literacy facing child-robot interaction

Nils F. Tolksdorf (presenter) & Katharina J. Rohlfing, Paderborn University, Germany

Literacy practices are changing fundamentally in the course of digitalization and today's children grow up in a world in which they increasingly encounter digital technologies earlier in their development and more frequently than years ago. Children can not only experience computers and tablets as devices on which e.g., educational apps are installed, but also social robots are increasingly being developed as artificially intelligent, digital tools that support and expand early childhood education offering new possibilities for engaging children in social interaction (cf. Goodman, 1986) and thus more effective literacy practices such as joint book reading (Mubin et al. 2013; Saerbeck et al., 2010). In comparison with other digital media, a social robot provides additional features that can enrich an interaction by using various social signals (e.g., eye-gaze, gestures or body posture) and are crucial to robust language learning (Konishi et al., 2014). With the benefits of an embodied social agent, researchers have begun to apply social robots in an interactive, dialogic shared storytelling style to explore potentials and limits of supporting emerging literacy skills (Grimminger & Rohlfing, 2017). Linking to this study, our main aim in this paper is to present a study design, according to which a social robot was applied in a language game within a shared book reading situation. We will report the observations that we made during the sessions conducted with 12 preschool children aged 4 to 5 years and discuss potentials, limits and ethical aspects of the use of social robots for literacy activities but also take a closer look on the chal-

lenges in designing a children-oriented interaction.

The relationship of family literacy and digital environment with letter recognition in preschool age and later academic achievement

Marina Kotrla Topic, Institute of Social Sciences Ivo Pilar, Croatia and Silvija Mihaljevic and Vedrana Veic, Elementary school Antuna Mihanovica, Croatia

Research clearly emphasizes the importance of children's home literacy environment for letter learning in preschool age, and letter recognition is a good predictor of later academic achievement. But, since the lives of children today are getting more and more saturated with digital technology, it is important to monitor how and if this changes modern families literacy environment, and how these changes are related to children's emergent literacy skills, and later academic achievement.

In this research we report preliminary findings from a small scale longitudinal study aiming to investigate the relationship of children's use of digital devices in home environment, as well as family literacy environment and their letter recognition in preschool age, as well as their school achievement in Croatian language one year later.

The study included 92 children from Croatia, mean age 6 years. The children were tested for letter recognition and their parents filled out a questionnaire, thus providing us with information on the amount of time children use different digital devices during working week or weekends, as well as with the basic information regarding home literacy environment. One year later, for 54 children from the original study, we obtained their average grades from written and oral language skills in Croatian language, as well as their final grade in Croatian language after finishing the first grade of elementary school.

Letter recognition at preschool age has been positively related to the number of books the family owns, and the number of children's books (Spearman's rho value .240* and 332** respectively), and negatively related to time the children spent using a computer during weekends (Spearman's rho=-.286*). There were no relations between the time parents spent with their children in joint reading, teaching children letters or reading and letter recognition.

Furthermore, there was a moderate negative relation between time children spent using mobile phones during weekend and their final grade in Croatian language one year later (Spearman's rho=-.407*). The time parents spent reading with their children was positively related to oral language skills in Croatian language one year later (Spearman's rho=.291*).

Further research is needed that will in more detail monitor how young children's digital technology use in home environment is affecting different aspects of more traditional family literacy environment and how this might affect children's emerging literacy skills and later academic achievement.

11.10– 11.25 Coffee

Room: Pioneer Room

11.30 – 12.30 Special Session 5: MakEY Symposium (Finland, Iceland, Norway, Romania, USA, UK, Germany, Denmark)

Chair: Jackie Marsh, University of Sheffield, UK

Room: Pendulum Suite

In this presentation, the MakEY team will present the outcomes of an international study on makerspaces in the early years. Projects were undertaken in seven European countries and the USA, in which makerspaces were offered in early years settings, schools, libraries, museums and community centres. The session will begin with an overview of the project, before providing time for conference delegates to circulate posters outlining the different projects, and talk to the teams involved. A plenary session will close the presentation, which will provide opportunity for discussion and reflections on the research and policy implications of the research.

12.35 – 13.30 Lunch

Room: Pioneer Room

13.35-14.20 Keynote D: Tracing Inter-textual Connections in Multimodal Composing: A Case Study of a Young Child's Filmmaking in the Early Childhood Classroom

Chair: Jackie Marsh, University of Sheffield, UK

Presenter: Cassie Brownell, University of Toronto, Canada

Room: Pendulum Suite

This interpretive project outlines how one third-grade child—a self-identified Black boy at a highly diverse urban elementary school in the Midwestern United States—adapted a personal narrative using diverse media into a multimodal, stop-motion animation video in a formal literacy classroom. Building on early childhood scholarship attending to how children incorporate popular culture into their schooled writing alongside contemporary research exploring

young children's making practices, this presentation cultivates a fuller narrative of children's creativity and composing in a digital age. Across the findings, the author details how the focal child used filmmaking to re-mix tools, means, and contexts while tracing the intertextual connections the child made to popular culture. Methodologically, this paper offers new insights into how data can be generated with and alongside children through an adapted retrospective analysis. Ultimately, findings challenge adults—researchers and practitioners alike—to revisit questions about who counts as a “good student” while facilitating insights into the potentials and possibilities of making for young children as they imagine, create, learn, play, and thrive in the formal literacy classroom.

14.20 – 15.45 Parallel Session 6

6.1 – Makerspace workshop

Chair: Mark Shillitoe, Maker Educator, Netherlands

Room: Pioneer Room

6.2 – Individual papers

Chair: Julia Gillen, Lancaster University, UK

Room: Cotton Theatre

All in the family: Siblings' multimodal interactions with digital media

Susan Danby, Sandra Houen and Pernilla Miller, Queensland University of Technology, Australia

Siblings growing up in everyday family life typically have many opportunities to participate in shared aspects of family social and cultural life, and yet we still know very little about siblings' multimodal interactions when using digital media. Using video-recorded data of everyday family interactions, this presentation investigates how siblings interact with each other when engaged in digital gaming. Gaining access to family everyday life is a sensitive and delicate matter, particularly when the data collection approach goes beyond interviews and surveys to observe and video record actual practices as they unfold. Analysis drew on ethnomethodological and conversation analysis approaches to show in fine-grained detail the multimodal actions that the siblings used to support each other's game play. Ranging in age from 2 to 9 years of age, siblings at times were participants in a mutually shared digital activity; at other times, while engaged in their own digital activities, they intervened to offer support to their sibling. For instance, there were instances of siblings calling out for help, and receiving solicited (or unsolicited) guidance through verbal and non-verbal means. As well, strategies of problem solving and collaboration were evident across these social interactions. The strategies used by the siblings

are not unique to a family interactional context, as collaboration and problem solving occur in other contexts as well, including in classroom settings. Rather, we show that the support undertaken by children is not an age-related feature; routinely we saw younger siblings supporting older siblings. The informal interactions that occurred without adult presence offers rare insights into contemporary sibling life in the home. It may be that digital gaming is providing new opportunities for siblings to connect with each other. Understanding siblings' multimodal interactions in their digital worlds may help better understand the positive influences of siblings in learning new concepts and skills, and how they socially produce their relationships.

The parental online media styles and the media use of baby's, toddlers & children (0-5 years) in Flanders

Tom Vandries, Davy Nijs & Stijn Custers, UC Leuven-Limburg, Belgium

The media use of small children (age 0-5 years old) & parental mediation strategies is a topic that has attracted the attention of more researchers (Courage & How, 2010; Nikken & de Haan, 2015; Zaman, Nouwen, Vanattenhoven, Deferre, & Van Looy; In press) in the last decade. New technologies are an integral part of children's education (Beyens & Beullens, 2016) with opportunities and risks (Mascheroni & Olafsson, 2014) Furthermore, there is a long history of parental styles and parental mediation (Baumrind, 1971; 1991) and recent the bi-directional influence of it on Children's behavior and internet & game use (van Rooij & van den Eijden, 2007; Valcke, Bonte, De Wever, Rots, 2010; Clark, 2011). In this study we contribute to this field of study with a focus on small children.

In our study we surveyed 400 parents of children between the age of 1-5.. The goal of this study is three-fold. (1) to map the digital media use (& duration) of baby's, toddlers & children between the age of 0-5 years old. We focus on the availability of devices, duration of use and the content consumed. Furthermore, we will analyze links with demographic data, parental beliefs about new technology and the use & content consumed. We questioned many demographic data here fore including a SES-scale (2) In this study we will link the 'general' parenting styles, their incidence & conceptual fit with this age group and their link with digital media use. We included an existing parental style questionnaire which we adapted to fit the age group. (3) As last we questioned their concerns about parenting their children's digital media. We will analyze possible links with demographic data.

Young Children's Playful Media Literacy in the 21st Century

Helle Hovgaard Jørgensen, University College Lillebælt, Denmark and Professor Helle Marie Skovbjerg, Design School Kolding, Denmark

The paper will show what playful media literacy looks like from a children's perspective. The overall question is: How can play research contribute to an understanding of young children's media literacy when the field of research is young children's play with digital media?

Young children's playful media literacy must be understood in a children's perspective because we must insist on taking children's media rich everyday lives and media use as a starting point for the educational work with media literacy. Therefore a rich and broad understanding of play is useful to frame young children's media literacy.

The investigation is based on an ethnographic fieldwork, where children's perspectives on media literacy is in the center of the research design. Inspired by a phenomenological approach interviews based on previous observations of is the key method (Corsaro, 2003; Gulløv & Højlund, 2006; Gulløv & Skreland, 2016; Kampmann & Børnerådet, 1998; Winther, 2016). The interviews have been carried out with a specific focus on children's play with digital media and is organized according to the basic trichotomy of media literacy: access, understanding and a creative expressive productive level (Carlsson, 2013; Drotner & Erstad, 2012; Erstad & Amdam, 2013). The ethnographic fieldwork is carried out on a Danish public school among 75 pre-school children in 2014/15.

The paper is situated in the field of childhood studies and Nordic studies of child culture (Corsaro, 1997; James, Jenks, & Prout, 1998; Juncker, 1998, 2013; Mouritsen, 2002; Toft & Knudsen, 2016a, 2016b). Play is conceptualized as valuable in itself (Bogost, 2016; Huizinga, 1963 [1938]; Jessen, 2008; Karoff, 2013; Skovbjerg, 2017; Sutton-Smith, 1997; Øksnes & Sundsdal, 2014), and the approach to media literacy is therefore grounded on sociocultural studies (Barton & Hamilton, 1998; Burnett, Merchant, Pahl, & Rowsell, 2014; Erstad, 2013, 2015; Jenkins, 2009; Lankshear & Knobel, 2006).

The main contribution of the paper is to underline the importance of the relation between media use and playful practices. While acknowledging that relation the paper shed light on how children perceive 'access' to digital media, how they grasp the representation/reality level and how the creative, expressive and productive level of media literacy is carried out in a playful manner. As a result, perceiving media literacy as a play practice takes its starting point in the child's perspective and points at a need to create elbowroom (*spielraum*), where digital media is both direct and indirectly present in children's everyday

school life.

6.3 – Individual papers

Chair: Deborah Wells-Rowe, Vanderbilt University, USA

Room: Conference Room 2

The digital mosaic approach: Multimodal research methods with children

Donell Holloway, Ashley Donkin and Lelia Green, Edith Cowan University, Australia

This methods paper details qualitative research protocols being used to investigate children's interactions with commercially available social robots. They involved the use of Clark's (2017) Mosaic approach, a research framework drawing on children's communicative strengths and preferences to co-produce research texts—in combination with the usual, conventional research strategies such as interviews and observations. The research project discussed here encouraged children to use a variety of digital and non-digital multimodal texts within a 'participatory' research framework. This process-orientated strategy emphasised children's meaning making and knowledge production, while at the same time this approach fostered children's agency and choice within the research process.

Participatory research is a qualitative research approach that allows children to actively participate in the research designed and become "co-constructors of knowledge and meaning" (Kleine et al, 2016, p. 6) within the research process. The use of this particular research strategy has been significantly influenced by the United Nations Convention on the Rights of the Child (UNCRC, 1989). This convention has brought children's rights to the fore; calling on global communities to acknowledge children's voice and agency. The UNCRC consists of 54 articles, which provide "guiding principles that fundamentally shapes the way in which we view children" as people who have rights that need to be observed and maintained (UNICEF, 2014).

The Mosaic approach recognises children's participatory rights during the research process by acknowledging that young children "have a broad range of modes of expression" (Clark, 2011, p. 313). Conventional modes of expression that children may use include written text, spoken voice, visual texts, gestures and spatial enactments. Digital modes of expression add to this range and taps into children's developing digital literacy. The use of digital and non-digital multimodal texts also caters for children's communicative strengths and limitations by assigning children greater choice in expression. Within the Mosaic approach children's texts complement traditional inter-

view (transcripts) or observational (field notes) research adding layers of information for researchers to reflexively consider and analyse a combination of texts.

Our ethnographic research involved children in co-constructing a digital report about their social robot using Book Creator, an e-book app which incorporates a variety of digital formats. Children chose from the following modes of expression: drawing, talking, enacting, show and tell, digital photography, digital audio, digital video, digital texts and code: and used them in combination to co-construct their report with the researcher. As digital technology is increasingly embedded in children's lives this, digital mosaic approach taps into children's use of digital technologies as everyday modes of expression.

The best game in the world: Exploring young children's game-related meaning-making via game design activities

Pekka Mertala, University of Oulu, Finland and Mikko Meriläinen, University of Tampere, Finland

While digital games have become a constituent part of young children's lives (e.g., Palaiologou, 2016) not enough is known about the kinds of meanings children give for games and gaming. This qualitative study contributes to filling the gap in existing knowledge by pursuing answers to the following research question: What elements make digital games meaningful for young children and why?

25 five to seven years-old Finnish preschoolers were asked to design –by drawing– what would be the best game in the world for them. The children were interviewed in a conversational manner during and after the drawing by a researcher the children were familiar with. The data were analyzed via abductive methods (Grönfors, 2011) by using the framework of game design elements -mechanisms, dynamics, and aesthetics– (Zichermann & Cunningham, 2011) as a theoretical thread.

The main findings are as follows: Many children's game designs were hybrids in which they combined elements from various fields of their life-world including their physical habitus, favorite games, media cultural sphere other than games, and family. This notion signals the importance of the aspects of personalization and identification in meaningful and engaging game design. The few designs that were direct copies of existing games were made by children who had no or only limited experiences of the particular game. It appears, that due the inaccessibility the children had created kind of a “mythical aura” around these games. To conclude, the study implies that an open-ended game design task can provide a space for

researchers and educators to learn from children's game-related meaning making. In addition, it can also engage children into critical evaluation of games and their design elements, and to contribute to the development of their critical game literacy (Buckingham & Burn, 2007). As gamified solutions are used more and more frequently in everyday services, critical game literacy can be argued to constitute one of the most important elements of 21st century digital literacies. Thus, this study offers implications for future research, pedagogy of early childhood education, and contents of early childhood teacher education.

Where o' wear my play: postdigital literacies of children

Judith Enriquez, Liverpool John Moores University, UK

This paper analyses the role of play in child-technology relations by considering how play is being re-configured through emerging digital arrangements of children's 'playtime' and 'playground'. It involves a review and document analysis of some key literature in early childhood education research focusing on digital literacies and the use of touchscreens, tablet devices and wearable technologies in early childhood settings. Some initial findings suggest that the screen is perceived as an extension of children's playgrounds or toy worlds. There is a general acceptance that the screen is a space beyond or separate from the rest of the world.

Drawing from post-phenomenological approaches of Don Ihde and Maurice Merleau-Ponty, this review problematizes and extends the notion of the digital interface beyond the computer screen. It does so by attending to the production of play and practices of literacy that emerge through the distributed arrangements and dispersed coordination of bodies, devices and spaces. This kind of methodological framing highlights the importance of the embodied and sensorial dimensions of child-technology relations in a lifeworld context and situates children's play and literacies with or through digital technologies not just with touchscreens but more importantly with touch. In doing so, it reconceptualises early childhood literacies by engaging with the concept of the 'postdigital'. A postdigital literacies project in the field takes into account forms of play and modes of literacies that are less around the screen as the object of analysis and as the boundary of digital literacies and more around the practices of interfacing across 'play worlds'.

The implication of such a move in both research and practice are considerable. The digital literacies of children's play must make visible the embodied and material make-up of touchscreens, tablet devices, virtual worlds and virtual pets by investigating ways of creating interfaces through touch. In post-phenome-

nological sense, child-technology relations present a duality wherein the child acts and is also acted upon not only cognitively and virtually, but also spatially and haptically.

6.4 – Individual papers

Chair: Jackie Marsh, University of Sheffield, UK

Room: Graphine 2

Playing the Archive: Multimodal Perspectives on Children's Playful and Dynamic Literacies

John Potter and Kate Cowan, UCL Institute of Education, UK

Recognising the ephemeral and multimodal nature of children's play continues to be an issue of particular importance as meaning-making practices change in dynamic relation to the pervasive use of digital media and technologies in contemporary culture. Young children's contemporary play-worlds are, increasingly, a complex interweaving of physical and digital dimensions, with the border areas between 'real' and 'virtual' becoming increasingly blurred. The growing prevalence of social media, virtual reality, augmented reality and mixed reality creates further opportunities for hybrid spaces where play and meaning-making shift across boundaries of space and time in new ways. Such 'dynamic literacies' (Potter & McDougall, 2017) require dynamic methods to study them. A multimodal social semiotic perspective offers insights into the affordances of modes, both physical and digital, and new possibilities for researching playful meaning-making (for example, see Cowan & Kress, 2017). In turn, this kind of research offers us the opportunity to re-conceptualise early literacy practices by a detailed exploration of the vernacular cultures of childhood play in the context of the digital.

This paper will share interim analysis of the fieldwork in 'Playing the Archive' an interdisciplinary research project funded by the EPSRC which explores archives, technologies and spaces for play conducted in the playground of an inner-city London primary school for children age 5 to 11. Using a range of ethnographic, participatory methods, we consider how contemporary play is experienced multimodally in playgrounds, and will speculate on key elements of continuity and change in children's play since the 1950s and 1960s. We are working alongside the archive of games which folklorists Iona and Peter Opie collected in those years to capture the 'kaleidoscopic vitality' of UK playgrounds through extensive observations and surveys of play (Opie, 1993). In our research we are using GoPro and Tablet video recording, aerial videos, map-making and more to explore children's own multimodal and curatorial literacy practices in

both the data collection and in negotiation with the archive itself. As the project unfolds, these insights will be used to shape a virtual play environment based on the Opie archive and the development of experimental 'smart' playgrounds in two UK cities.

Children and digital literacies: Encounters between northern algorithms and situated southern sociocultural ecologies

Mastin Prinsloo, University of Cape Town, South Africa

Research on children's engagements with digital media can sometimes draw attention to examples of spontaneous individual creativity, without always noticing the conventions and the situatedness that get encoded in such semiotic productions. I present an analytic account of how digital media, along with languaging and literacies, are translocal resources that operate as placed resources in specific contexts and offer particular kinds of affordances and agency to young children in ways that are tied up with where they are and what they are up to, within ecologies of situated practice. I draw on a series of linked ethnographic studies by myself and colleagues as to how digital media are encountered and used at home, in schools, and out of school by children in and around Cape Town, to show that their uses are shaped and distinctive with regard to their embedded uses by situated users in particular settings. My research features accounts of individuals and groups in non—dominant, sub-elite social environments and schooling settings who improvise with the technologies that they have and who use these resources in ways that are sometimes novel and often constrained, but are always about the affordances of place as much as about the media and the individual children. Rather than being accounts of deficit or disadvantage, the research aims to open up the space for an understanding of the variability and locatedness of placed media engagements that show up differences not always anticipated in their design. Through several linked studies of children using digital media in home, school and play settings, I develop an account of the complexity of use and contrast this complexity with the generalised assumptions that get made by educators and policy-makers in education around the use of media resources in schooling activities. In an account of children's home play, I show that social class differences among African children take on globalized cultural dimensions by way of language practices and online media practices, which sharpen differences between children of working professionals and children of the precariat. These differences are also seen in school uses of digital media in classroom settings and I show how this evidence of situated use shows

up the limits of policy intentions to roll out such media into a 'paperless school' environment on the basis of an ungrounded and generalised faith in the capacity of digital media resources to transform school environments in predictable and progressive ways.

Justice Starts Here: Reconceptualizing Early Childhood Literacy Education in the Commitment to Humanizing and Anti-Racist Practices

Susi Long, University of South Carolina, USA, Janice Baines and Carmen Tisdale, Richland District One Schools, Columbia South Carolina, USA

Responding to global issues of racial, ethnic, and linguistic discrimination, this session focuses on the responsibility of early childhood literacy educators to play a critical role in change. Implications from anti-racist (Kinloch & Dixon, 2017), decolonizing (Battiste, 2013), and humanizing (Salazar, 2013) pedagogies provide a foundation for this presentation which focuses on culturally relevant literacy education in the primary classroom (Baines, Tisdale, & Long, 2018; Souto-Manning & Martell, 2016). Grounded in research demonstrating that young children develop biases about themselves and others from an early age (Miller, 2015) and studies that illuminate ways that Students of Color are dehumanized through Eurocentric curricula, policies, and practice (Haddix, 2016), the session offers strategies for challenging, dismantling, and replacing what African studies scholar Asante (1992) called "white esteem curriculum." Often difficult to recognize for those not victimized by it, white esteem curricula continue to dominate instruction and assessment practices around the world, thereby impacting young children's views of themselves and each other.

Data were collected over a five-year period as I engaged with two primary grades teachers and colleagues in a preservice teacher education program asking the question: What can we learn, through our collaboration, about humanizing, anti-racist, culturally relevant practices in the primary classroom? What might those practices look like, feel like, sound like? How are challenges to the work negotiated? What is the impact on children, families, and community members? What does the work mean for training future educators and professional development for experienced teachers? Findings will be shared via: participants' racialized biographies setting the stage for educators' examination of self; voices of students and family and community members expressing the need for the pedagogical normalization of histories, literacies, and languages of Communities of Color; and the impact of specific classroom practices on young children's literacy growth and motivation. Those practices include: collecting oral community histo-

ries, learning through musical literacies and heritage lessons, building cognitive abilities through home language validation, and using literacies to develop and act on a critical consciousness. Finally, the presentation will address issues of curricular standardization and testing as methods of privilege and oppression, providing strategies for circumventing those barriers while working to replace them. Critically, the presentation will discuss why centering marginalized ways of being is important no matter the demographic of the classroom, particularly if early literacy education is to speak to issues of justice and equity within and beyond the classroom.

15.50– 16.10 Coffee Break

Room: Pioneer Room

16.15 – 17.00 Keynote E: Play Matters: Entangled literacies in early childhood makerspaces

Chair: Guy Merchant, Sheffield Hallam University, UK

Presenter: Karen Wohlwend, Indiana University Bloomington, USA

Room: Pendulum Suite

In this talk, I consider play and making as entangled literacies in early childhood makerspaces to understand how production-oriented or play-oriented environments limit and expand possibilities for literacy learning. Conceptualizing play and making as collaborative and embodied literacies shifts the focus away from text representation or artifact production to the possibilities in emergent and transient interactions produced by children's bodies and materials in fluid imaginative engagements. Using nexus analysis (Scollon & Scollon, 2004; Wohlwend 2013) informed by material feminist perspectives (Barad, 2002; Lenz-Taguchi, 2010), I examine vignettes of preschool classroom interactions and trace the here-and-now (intra-) actions when children play with materials and materials play back. This presentation challenges and expands the definition of makerspaces as STEM/STEAM labs and fabrication centers and argues for a redefinition on children's terms. In this view, makerspaces are sites of playful tinkering, where entanglements of children, materials, and literacies produce artifacts but also explore and push the limits of what's possible in their travels as children listen to and follow materials' calls to action.

17:05 – 17.15 Closing remarks

Presenter: Guy Merchant, Sheffield Hallam University, Room: Pendulum Suite

17.15 Close

First Name	Surname	Session	Anne	Hunt	4.1
Pal	Aarsand	1.5	Izabela	Jaros	3.1
Cristina	Aliagas	1.3	Kelly	Jaunzems	2.2
Valentina	Andries	2.4	Margrethe	Jernes	1.3
Charlotte	Arculus	2.1	Ana	Jorge	1.2, 3.2
Yehuda	Bar Lev	1.2, 3.3	Tolga	Kargin	2.3
Marco Alexandre	Bento	3.1			Key-
Gudrun	Boehnke-Marci	2.6	Lisa	Kervin	note A
Maria José	Brites	3.1	Sravroula	Kontovourki	3.1
Rita	Brito	2.2, 3.2	Ofra	Korat	1.3
		Key-	Marina	Kotrla Topic	4.5
Cassie	Brownell	note E	Natalia	Kucirkova	1.3, 3.3
Anne	Burke	3.5	Kristiina	Kumpulainen	1.2, 2.3
Cathy	Burnett	2.6, 3.1	Reijo	Kupiainen	1.5
Adriana	Bus	1.3, 3.3	Claudia	Lampert	2.2, 3.2
Catherine Ann	Cameron	4.1	Lena	Lee	4.3
Teresa Sofia	Castro	1.1	Vilmante	Liubinien	3.2
Lucy	Caton	2.1	Susi	Long	6.4
Stephane	Chaudron	2.6	Margarida	Lucas	3.1
Angela	Colvert	1.3	Christina	MacRae	2.1
Mary	Courage	3.3	Gudrun	Marci-Boehncke	4.4
Kate	Cowan	4.4, 6.4	Jackie	Marsh	4.2
Susan	Danby	6.2	Giovanna	Mascheroni	3.2
Karen	Daniels	3.1, 3.5	Mitsuko	Matsumoto	1.2
Maria	Dardanou	1.4	Guy	Merchant	2.6
Gabriella	Daroczi	4.3	Pekka	Mertala	6.3
Patrícia	Dias	2.2, 3.2	Zeljka	Miklosevic	1.1
Nora	Didkowsky	4.1	Tijana	Milosevic	3.2
Ashley	Donkin	6.3	Charles	Mifsud	1.3
Kristin	Dýrfjord	2.5	Monica	Mitarca	1.1
Nelly	Elias	3.4	Elyna	Nevski	3.5
Judith	Enriquez	6.3, 2.5	Peter	Nikken	1.4
		1.2, 2.5,	Alexandra	Nordström	2.3
Rosie	Flewitt	4.4	Gulash	Ozturk	1.4
Julia	Gillen	4.1	Raquel	Pacheco	1.2
		2.2, 2.6,	Lubomira	Parijkova	4.4
Lelia	Green	6.3	Giuliana	Pinto	4.1
Evelyn	Gutierrez	2.1	Iris	Pires Pereira	1.3
Abigail	Hackett	2.1	John	Potter	6.4
Leslie	Haddon	2.2, 2.6	David	Poveda	1.2
Trude	Hoel	1.3, 4.3	Tess	Prendergast	1.4
		2.2, 3.2,	Mastin	Prinsloo	6.4
Donell	Holloway	6.3	Lindsey	Rowe	4.4
	Hovgaard Jør-		Jennifer	Rowsell	4.2
Helle	gensen	6.2	Heidi	Sairanen	1.2
Anna Elisa	Hreiðarsdóttir	2.3			

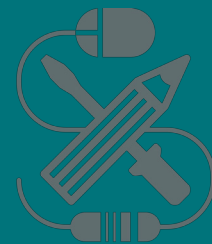
Saara	Salomaa	1.1
Helena	Sandberg	1.2
Fiona	Scott	1.2
Mark	Shillitoe	4.2, 6.1
Andra	Siibak	4.5
Ulrika	Sjoberg	1.2
Ingvild Kvale	Sørenssen	1.5
Ebba	Sundin	1.2
Cristina	Sylla	1.1, 1.3
Eufimia	Tafa	3.1
Laura	Teichert	3.4
Nils	Tolksdorf	4.5
Vitor	Tomé	1.2, 3.1
Laura	Trafi-Prats	2.1
Sascha	Trultzsch-Wi- jnen	2.5
Marianne	Undheim	4.3
Torstein	Unstad	1.4
Tom	Vandries	6.2
Jenni	Vartiainen	1.5
Anca	Velicu	3.1
Charlotte	Vidal-Hall	2.4
Tatjana	Vogel	3.1, 4.4
		Key- note D,
Jon	Wargo	4.2
		Key- note B
Debbie	Wells-Rowe	
		Key- note F
Karen	Wohlwend	
Sumin	Zhao	1.1, 2.5



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